

Data collection 2017

The Good Growth Plan



| | |
|--|------------|
| INSTRUCTIONS FOR INTERVIEWER - VISIT 1 | 3 |
| BACKGROUND INFORMATION | 4 |
| PART I: SCREENING | 5 |
| PART II: CONTACT INFORMATION | 11 |
| PART III: FARM CHARACTERISTICS | 15 |
| Z. Soil erosion and conservation | 15 |
| G. Description of growing area | 19 |
| F. Training on crop cultivation, safety measures and contact with Syngenta | 24 |
| PART IV: FARMING PRACTICES - BEFORE HARVEST | 29 |
| A. Planting and fruit development - field crops | 29 |
| B. Planting and fruit development - tree crops | 37 |
| K. Planting and fruit development - SUGARCANE | 41 |
| T. Planting and fruit development - CAULIFLOWER | 45 |
| W. Seed treatment - Belgium | 49 |
| X. Seed treatment | 53 |
| END OF PRE-HARVEST INTERVIEW | 65 |
| INSTRUCTIONS FOR INTERVIEWER - VISIT 2 | 66 |
| PART V: FARMING PRACTICES - AFTER HARVEST | 67 |
| V. Fertilizer usage | 68 |
| X. Crop protection products | 74 |
| M. Harvest timing & quality per crop - field crops | 87 |
| N. Harvest timing & quality per crop - tree crops | 96 |
| K. Harvest timing & quality per crop - SUGARCANE | 106 |
| O. Harvest timing & quality per crop - BANANA | 111 |
| Y. After harvest | 117 |
| PART VI - OTHER INPUTS - AFTER HARVEST | 119 |
| A. Input costs | 119 |
| B. Abiotic stress | 124 |
| C. Irrigation | 127 |
| PART VII - FEEDBACK | 130 |

INSTRUCTIONS FOR INTERVIEWER - VISIT 1

Please use this instruction sheet during the set-up of the before harvest interview ('VISIT 1'). Make sure to check-off all applicable boxes as you go. End by filling out your name and signature at the bottom of the page.

- Check if: REPEATED RESPONDENT
NEW RESPONDENT
Please check off box that applies

| |
|--|
| |
| |

- Note down unique ID number:

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
|--|--|--|--|--|--|

Country code (see country codes in Q2)

| | |
|--|--|
| | |
|--|--|

Farm type (1=RF and 2=BF)

| | |
|--|--|
| | |
|--|--|

Unique respondent number

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
|--|--|--|--|--|--|

FOR REPEATED RESPONDENTS, PLEASE USE EXISTING UNIQUE ID NUMBER.

- Note down date of VISIT 1:

| | |
|--|--|
| | |
|--|--|

| | |
|--|--|
| | |
|--|--|

| | | | |
|---|---|---|---|
| 2 | 0 | 1 | 7 |
|---|---|---|---|

Please check off boxes to confirm all was done:

- Hand over Syngenta grower brochure to respondent
➤ Hand over individual grower report to respondent
➤ IF NEW RESPONDENT: Hand over Syngenta welcome brochure
➤ Use CPP-list during the interview
➤ Use the grower check form during the interview
➤ Ask respondent to sign grower agreement
➤ Ask respondent to sign photo/video agreement

| |
|--|
| |
| |
| |
| |
| |
| |
| |

- NAME INTERVIEWER:

- SIGNATURE INTERVIEWER:

BACKGROUND INFORMATION

Market Probe is an independent market research agency specialized in agricultural research. For “The Good Growth Plan”, we are currently collecting farm data as part of a global project. This document is your guide for the collection of your farm data. We will already go through some topics, but we will also ask you to fill out some of the data yourself and send the information back to the market research agency.

- After planting (intermediary data transfer): PART I + II + III + IV
 - o Part V has to be left with the farmer
- After harvesting (final data transfer): PART V + VI + VII

In case of questions, please do not hesitate to contact the local help desk (INSERT LOCAL MP HELPDESK NUMBER).

Before we start data collection, we will guide you through the questionnaire, in order to make all questions clear to you. We will also give some more background information on the Good Growth Plan.

Please note that individual responses will never be reported. All data is analyzed and reported in an aggregated way.

PART I: SCREENING

In this first part, we will check the crops and fields for which we will collect data. Thanks in advance for your participation in the 2017 data collection of The Good Growth plan.

1. Please fill out the **unique code**, given by the interviewer:

UNIQUE CODE: **XX X XXX**

Country code (See country codes Q2)

Farm type (1=RF and 2=BF)

Respondent number (Unique respondent number)

ID 2 (IF APPLICABLE; 1=first season; 2=second season)

1. B. Please fill out the **date of the interview**:

Date (Date in DD.MM.YYYY)

1.C1. Have you or someone else in your farm participated in The Good Growth Plan in:

→ Tick all that applies.

→ **Multiple response.**

| | Growing area A | Growing area B |
|---------|----------------|----------------|
| 1) 2014 | 1 | 1 |
| 2) 2015 | 2 | 2 |
| 3) 2016 | 3 | 3 |

IF 1C1=2016 → INTERVIEWER: share individual grower report

1.C3. Since you have participated in The Good Growth Plan in **2016**, we would like to share with you your individual performance report. This report compares you to your colleague-farmers, in terms of yield, number of applications, use of crop protection products, and nitrogen use. For your information,

- Yield is expressed in **metric tons** per **hectare**;
- Number of crop protection product applications per **hectare**;
- Crop protection products in kilogram active ingredient per **hectare**;
- Nitrogen use in **kilogram** nitrogen per **hectare**.

Having read this document, do you consider this report:

→ Tick what applies.

→ **Single response.**

| | |
|-----------------------|----|
| Very useful | 4 |
| Rather useful | 3 |
| Not so useful | 2 |
| Not useful at all | 1 |
| Don't know /no answer | 99 |

1.C4. Please explain your answer:

1. F. We are conducting this survey on behalf of Syngenta, a manufacturer of crop protection products. Would it be okay for you for this company to contact you with follow-up information on The Good Growth Plan?

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

SCREENING: Please include screening questions on country/crop/cluster level based on separate screening document.

57. What is the size of each growing area for [TARGET CROP]?

→ Spontaneous. Please write down the size of each growing area.

→ *Single response.*

| | Growing area A | Growing area B |
|----------------------|----------------|----------------|
| Size of growing area |ha |ha |

Check: the sum of the size of growing area A and growing area B cannot be larger than Q5 and/or Q6

56. Please note down the growing area name (f.e. D-block, windmill field, ...).

→ Read. The names of both growing areas should be different.

→ *Single response.*

| | Growing area A | Growing area B |
|-------------------|----------------|----------------|
| Field description | | |

IF GROWER IS A REPEATED PARTICIPANT

56A1. Were these areas also included in The Good Growth Plan data collection in [READ], even though the size of this area might have increased or decreased?

→ Read. Please circle if this area was included in the mentioned year.

→ *Multiple response.*

| | Growing area A | Growing area B |
|---------|----------------|----------------|
| 1) 2014 | 1 | 1 |
| 2) 2015 | 2 | 2 |
| 3) 2016 | 3 | 3 |

IF Q56A1=3 (AREA NOT THE SAME AS 2016)

56A2. Please explain why the growing area(s) have changed compared to the previous year?

→ Spontaneous.

→ *Multiple response.*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| I do not cultivate [TARGET CROP] on this area this year due to crop rotation | 1 | 1 |
| I hired another area | 2 | 2 |
| I sold or rented that area of my farm (e.g. to another farmer) | 3 | 3 |
| I left my field fallow | 4 | 4 |
| I switched to a field with Syngenta protocol | 5 | 5 |
| I do not cultivate [TARGET CROP] on that area anymore | 6 | 6 |
| Other specify 1: | 96 | 96 |
| Other specify 2: | 97 | 97 |
| Other specify 3: | 98 | 98 |
| Don't know / no answer | 99 | 99 |

57A. Can you please indicate how certain you are of the size indication for each growing area?

→ READ. Check if this was measured by an official agency. If YES, note this official size.

→ **Single response.**

| | Growing area A | Growing area B |
|--|----------------|----------------|
| The size indicated is an estimation | 1 | 1 |
| The size indicated is based on my own measurement | 2 | 2 |
| The size indicated was measured by a third party and is therefore 100% correct | 3 | 3 |
| Other specify: | 96 | 96 |
| Don't know / no answer | 99 | 99 |

IF Q2=17 (COUNTRY = HUNGARY) ONLY ASK IF Q1=2 (BENCHMARK FARM)

397. Have you received a recommended growing protocol or crop program from an agricultural advisor for each growing area of [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q397=1 (received a recommended growing protocol / crop program)

397. B. From whom did you receive the protocol / crop program for each growing area of [TARGET CROP]?

→ Please tick what applies.

→ **Multiple response.**

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Dealer/store | 1 | 1 |
| Manufacturer/representative | 2 | 2 |
| Independent advisor | 3 | 3 |
| Cooperative | 4 | 4 |
| 96. Other specify: | 96 | 96 |
| 97. Other specify: | 97 | 97 |
| 98. Other specify: | 98 | 98 |
| Don't know / no answer | 99 | 99 |

IF Q397=1 (have received a recommended growing protocol / crop program)

4051. How satisfied are you with the recommendations that [INSERT ANSWER FROM Q397B] has given you?

→ Read. Please tick what applies.

→ **Single response.**

| | Dealer/store | | Manufacturer/representative | | Independent advisor | | Cooperative | |
|----------------------|----------------|----------------|-----------------------------|----------------|---------------------|----------------|----------------|----------------|
| | Growing area A | Growing area B | Growing area A | Growing area B | Growing area A | Growing area B | Growing area A | Growing area B |
| Very satisfied | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Somewhat satisfied | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Somewhat unsatisfied | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Very unsatisfied | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Don't know/no answer | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

IF Q397=1 (have received a recommended growing protocol / crop program)

397. C. Did you receive a protocol / crop program from Syngenta [INSERT NAME OF SYNGENTA PROTOCOL] for each growing area of [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

IF Q397C=1 (received a protocol / crop program from Syngenta)

397. G. Do you use the Syngenta protocol / crop program [INSERT NAME OF SYNGENTA PROTOCOL] for each growing area of [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

IF Q397C=2 (did not receive a protocol / crop program from Syngenta)

397. D. Would you like to tell us from which manufacturer you've received a protocol / crop program for each growing area of [TARGET CROP]?

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q397=1 (received a recommended growing protocol / crop program)

397. F. Could you please give a description of the protocol / crop program for each growing area of [TARGET CROP]? What are the main recommendations included in the crop program?

→ Please write down the description of the protocol.

→ Please probe for items such as dose rates, seed treatment, product names, amount of water,... Several different activities can be included in the protocol.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q397=1 (received a recommended growing protocol / crop program)

4054. Can you please indicate whether you will ... [READ] follow the recommended protocol / crop program?

→ Read.

→ *Single response.*

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Completely | 1 | 1 |
| Partially | 2 | 2 |
| Not at all | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q397=1 (received a recommended growing protocol / crop program)

Q4054.B. Could you please explain your answer?

→ Please explain and provide as much detail as possible.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

IF Q4054=1 or 2 (protocol at least partially applied on selected growing area)

Q4052.B. On what type of field will you apply the protocol?

| | Growing area A | Growing area B |
|-------------------------------|----------------|----------------|
| Research and Development plot | 1 | 1 |
| Demonstration-plot | 2 | 2 |
| Fully commercial field | 3 | 3 |

4055. Can you please share what your yield objective is on both growing areas for [TARGET CROP] at the beginning of this season?

→ Please write down the yield for each growing area.

| | Growing area A | Growing area B |
|-----------------|--------------------|--------------------|
| Yield objective |metric ton/ha |metric ton/ha |

PART II: CONTACT INFORMATION

Interviewer note: please verify the information on the check form together with the grower and complete ALL of the questions below with most recent information. Please note that it is important that we are able to contact and locate the respondent again next year. We require at least the postal code, city and GPS location.

We will now ask some questions about you, mainly so that we will be able to contact you again next year. These questions are not used to identify you individually, but will always be used in an aggregated way.

19. Surname

→ Please write down the surname in capital letters.

→ *Single response.*

20. First name

→ Please write down the first name in capital letters.

→ *Single response.*

21. Phone number

→ Please write down the phone number, including the country and region codes.

→ *Single response.*

22. E-mail address

→ Please write down the e-mail address in capital letters.

→ *Single response.*

22. B. Farm name or point of recognition in the neighborhood

→ Please write down the farm name in capital letters.

→ *Single response.*

22. C. Please add a description of the location of this farm if needed

→ Please write down a description referring to aspects such as nearest church/school/water source ...

→ *Single response.*

22. D. Please give the GPS location of the MIDDLE of your growing areas.

→ Note down the latitude and longitude of one point and indicate whether it is North/South and West/East.

GROWING AREA A

| a) Latitude In degrees, minutes, seconds | b) Direction 1=North 2=South |
|---|------------------------------------|
| ° ' '' | |

| c) Longitude In degrees, minutes, seconds | d) Direction 1=East 2=West |
|--|----------------------------------|
| ° ' '' | |

GROWING AREA B

| a) Latitude In degrees, minutes, seconds | b) Direction 1=North 2=South |
|---|------------------------------------|
| ° ' '' | |

| c) Longitude In degrees, minutes, seconds | d) Direction 1=East 2=West |
|--|----------------------------------|
| ° ' '' | |

23. Farm address - street

→ Please write down the street name of the location of the farm in capital letters.

→ **Single response.**

24. Farm address - street number

→ Please write down the street number.

→ **Single response.**

25. Farm address - postal code

→ Please write down the postal code of the city in which the farm is located.

→ **Single response.**

26. **Farm address - city**

→ Please write down the city in which the farm is located.

→ *Single response.*

27. **Please note down the year of birth**

→ Please write down your birth year.

→ *Single response.*

28. **Gender**

→ Please circle the gender.

| | | |
|--|--------|---|
| | Male | 1 |
| | Female | 2 |

31. **Until what age did you go to school?**

→ Please write down the age until when the grower went to school.

→ *Single response.*

30. **Are you a full-time or part-time farmer?**

→ Please circle your answer.

→ *Single response.*

| | |
|---|----|
| I am a full-time grower (no other activities generating income apart from farming) | 1 |
| I am a part-time grower (having other activities generating income, like teaching, ...) | 2 |
| Other specify: | 96 |
| Don't know / no answer | 99 |

30. B. **How long have you been engaged in farming activities?**

→ *Single response.*

33. **Did you receive an agronomical/agricultural education?**

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

34. **Are you a member of a producer group, association or cooperative?**

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

IF Q34=1 (member of a producer group / association / cooperative)

35. A. What is the name of the producer group/association/cooperative that you are a member of?

→ Please note down the answer. If member of several, please note down all.

→ **Multiple response.**

| |
|--|
| |
| |
| |

ONLY IF Q2=5 (BELGIUM)

35. B. Do you collaborate with a growing consultancy agency (e.g. TACO)?

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

35. C. Overall, how satisfied would you say you are with your life these days? Please use a scale from 1 to 10, where 1 means “not satisfied at all” and 10 means “very satisfied”.

→ Please write down the satisfaction level on a scale from 1 to 10.

→ Please use code 99 for don't know.

→ **Single response.**

| |
|----------------------------|
| (scale from 1 to 10) |
|----------------------------|

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

35. D. Please explain your answer.

→ Please explain and provide as much detail as possible.

→ Please probe for activities related to farming if the grower does not mention this.

| |
|--|
| |
|--|

PART III: FARM CHARACTERISTICS

Z. Soil erosion and conservation

We will now speak about soil erosion and conservation. The following questions are about your farm practices in general, without focusing on [TARGET CROP].

37. A. Water erosion signs range from the “splashing” of soil particles over the soil surface and onto crops after heavy rain or irrigation, to the formation of small rills or larger gulleys down hillslopes, traversing down slopes like streams. Do you have signs of soil erosion by water on your farm?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

37. B. Wind erosion signs range from the appearance of dust clouds, especially on dry days, particularly when the soil is ploughed to “sandblasting” effects of fine sand particles hitting leaves and marking them. Do you have signs of soil erosion by wind on your farm?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

- Q7001. Have you changed your tillage practices for [TARGET CROP] in the past 20 years?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If q7001 = yes

- Q7002. How did you change your tillage practices on each growing area for [TARGET CROP]?

→ Single response

| | Growing area A | Growing area B |
|--|----------------|----------------|
| From no tillage to reduced tillage | 1 | 1 |
| From no tillage to conventional tillage | 2 | 2 |
| From reduced tillage to no tillage | 3 | 3 |
| From reduced to conventional tillage | 4 | 4 |
| From conventional tillage to no tillage | 5 | 5 |
| From conventional tillage to reduced tillage | 6 | 6 |
| Don't know/ no answer | 99 | 99 |

If q7001 = yes

- Q7003. How many years ago did you change your tillage practices on each growing area for [TARGET CROP]?

→ Please note down how many years ago the tillage practices have changed

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| How many years ago? | ... years | ... years |

Q7004. Have you started growing a cover crop in the past 20 years on the growing area(s) for [TARGET CROP]?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

(IF Q2 = 13 (France) and Q7004 = 1)

Q7004.B. How do you destroy your cover crop?

→ Spontaneous, please be as specific as possible

| Growing area A | Growing area B |
|----------------|----------------|
| | |

(IF Q2 = 13 (France) and Q7004 = 1)

Q7004. C. Could you tell us how much the cover crop costs per ha?

| | Growing area A | Growing area B |
|------|----------------|----------------|
| Cost | ... €/ha | ... €/ha |

(IF Q2 = 13 (France) and Q7004 = 1)

Q7004. D. Would you like to learn more on how to improve your cover crop management?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If Q7004 = yes

Q7005. How many years ago did you start growing a cover crop on each growing area for [TARGET CROP]?

→ Please note down how many years ago the grower started growing a cover crop

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| How many years ago? | ... years | ... years |

Q7006. Have you stopped growing a cover crop in the past 20 years on the growing area(s) for [TARGET CROP]?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If Q7006 = yes

Q7007. How many years ago did you stop growing a cover crop on the growing area(s) for [TARGET CROP]?

→ Please note down how many years ago the grower stopped growing a cover crop

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| How many years ago? | ... years | ... years |

Q7008. Was any part of your land converted to or from arable land, grassland or forest in the past 20 years on the growing area(s) for [TARGET CROP]?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If Q7008 = yes

Q7009. How did the destination of your land change on the growing area(s) for [TARGET CROP]?

→ Single response

| | Growing area A | Growing area B |
|-------------------------------|----------------|----------------|
| From grassland to arable land | 1 | 1 |
| From grassland to forest | 2 | 2 |
| From forest to grassland | 3 | 3 |
| From forest to arable land | 4 | 4 |
| From arable land to grassland | 5 | 5 |
| From arable land to forest | 6 | 6 |
| 98: Other. Specify ... | | |
| Don't know / no answer | 99 | 99 |

If Q7008 = yes

Q7010. How many years ago did the function of your land change on the growing area(s) for [TARGET CROP]?

→ Please note down how many years ago the function of the grower's land changed

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| How many years ago? | ... years | ... years |

G. Description of growing area

For the next topics, we will focus on [TARGET CROP] on the selected growing areas. We are interested in knowing more about the area itself as well as how you grow crops on it.

Interviewer note: please remind the grower of the names and sizes of the areas (!) Q56 and Q57

58. In general, what is the topography of each growing area for [TARGET CROP]?

→ Please note down the slope of each growing area. Please write down other if needed.

→ *Single response.*

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Hilly | 1 | 1 |
| Flat | 2 | 2 |
| Gentle slope | 3 | 3 |
| Steep slope | 4 | 4 |
| Valley | 5 | 5 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

DO NOT INCLUDE IF Q2=29 (NETHERLANDS) OR Q2=17 (HUNGARY)

65. Do you practice intercropping (growing multiple crops on the same growing area in the same season) on each growing area for [TARGET CROP]?

→ Read.

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

DO NOT INCLUDE IF Q2=29 (NETHERLANDS) OR Q2=17 (HUNGARY)

IF Q65=1 (intercropping)

66. Which crops do you intercrop on each growing area with [TARGET CROP]?

→ Please circle all crops you intercrop. Also look at code list on next page (more crops included).

→ Interviewer instruction: Also include [TARGET CROP].

→ Multiple response.

| | Growing area A | Growing area B |
|--------------|----------------|----------------|
| Apples | 1 | 1 |
| Banana | 2 | 2 |
| Barley | 3 | 3 |
| Cauliflower | 4 | 4 |
| Cocoa | 5 | 5 |
| Coffee | 6 | 6 |
| Corn | 7 | 7 |
| Cotton | 8 | 8 |
| Grape | 9 | 9 |
| Oilseed rape | 10 | 10 |
| Pear | 11 | 11 |
| Pepper | 12 | 12 |
| Potato | 13 | 13 |
| Rice | 14 | 14 |
| Soybean | 15 | 15 |
| Stone fruit | 16 | 16 |
| Sugarcane | 17 | 17 |
| Sunflower | 18 | 18 |
| Tomato | 19 | 19 |
| Watermelon | 20 | 20 |
| Wheat | 21 | 21 |

OTHER CROPS

| | | | |
|---|----|-----------------------------------|----|
| Alfalfa/lucerna | 22 | Leek | 57 |
| Asparagus | 23 | Lettuce | 58 |
| Avocado | 24 | Longan | 59 |
| Beets/roots (turnip, yam ...) | 25 | Managu (African nighshade) | 60 |
| Berries | 26 | Mango | 61 |
| Bitter melon | 27 | Millet | 62 |
| Broccoli | 28 | Mushroom | 63 |
| Brussels sprout | 29 | Nuts | 64 |
| Cabbage | 30 | Oats | 65 |
| Carrot | 31 | Olive | 66 |
| Cassava | 32 | Onion | 67 |
| Cauliflower (in general) | 33 | Other melons | 68 |
| Celeriac | 34 | Other peppers | 69 |
| Celery | 35 | Other potatoes | 70 |
| Cherry | 36 | Other rice | 71 |
| Chicory | 37 | Other wheat | 72 |
| Citrusfruit (orange, lemon) | 38 | Palm oil | 73 |
| Coconut (palm tree) | 39 | Papaya | 74 |
| Cover crop | 40 | Passion fruit | 75 |
| Cucumber | 41 | Peach | 76 |
| Dasheen | 42 | Pineapple | 77 |
| Eggplant | 43 | Pomme granate | 78 |
| Eucalyptus | 44 | Prune | 79 |
| Fennel | 45 | Pulses (lentils, beans, peas ...) | 80 |
| Flax | 46 | Pumpkin/squash | 81 |
| Flowers | 47 | Quinoa | 82 |
| Forage | 48 | Radish | 83 |
| Garlic | 49 | Rubber | 84 |
| Grass | 50 | Seeds (chia, sesame ...) | 85 |
| Grassland (pasture/artificial/temporary) | 51 | Spelt | 86 |
| Guava | 52 | Spinach | 87 |
| Herbs (coriander, cinnamon ...) | 53 | Strawberry | 88 |
| Jute | 54 | Sugar beet | 89 |
| Kale | 55 | Zucchini | 90 |
| Lady finger (Okra) | 56 | | |
| Other. Specify 1: | | | 96 |
| Other. Specify 2: | | | 97 |
| Other. Specify 3: | | | 98 |
| Don't know / no answer | | | 99 |

IF Q4=3; 4; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21 (question only applies to FIELD CROPS)

60. Do you rotate crops on each growing area for [TARGET CROP]?

→ Please circle your answer. (SR)

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q4=3; 4; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21 (question only applies to FIELD CROPS)

IF Q2=17 (HUNGARY) only include following codes: 3, 7, 10, 13, 15, 18, 21

IF Q60=1 (crop rotation)

61. What crops are you cultivating in rotation on each growing area for [TARGET CROP]?

→ Please circle all that apply for each growing area.

Note down other crops if not in list. Use same code list as Q66.

→ Multiple response.

| | Growing area A | Growing area B |
|-------------------------------------|----------------|----------------|
| Apples | 1 | 1 |
| Banana | 2 | 2 |
| Barley | 3 | 3 |
| Cauliflower for processing industry | 4 | 4 |
| Cocoa | 5 | 5 |
| Coffee | 6 | 6 |
| Corn | 7 | 7 |
| Cotton | 8 | 8 |
| Grape | 9 | 9 |
| Oilseed rape | 10 | 10 |
| Pear | 11 | 11 |
| Pepper | 12 | 12 |
| Potato | 13 | 13 |
| Rice | 14 | 14 |
| Soybean | 15 | 15 |
| Stone fruit | 16 | 16 |
| Sugarcane | 17 | 17 |
| Sunflower | 18 | 18 |
| Tomato | 19 | 19 |
| Watermelon | 20 | 20 |
| Wheat | 21 | 21 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

67. What is the soil type of each growing area for [TARGET CROP]?

→ Spontaneous Note down other soil type if not in list. (SR)

| | Growing area A | Growing area B |
|----------------------------|----------------|----------------|
| clay soil | 1 | 1 |
| silty clay soil | 2 | 2 |
| silty clay loam soil | 3 | 3 |
| clay loam soil | 4 | 4 |
| loam soil | 5 | 5 |
| silt loam soil | 6 | 6 |
| silt soil | 7 | 7 |
| sandy clay soil | 8 | 8 |
| sandy clay loam soil | 9 | 9 |
| sandy loam soil | 10 | 10 |
| loamy sand soil | 11 | 11 |
| sandy soil | 12 | 12 |
| 98. Other. Specify: | | |
| Don't know / no answer | 99 | 99 |

67. B. What type of texture is your soil on each growing area for [TARGET CROP] this season?

→ Single response

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Heavy - this includes clayey soils that are hard to plough, especially if dry | 1 | 1 |
| Medium - this includes loamy soils that are moderately hard to plough | 2 | 2 |
| Light - this includes sandy soils that are easy to pull a plough through, even when dry | 3 | 3 |
| Don't know / no answer | 99 | 99 |

Q7011. How moist would rate your soil on each growing area for [TARGET CROP] this season?

→ Single response

| | Growing area A | Growing area B |
|-------|----------------|----------------|
| Moist | 1 | 1 |
| Dry | 2 | 2 |

Q7012. How would you rate the drainage of water through the soil on each growing area for [TARGET CROP] this season?

→ Single response

| | Growing area A | Growing area B |
|---------------|----------------|----------------|
| Good drainage | 1 | 1 |
| Poor drainage | 2 | 2 |

F. Training on crop cultivation, safety measures and contact with Syngenta

In this topic, we will first ask you about training on crop cultivation and safety measures (for example, safety practices related to the usage of crop protection products). Afterwards, we will ask some questions concerning your relationship and contacts with Syngenta.

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

55. E1. Have you followed a training or farmers meeting on crop growing and/or agricultural practices in the past 2 years?

→ Please circle what applies.

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

IF Q55E1=1 (Yes)

Q5500. During the training/farmers meeting, did they talk at least 15 minutes about safe-use practices related to crop protection products, fertilizers etc... ?

→ Please circle what applies.

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

IF Q55E1=1 (Yes)

55. E2. Who organized this training?

→ Spontaneous

→ Multiple response

| | |
|---|----|
| Syngenta representative | 1 |
| Internet | 2 |
| Extension officer | 3 |
| Cooperative | 4 |
| Agronomist/advisor | 5 |
| Supplier | 6 |
| Governmental organization (e.g. Ministry) | 7 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

IF Q2 = 13 (Country = France) and Q55E1 = 1

Q55. E13. How many times did you attend a technical day with a safe use training during the past year?

| |
|-----------|
| ... times |
|-----------|

IF Q2=22 (Japan) → only ask RF

DO NOT ASK IF Q2 = 13 (Country = France) OR Q2=17 (Country=Hungary)

Q5501. Have you been contacted by a Syngenta representative during the past season?

→ Please circle what applies

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

If Q5501 yes

DO NOT ASK IF Q2 = 13 (Country = France) OR Q2=17 (Country=Hungary)

Q5502. Can you please describe how the Syngenta representative contacted you?

→ Multiple response

| | |
|------------------------|----|
| Demonstration day | 1 |
| They visited my farm | 2 |
| Received a brochure | 3 |
| Phone call | 4 |
| E-mail communication | 5 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

If Q5501=yes

DO NOT ASK IF Q2 = 13 (Country = France) OR Q2=17 (Country=Hungary)

Q5503. Would you say that the contact with the Syngenta representative was ... [READ SCALE]?

→ Single response

| | |
|------------------------|----|
| Not useful at all | 1 |
| Not very useful | 2 |
| Rather useful | 4 |
| Very useful | 5 |
| Don't know / no answer | 99 |

DO NOT ASK IF Q2=17 (Country=Hungary)

4041. A. Do you feel the need to follow training on crop cultivation in the near future (during the season of your [TARGET CROP])?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

DO NOT ASK IF Q2=17 (Country=Hungary)

IF Q4041. A. =1 (need to follow training)

4041. B. What would you like to learn?

→ Spontaneous. Please be as specific as possible.

ALL OF THE FOLLOWING QUESTIONS ONLY APPLY FOR BELGIUM (Q2=5) AND NETHERLANDS (Q2=29)

54. Where do you deposit the rest water after spraying?

→ Spontaneous.

→ Multiple response.

| | |
|---|----|
| Citerne (phytobac, heliosecc, sentinel, biofilter, ...) | 1 |
| In fields | 2 |
| In rivers, streams, drain or via the ditch | 3 |
| I don't have any rest water after spraying | 90 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

IF Q54=1 (CITERNE)

54 A. If you used a citerne to deposit the rest water after spraying, how many liters of rest water did you cleanse in 2016?

→ Please fill in the number of liters you cleansed using a citerne.

| | |
|--------------------------------|------------|
| Number of liters of rest water | ... liters |
|--------------------------------|------------|

55. A. Where do you clean your spraying equipment?

→ Multiple response

→ Spontaneous

| | |
|-------------------------------------|----|
| On farm | 1 |
| On field | 2 |
| I don't clean my spraying equipment | 90 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

IF Q55A=1 or 2 or 96 or 97 or 98 (cleaned spraying equipment)

55 B. Where do you dispose of the cleaning water used for cleaning the equipment?

→ Spontaneous.

→ Multiple response

| | |
|---|----|
| On field | 1 |
| Citerne (phytobac, heliosecc, sentinel, biofilter, ...) | 2 |
| On an unpaved surface | 3 |
| On a paved surface (drain / dike) | 4 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

55 B1. Do you clean empty product packages?

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

IF Q55B1=1 (cleans empty product packages)

55 B2. Where do you dispose the cleaning water used for cleaning the empty packages?

→ *Spontaneous*

→ *Multiple response*

| | | |
|------------------|---|----|
| | On field | 1 |
| | Citerne (phytobac, heliosecc, sentinel, biofilter, ...) | 2 |
| | On an unpaved surface | 3 |
| | On a paved surface (drain / dike) | 4 |
| Other specify 1: | | 96 |
| Other specify 2: | | 97 |
| Other specify 3: | | 98 |
| | Don't know / no answer | 99 |

55 C. Do you store the sprayer protected from rain?

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

55 D. Do you use drift-reducing nozzles on your sprayer?

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

IF Q55D=1 (uses drift reducing nozzles)

55 D1. What is the percentage of drift reduction for these nozzles?

→ *Single response.*

| | | |
|-----------------|------------------------|----|
| | 50% drift reduction | 1 |
| | 75% drift reduction | 2 |
| | 90% drift reduction | 4 |
| Other. Specify: | | 98 |
| | Don't know / no answer | 99 |

55 D2. Do you use a tank with clean water on your sprayer?

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

ONLY IF Q2=5 (BELGIUM)

55. F. Do you have a phyto license this season?

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

ONLY IF Q2=5 (BELGIUM) and IF Q55F=1 (YES)

55. G. Which kind of phyto license do you have?

→ Single response.

→ Spontaneous

| | | |
|-----------------|------------------------|----|
| | P1 | 1 |
| | P2 | 2 |
| | P3 | 3 |
| | NP | 4 |
| | P2s | 5 |
| Other. Specify: | | 98 |
| | Don't know / no answer | 99 |

PART IV: FARMING PRACTICES - BEFORE HARVEST

We will now speak about your farming practices, including the things you do to the field before harvest, the advice you follow and programs you are involved in.

A. Planting and fruit development - field crops

IF Q2=17 (Country = Hungary) => Please write down "hybrid varieties"

71. Could you please note down the variety that has been used for each growing area for [TARGET CROP]?

→ Please note down the main variety that has been used for each growing area.

| | Growing area A | Growing area B |
|---------|----------------|----------------|
| Variety | ... | ... |

IF Q2=20 (ITALY) AND IF Q4= 7 (CORN)

71. B. Please indicate per growing area if you planted a hybrid corn seed variety.

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q2=37 (SPAIN) AND IF Q4= 3 (BARLEY)

71. C. Could you please note down the strengths of the Barley variety that you have sown.

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q2=37 (SPAIN) AND IF Q4= 3 (BARLEY)

71. D. Could you please note down the weaknesses of the Barley variety that you have sown.

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q2=37 (SPAIN) AND IF Q4= 3 (BARLEY)

71. E. Could you please rate the productivity of the area in which you have sown your seeds?

→ Single response

| | Growing area A | Growing area B |
|-------------------------------|----------------|----------------|
| Not at all productive | 1 | 1 |
| Not productive | 2 | 2 |
| Average level of productivity | 3 | 3 |
| Rather productive | 4 | 4 |
| Very productive | 5 | 5 |
| Don't know / no answer | 99 | 99 |

72. When did the first field preparation start for each growing area for [TARGET CROP]?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: First field preparation is the very first date that an action (e.g. fertilizer application) is taken on field. Therefore, please compare this date with fertilizer and crop protection product application dates. First field preparation should also take place before sowing.

| | Growing area A | Growing area B |
|------------------------------|-----------------------------|-----------------------------|
| Date first field preparation | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

Q72b. Can you please explain what you consider the first field preparation activity?

→ Spontaneous. For example: ploughing, fertilizing ...

| Growing area A | Growing area B |
|----------------|----------------|
| | |

73. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for [TARGET CROP]?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

| | Growing area A | Growing area B |
|--------------------------------------|----------------|----------------|
| Seed density in kilogram per hectare |kg/ha |kg/ha |

IFQ73=-1 (don't know the amount of seeds in kg/ha)

IF Q2=17 (Country = Hungary) => ADD INTERVIEWER NOTE: SEED DENSITY IS USUALLY MENTIONED IN SEEDS / HECTARE

73.A1. What is the amount of seeds that has been sown for each of the growing areas?

→ Please write down the amount of seeds used including the measurement unit used.

| | Growing area A | Growing area B |
|-----------------|----------------|----------------|
| Amount of seeds | | |

Q7014. How moist was your soil at the time of sowing on each growing area for [TARGET CROP] this season?

→ Please circle your answer

| | Growing area A | Growing area B |
|-------|----------------|----------------|
| Moist | 1 | 1 |
| Dry | 2 | 2 |

IF Q4=14 (RICE)

116. What production system (ways of planting rice) is used on each growing area for rice? Was it ... [READ]?

→ *Single response*

→ Please tick what applies for each growing area. Only one answer possible per growing area. Note down other if not in list.

| | Growing area A | Growing area B |
|--------------------------------------|----------------|----------------|
| Transplanted (TR) | 1 | 1 |
| Direct-seeded (DS) | 2 | 2 |
| Direct-seeded, wet-sown (DSWS) | 3 | 3 |
| Direct-seeded, dry-sown (DSDS) | 4 | 4 |
| System of Rice Intensification (SRI) | 5 | 5 |
| 98. Other. Specify | | |
| Don't know / no answer | 99 | 99 |

IF Q4=14 (RICE) OR Q4=18 (SUNFLOWER)

119. Please indicate the inter-row space that is applied on each growing area?

→ Please note down the inter-row space in centimeter for each growing area.

| | Growing area A | Growing area B |
|-----------------|----------------|----------------|
| Inter-row space |cm |cm |

IFQ4=13 (POTATO) & NOT IF Q2=22 (JAPAN)

123. B. Which type of potatoes do you cultivate on each growing area for potato?

→ READ, *single response*.

→ Please note down the type of potato that has been cultivated for each growing area.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| Potatoes for fresh use | 1 | 1 |
| Potatoes for process use | 2 | 2 |
| Starch potatoes | 3 | 3 |
| Seed potatoes | 4 | 4 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q2=22 (JAPAN)

123. C. Which type of potatoes do you cultivate on each growing area for potato?

→ READ, single response.

→ Please note down the type of potato that has been cultivated for each growing area.

→ Interviewer note: in cluster 2, growers should select either starch potatoes or chips potatoes

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| Potatoes for fresh use | 1 | 1 |
| Potatoes for process use | 2 | 2 |
| Starch potatoes | 3 | 3 |
| Seed potatoes | 4 | 4 |
| Chips potatoes | 5 | 5 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

151. Are [TARGET CROP] grown on open field or in a greenhouse for each growing area?

→ Please indicate what applies. Please write down other if needed.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Open field | 1 | 1 |
| Active Greenhouse | 2 | 2 |
| Passive Greenhouse | 3 | 3 |
| 98. Other. Specify 1: | ... | ... |
| Don't know / no answer | 99 | 99 |

154. A. What is the number of plants that has been transplanted per m² for each growing area for tomatoes/peppers?

→ Please note down the number of plants that has been transplanted per m^2 for each growing area.

| | Growing area A | Growing area B |
|---------------|--------------------------------------|---------------------------------------|
| Plant density |number of plants/m ² |number of plants /m ² |

4073. Are you ploughing between lines of the sunflower once it has been established?

→ Please tick what applies. (SR)

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

→ Please write down the date of sowing/planting for each growing area.

| | Growing area A | Growing area B |
|----------------------|-------------------------------------|---------------------------------|
| Sowing/planting date | --. --. --. --. --. (DD.MM.YYYY) | --. --. --. --. (DD.MM.YYYY) |

Q7400. Have you sown / planted [TARGET CROP] in the same period as last year?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If 07400 = no

Q7401. Please explain why you have sown / planted in a different period than last year.

→ *Spontaneous.*

| Spontaneous: | |
|----------------|----------------|
| Growing area A | Growing area B |
| | |

ONLY IF Q2=37 and Q4=18 (Spain; sunflower)

74. B. Have you planted a sunflower variety with the Clearfield Production System?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

ONLY IF Q2=37 and Q4=18 and Q74.B = 1 (Spain; sunflower)

74. C. When did you plant the sunflower seeds with the Clearfield Production System trait for each growing area for [TARGET CROP]?

→ Please write down the date of sowing/planting for each growing area.

| | Growing area A | Growing area B |
|--------------------------|------------------------------|------------------------------|
| Clearfield planting date | --. --. ---- (DD.MM.YYYY) | --. --. ---- (DD.MM.YYYY) |

ONLY IF Q2=35 and Q4=18 (Russia; sunflower)

2521. And what is the country of origin of the sunflower seeds variety for each growing area?

- Please note down the country of origin of the sunflower seeds variety for each growing area.
→ Single response.

| GROWING AREA A | | | | GROWING AREA B | | | |
|------------------------|----|---------|----|------------------------|----|---------|----|
| France | 13 | Ukraine | 46 | France | 13 | Ukraine | 40 |
| Hungary | 17 | Kenya | 24 | Hungary | 17 | USA | 41 |
| Russia | 35 | | | Russia | 35 | | |
| Other. Specify: | | | 98 | Other. Specify: | | | 98 |
| Don't know / no answer | | | 99 | Don't know / no answer | | | 99 |

ONLY IF Q2=35 and Q4=18 (Russia; sunflower)

2523. A. What is the weight of thousand seeds that have been sown for each growing area for sunflower?

→ Please note down the weight of thousand seeds for each growing area.

| | Growing area A | Growing area B |
|--------------|------------------------------------|------------------------------------|
| Seed density |weight of 1000 seeds in kg |weight of 1000 seeds in kg |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done every activity or not. If YES: please continue with all other questions related to this activity below.

- A. How many times did you perform the activity? One performance equals the treatment of the entire area.
- B. How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.
- C. Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.
 - Machines rely on non-human energy sources: for example: fuel or petrol
- D. Please tell us which type of machinery you used to complete the activity
 - Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.
- E. Could you tell us which type of fuel the machine consumes?
 - For example: diesel or petrol

| Growing area A | | | | | | |
|---|---|--|--|---|--|--|
| | Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY]. | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 2. Ploughing Breaking and turning over the earth with a plow. | | | | | | |
| 3. Digging Loosening the earth or digging a hole. | | | | | | |
| 4. Ridging Plowing alternate strips by throwing the furrow onto the unplowed strip. | | | | | | |
| 5. Ripping Breaking up the compacted soil layers. | | | | | | |
| 6. Land levelling Levelling the field to improve e.g. irrigation or water usage. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 10. Sowing or planting | | | | | | |
| IF Q2=22 10b. In-furrow activities | | | | | | |

| | Growing area B | | | | | |
|---|--|--|---|--|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 2. Ploughing Breaking and turning over the earth with a plow. | | | | | | |
| 3. Digging Loosening the earth or digging a hole. | | | | | | |
| 4. Ridging Plowing alternate strips by throwing the furrow onto the unplowed strip. | | | | | | |
| 5. Ripping Breaking up the compacted soil layers. | | | | | | |
| 6. Land levelling Levelling the field to improve e.g. irrigation or water usage. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 10. Sowing or planting | | | | | | |
| IF Q2=22 10b. In-furrow activities | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

B. Planting and fruit development - tree crops

We will now focus on the practices you plan to do including information on the trees themselves, labor hours and machinery used.

196. Could you please note down the variety that has been used for each growing area for [TARGET CROP]?

→ Please note down the main variety that has been used for each growing area.

| | Growing area A | Growing area B |
|---------|----------------|----------------|
| Variety | ... | ... |

197. What is the year of planting for each growing area for [TARGET CROP]?

→ Please note down the year of planting for each growing area.

→ Interviewer note: If the growing area remained the same, please use the check form to verify if the year of planting corresponds with the planting year mentioned in 2016.

| | Growing area A | Growing area B |
|------------------|----------------|----------------|
| Year of planting | | |

198. B. What is the total number of trees per hectare for each growing area for [TARGET CROP]?

→ Please note down the total number of trees per hectare for each growing area.

→ Interviewer note: If the growing area remained the same, please use the check form to verify if the average number of trees corresponds with the planting year mentioned in 2015.

| | Growing area A | Growing area B |
|--------------|----------------|----------------|
| Tree density |trees/ha |trees/ha |

IF Q4=9 (GRAPES)

96. What is the total number of grape vines for each growing area for grape?

→ Please note down the total number of grape vines for each growing area.

| | Growing area A | Growing area B |
|-----------------------|------------------|------------------|
| Number of grape vines |grape vines |grape vines |

IF Q4=16 (STONE FRUIT)

4061. Please indicate the inter-row space between stone fruit trees (planting distance) that is applied on each growing area?

→ Please note down the inter-row space in centimeter for each growing area.

| | Growing area A | Growing area B |
|-----------------|----------------|----------------|
| Inter-row space |cm |cm |

183. Do you prune each growing area for [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q183=1 (YES) and IF Q4≠1; 11 (NOT APPLE OR PEAR)

4062. When did the pruning period of the trees start for each growing area for [TARGET CROP]?

→ Please write down the period of pruning for each growing area.

| | Growing area A | | Growing area B | |
|----------------|----------------|--|----------------|--|
| Pruning period | A | From ____ . ____ . ____ (DD.MM.YYYY) | A | From ____ . ____ . ____ (DD.MM.YYYY) |
| | B | Until ____ . ____ . ____ (DD.MM.YYYY) | B | Until ____ . ____ . ____ (DD.MM.YYYY) |

IF Q4=1; 11 (APPLE OR PEAR) AND IF Q183=1 (YES)

184. When did the winter pruning of the trees start for each growing area for [TARGET CROP]?

→ Please write down the period of pruning for each growing area.

| | Growing area A | | Growing area B | |
|----------------|----------------|--|----------------|--|
| Pruning period | A | From ____ . ____ . ____ (DD.MM.YYYY) | A | From ____ . ____ . ____ (DD.MM.YYYY) |
| | B | Until ____ . ____ . ____ (DD.MM.YYYY) | B | Until ____ . ____ . ____ (DD.MM.YYYY) |

IF Q4=1; 11; 16 (APPLE OR PEAR OR STONE FRUIT)

185. When did the first trees reach the flowering stage for each growing area for [TARGET CROP]?

→ Please write down the flowering date for each growing area.

| | Growing area A | Growing area B |
|----------------|------------------------------|------------------------------|
| Flowering date | __ . __ . __ (DD.MM.YYYY) | __ . __ . __ (DD.MM.YYYY) |

IF Q4=16 (STONE FRUIT)

4063. Please indicate the average height of the stone fruit trees on each growing area?

→ Please note down the height in centimeter for each growing area.

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| Height of the trees |cm |cm |

IF Q4=16 (STONE FRUIT)

4064. Please indicate the average width of the stone fruit trees on each growing area?

→ Please note down the inter-row space in centimeter for each growing area.

| | Growing area A | Growing area B |
|--------------------|----------------|----------------|
| Width of the trees |cm |cm |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 14. Pruning To cut parts of branches to improve shape or growth. | | | | | | |
| 21. Top/side grafting Replacing part of a branch with another part (e.g. from a different variety). | | | | | | |
| 96. Other specify 1: | | | | | | |
| 97. Other specify 1: | | | | | | |
| 98. Other specify 1: | | | | | | |

| Growing area B | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 14. Pruning To cut parts of branches to improve shape or growth. | | | | | | |
| 21. Top/side grafting Replacing part of a branch with another part (e.g. from a different variety). | | | | | | |
| 96. Other specify 1: | | | | | | |
| 97. Other specify 1: | | | | | | |
| 98. Other specify 1: | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

→ *Spontaneous.*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

K. Planting and fruit development - SUGARCANE

We will now focus on the practices you plan to do including the seeding, labor hours and machinery used.

141. Could you please note down the sugarcane variety that has been used for each growing area for sugarcane?

→ Please note down the sugarcane variety that has been used for each growing area.

| | Growing area A | Growing area B |
|-------------------|----------------|----------------|
| Sugarcane variety | ... | ... |

142. What is the date of planting for each growing area for sugarcane?

→ Please note down the date of planting for each growing area.

| | Growing area A | Growing area B |
|------------------|------------------------------|------------------------------|
| Date of planting | --. --. ---- (DD.MM.YYYY) | --. --. ---- (DD.MM.YYYY) |

Q142b. Have you sown / planted [TARGET CROP] in the same period as last year?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If no on q142b

Q142c. Please explain why you have sown / planted in a different period than last year.

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

Q7014. How moist was your soil at the time of planting on each growing area for [TARGET CROP] this season?

→ Please circle your answer

| | Growing area A | Growing area B |
|-------|----------------|----------------|
| Moist | 1 | 1 |
| Dry | 2 | 2 |

→ Please circle the replanting cycle that applies. Please write down other if needed.

| | Growing area A | Growing area B |
|-------------------------|----------------|----------------|
| First cycle: plant cane | 1 | 1 |
| Second cycle/ratoon | 2 | 2 |
| Third cycle/ratoon | 3 | 3 |
| Fourth cycle/ratoon | 4 | 4 |
| Fifth cycle/ratoon | 5 | 5 |
| Sixth cycle/ratoon | 6 | 6 |
| Seventh cycle/ratoon | 7 | 7 |
| Eighth cycle/ratoon | 8 | 8 |
| Ninth cycle/ratoon | 9 | 9 |
| Tenth cycle/ratoon | 10 | 10 |
| Other specify: | 98 | 98 |
| Don't know / no answer | 99 | 99 |

→ Please write down the date of planting for each growing area.

| | Growing area A | Growing area B |
|---------------|------------------------------|------------------------------|
| Planting date | -- . -- . -- (DD.MM.YYYY) | -- . -- . -- (DD.MM.YYYY) |

→ Please write down the total **metric tons** of cane per **hectare** for each growing area.

| | Growing area A | Growing area B |
|---|---------------------|---------------------|
| Total metric tons of canes per hectare plant cane | metric ton/ha | metric ton/ha |

383. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 2. Ploughing Breaking and turning over the earth with a plow. | | | | | | |
| 3. Digging Loosening the earth or digging a hole. | | | | | | |
| 4. Ridging Plowing alternate strips by throwing the furrow onto the unplowed strip. | | | | | | |
| 5. Ripping Breaking up the compacted soil layers. | | | | | | |
| 6. Land levelling Levelling the field to improve e.g. irrigation or water usage. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 10. Sowing or planting | | | | | | |

| Growing area B | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 2. Ploughing Breaking and turning over the earth with a plow. | | | | | | |
| 3. Digging Loosening the earth or digging a hole. | | | | | | |
| 4. Ridging Plowing alternate strips by throwing the furrow onto the unplowed strip. | | | | | | |
| 5. Ripping Breaking up the compacted soil layers. | | | | | | |
| 6. Land levelling Levelling the field to improve e.g. irrigation or water usage. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 10. Sowing or planting | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

| |
|---|
| T. Planting and fruit development - CAULIFLOWER |
|---|

We will now focus on the planting practices you plan to do including the varieties grown, labor hours and machinery used.

214. Could you please note down the cauliflower varieties that have been used for each growing area for cauliflower for the processing industry?

→ Please note down the different cauliflower varieties that have been used for each growing area.

| | Growing area A | Growing area B |
|-----------------------|----------------|----------------|
| Cauliflower varieties | ... | ... |
| | ... | ... |
| | ... | ... |
| | ... | ... |
| | ... | ... |

215. When did the first field preparation start for each growing area for cauliflower?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

| | Growing area A | Growing area B |
|------------------------------|-----------------------------|-----------------------------|
| Date first field preparation | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

Q215b. Can you please explain what you consider the first field preparation activity?

→ Spontaneous. For example: ploughing, fertilizing ...

| Growing area A | Growing area B |
|----------------|----------------|
| | |

216. When have the young plants been delivered to the farm for each growing area for cauliflower?

→ Please write down the date of delivery for each growing area.

| | Growing area A | Growing area B |
|---------------|------------------------------|------------------------------|
| Delivery date | --. --. ---- (DD.MM.YYYY) | --. --. ---- (DD.MM.YYYY) |

217. Which type of plant is planted on each growing area for cauliflower?

→ SPONTANEOUS, multiple response.

→ Please tick what applies for each growing area. Multiple response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Peat pot | 1 | 1 |
| Tray | 2 | 2 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

217. B. What is the number of plants that has been transplanted per m² for each growing area for cauliflower?
→ Please note down the number of plants that has been transplanted per m² for each growing area.

| | Growing area A | Growing area B |
|---------------|--------------------------------------|--|
| Plant density |number of plants/m ² | number of plants /m ² |

218. When have the young plants been planted for each growing area for cauliflower?
→ Please write down the date of planting for each growing area.

| | Growing area A | Growing area B |
|---------------|------------------------------|------------------------------|
| Planting date | --. --. ---- (DD.MM.YYYY) | --. --. ---- (DD.MM.YYYY) |

Q218b. Have you sown / planted [TARGET CROP] in the same period as last year?
→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If no on q218b

Q218c. Please explain why you have sown / planted in a different period than last year.
→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

Q7014. How moist was your soil at the time of planting on each growing area for [TARGET CROP] this season?
→ Please circle your answer

| | Growing area A | Growing area B |
|-------|----------------|----------------|
| Moist | 1 | 1 |
| Dry | 2 | 2 |

220. What is the plant distance between the rows and within the row for each growing area for cauliflower?
→ Please note down the plant distance within the row and between rows for each growing area.

| | Growing area A | | | Growing area B | | |
|----------------|----------------|---|---------|----------------|---|---------|
| Plant distance |cm | x |cm |cm | x |cm |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | | |
|---|---|--|---|---|---|---|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 2. Ploughing Breaking and turning over the earth with a plow. | | | | | | |
| 3. Digging Loosening the earth or digging a hole. | | | | | | |
| 4. Ridging Plowing alternate strips by throwing the furrow onto the unplowed strip. | | | | | | |
| 5. Ripping Breaking up the compacted soil layers. | | | | | | |
| 6. Land levelling Levelling the field to improve e.g. irrigation or water usage. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 10. Sowing or planting | | | | | | |

| Growing area B | | | | | | |
|---|---|--|---|---|---|---|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 2. Ploughing Breaking and turning over the earth with a plow. | | | | | | |
| 3. Digging Loosening the earth or digging a hole. | | | | | | |
| 4. Ridging Plowing alternate strips by throwing the furrow onto the unplowed strip. | | | | | | |
| 5. Ripping Breaking up the compacted soil layers. | | | | | | |
| 6. Land levelling Levelling the field to improve e.g. irrigation or water usage. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 10. Sowing or planting | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

W. Seed treatment - Belgium

ONLY APPLY THIS PART IF Q2=5 (BELGIUM)

We will now ask you some questions about the seed treatment program you use including whether or not you buy seeds and from where as well as the treatment program you use.

231. Can you please indicate where you buy your young plants for each growing area for [TARGET CROP]?

→ Spontaneous, **multiple response**.

→ Please circle your answer. Please write down other if needed.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| Cooperative | 1 | 1 |
| Other farmers | 2 | 2 |
| Retailer or manufacturer | 3 | 3 |
| Own nursery | 4 | 4 |
| Other nursery | 5 | 5 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

232. From which supplier(s) do you buy your young plants for each growing area for cauliflower?

→ Spontaneous, **multiple response**.

→ Please circle your answer. Please write down other if needed.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Vermeulen | 1 | 1 |
| Blomme | 2 | 2 |
| D'Hondt | 3 | 3 |
| WPG | 4 | 4 |
| Denolf | 5 | 5 |
| Nollet | 6 | 6 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

235. Have the seeds of the young plants been coated for each of the growing areas for cauliflower?

→ Please tick what applies.

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |

| | | |
|----|---|---|
| No | 2 | 2 |
|----|---|---|

IF Q235=1 (coated seeds)

236. Which coating has been used for each of the growing areas for cauliflower?

→ Please write down the different coatings that have been used for each growing area.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

237. A. Which of the following seedbed treatments has been performed by the nursery for each of the growing areas for cauliflower?

→ Please tick what applies.

→ Multiple response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Phyto-drip | 1 | 1 |
| Dummy pil | 2 | 2 |
| Don't know / no answer | 99 | 99 |

IF Q237A=1 (Phyto-drip)

237. B. Which compound has been used by the nursery for each of the growing areas for cauliflower?

→ Please fill in the compound.

| | Growing area A | Growing area B |
|----------|----------------|----------------|
| Compound | | |

IF Q237A=2 (Dummy pil)

237. C. Which compound has been used by the nursery for each of the growing areas for cauliflower?

→ Please fill in the compound.

| | Growing area A | Growing area B |
|----------|----------------|----------------|
| Compound | | |

238. Do you use on-farm tray treatment for each of the growing areas for cauliflower?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q238=1 (on-farm tray treatment)

239. Could you please note down, for each growing area of cauliflower, when the tray treatment took place, which products (growth regulators, fertilizers or crop protection) have been used and the dose rate?

→ Please note down the following details. Please look in your storage room in you don't know all details by heart.

- Date on which the product has been applied
- Brand product name
- Dosage and measurement unit

GROWING AREA A

| Product- nummer | a. Tijdstip van behandeling met het middel | b. Merknaam van het product | c. Dosering | | d. Welke techniek? 1= gieter 2= rugsproeier 3= spuitmachine 4= beregenings- installatie 5=Overige, leg uit |
|--------------------|--|-----------------------------|---------------------------|-------------|---|
| | | | Dosis per 1000 planten | Meeteenheid | |
| 1 | .../.../... (Dag/Maand/Jaar) | | | | |
| 2 | .../.../... (Dag/Maand/Jaar) | | | | |
| 3 | .../.../... (Dag/Maand/Jaar) | | | | |
| 4 | .../.../... (Dag/Maand/Jaar) | | | | |
| 5 | .../.../... (Dag/Maand/Jaar) | | | | |
| 6 | .../.../... (Dag/Maand/Jaar) | | | | |
| 7 | .../.../... (Dag/Maand/Jaar) | | | | |
| 8 | .../.../... (Dag/Maand/Jaar) | | | | |
| 9 | .../.../... (Dag/Maand/Jaar) | | | | |
| 10 | .../.../... (Dag/Maand/Jaar) | | | | |

GROWING AREA B

| Product- nummer | a. Tijdstip van behandeling met het middel | b. Merknaam van het product | c. Dosering | | d. Welke techniek? 1= gieter 2= rugsproeier 3= spuitmachine 4= beregenings- installatie 5=Overige, leg uit |
|--------------------|--|-----------------------------|---------------------------|-------------|---|
| | | | Dosis per 1000 planten | Meeteenheid | |
| 1 | .../.../... (Dag/Maand/Jaar) | | | | |
| 2 | .../.../... (Dag/Maand/Jaar) | | | | |
| 3 | .../.../... (Dag/Maand/Jaar) | | | | |
| 4 | .../.../... (Dag/Maand/Jaar) | | | | |
| 5 | .../.../... (Dag/Maand/Jaar) | | | | |
| 6 | .../.../... (Dag/Maand/Jaar) | | | | |
| 7 | .../.../... (Dag/Maand/Jaar) | | | | |
| 8 | .../.../... (Dag/Maand/Jaar) | | | | |
| 9 | .../.../... (Dag/Maand/Jaar) | | | | |
| 10 | .../.../... (Dag/Maand/Jaar) | | | | |

DO NOT ASK IF Q2-17 (Country = Hungary)

38200. B. When considering seed treatment, is there anything you have done differently in this season compared to previous years?

→ *Spontaneous.*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

X. Seed treatment

ONLY APPLY THIS PART IF Q4=3; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21

We will now ask you some questions about the seed treatment program you use including whether or not you buy seeds and from where as well as the treatment program you use.

DO NOT ASK IF Q2=17 (Country = Hungary)

230. Do you buy seeds or do you use saved seeds for each growing area for [TARGET CROP]?

→ Spontaneous, multiple response.

→ Please circle your answer. Please write down other if needed.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Bought seeds | 1 | 1 |
| Saved seeds | 2 | 2 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

IF Q230=1 (bought seeds)

231. Can you please indicate where you buy your seeds for each growing area for [TARGET CROP]?

→ Spontaneous, multiple response.

→ Please circle your answer. Please write down other if needed.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| Cooperative | 1 | 1 |
| Other farmers | 2 | 2 |
| Retailer or manufacturer | 3 | 3 |
| Own nursery | 4 | 4 |
| Other nursery | 5 | 5 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

231. B. Are your seeds coated with crop protection products?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q231B=1 (Yes)

233. Do you use on-farm or pre-treated seed treatment to treat the seeds for each growing area for [TARGET CROP]?

→ Single response.

| | Growing area A | Growing area B |
|----------------------------|----------------|----------------|
| On-farm seed treatment | 1 | 1 |
| Pre-treated seed treatment | 2 | 2 |
| None | 90 | 90 |
| Don't know / no answer | 99 | 99 |

IF Q231B=1 (coated seeds)

233. C. Could you please describe the crop protection products that have been used to treat the seeds for each growing area for [TARGET CROP]? In case the seeds have been pre-treated, please check the label to know the details of the seed treatment.

→ Please fill in 1 row with DON'T KNOW (-1 or 99) if seeds are treated but the farmer does not know the seed treatment.

- a. On what date did you apply the treatment?
- b. What is the type of product you applied?
 - Fungicide, insecticide, herbicide, plant growth regulator/harvest aids/adjuvants
- c. What is the brand product name?
 - e.g. Engeo. Please include all details of the product name.
- c2. What is the brand product formulation?
 - M. e.g. 247 SC
- d. What is the dosage that you applied?
 - Note down dosage in g/ha or in grams per kilogram of seeds for solid products.
 - Note down dosage in ml/ha or in milliliter per kilogram of seeds for liquid products.
 - Always refer to the concentrate of a product (not the solution in water)
- e. What is the unit of quantity of the product applied?
 - Indicate the unit of quantity: grams or milliliter per hectare OR grams/kg of seeds or ml/kg of seeds
- f. What is the amount of water in which you have solved the product (per hectare)?
- g. What is the pest/disease/weed that is targeted?

GROWING AREA A

| Product number | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c2. Brand product formulation | d. Dosage | e. Unit of quantity 1=Gram/hectare 2=Milliliter/Hectare 3= g/kg of seeds 4= ml/kg of seeds | f. Amount of H ₂ O solved in liters per hectare | g. Pest/disease/weed targeted |
|----------------|----------------------------------|---|-----------------------|-------------------------------|-----------|--|--|-------------------------------|
| 1 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 2 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 3 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 4 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 5 | --.---.---- (DD.MM.YYYY) | | | | | | | |

GROWING AREA B

| Product number | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c2. Brand product formulation | d. Dosage | e. Unit of quantity 1=Gram/hectare 2=Milliliter/Hectare 3= g/kg of seeds 4= ml/kg of seeds | f. Amount of H ₂ O solved in liters per hectare | g. Pest/disease/weed targeted |
|----------------|----------------------------------|---|-----------------------|-------------------------------|-----------|--|--|-------------------------------|
| 1 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 2 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 3 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 4 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 5 | --.---.---- (DD.MM.YYYY) | | | | | | | |

DO NOT ASK IF Q2-17 (Country = Hungary)

38200. B. When considering seed treatment, is there anything you have done differently in this season compared to previous years?

→ *Spontaneous.*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

ALL OF THE FOLLOWING QUESTIONS ONLY APPLY FOR RUSSIA SUNFLOWER (Q2=35 and Q4=18)

2500. We are now going to talk about the criteria that you consider when buying SUNFLOWER seeds. Could you please indicate the importance of each item on a 10-point scale, where:

1 = not important
10 = very important

→ Please circle the importance for each item.

| | 1 not impor- tant | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 very impor- tant | 99 Don't know / no answer |
|--|----------------------------|---|---|---|---|---|---|---|---|------------------------------|---------------------------------------|
| 1) Sunflower seeds that result in higher yields | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 2) Sunflower seeds that are resistant to broomrape | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 3) Sunflower seeds that are drought tolerant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 4) Sunflower seeds that result in a higher oil content | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 5) Sunflower seeds that reduce the time of ripening | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 6) Sunflower seeds that are resistant to diseases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |

2500 B Are there any other items that are not included in the list above regarding important criteria when buying seeds?

→ Please note down important items

2501. What are, according to you, the 3 most critical planting qualities of SUNFLOWER seeds? Please circle in the first column the most important criteria, the second most important criteria in the second column and the third most important criteria in the third column.

→ Please circle the most important item in the first column, the second most important item in the second column and the third most important item in the third column.

| | 1 st | 2 nd | 3 rd |
|--|-----------------|-----------------|-----------------|
| Germination of sunflower seeds | 1 | 1 | 1 |
| Thousand seed weight of sunflower seeds | 2 | 2 | 2 |
| Sunflower seed homogeneity | 3 | 3 | 3 |
| Appearance of the sunflower seeds in the bag | 4 | 4 | 4 |
| Physical purity of sunflower seeds | 5 | 5 | 5 |
| Quality of the seed treatment of sunflower seeds | 6 | 6 | 6 |
| 96. Other. Specify 1: | 96 | 96 | 96 |
| 97. Other. Specify 2: | 97 | 97 | 97 |
| 98. Other. Specify 3: | 98 | 98 | 98 |
| Don't know/no answer | 99 | 99 | 99 |

2502. How important is the country where the SUNFLOWER seeds are produced to you?

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very important | 4 |
| Rather important | 3 |
| Rather not important | 2 |
| Not important | 1 |
| Don't know / no answer | 99 |

2503. What is your preferred country of SUNFLOWER seeds production?

→ Please circle what applies. (SR)

| | | | | | | | |
|------------------------|----|-------------|----|-----------------|----|--------------|----|
| Algeria | 01 | Egypt | 12 | Jordan | 23 | Poland | 34 |
| Argentina | 02 | France | 13 | Kenya | 24 | Russia | 35 |
| Australia | 03 | Ghana | 14 | Korea | 25 | South Africa | 36 |
| Bangladesh | 04 | Guatemala | 15 | Malaysia | 26 | Spain | 37 |
| Belgium | 05 | Honduras | 16 | Mexico | 27 | Taiwan | 38 |
| Brazil | 06 | Hungary | 17 | Morocco | 28 | Thailand | 39 |
| China | 07 | India | 18 | The Netherlands | 29 | Ukraine | 40 |
| Colombia | 08 | Indonesia | 19 | Pakistan | 30 | USA | 41 |
| Costa Rica | 09 | Italy | 20 | Paraguay | 31 | Venezuela | 42 |
| East Africa | 10 | Ivory Coast | 21 | Peru | 32 | Vietnam | 43 |
| Ecuador | 11 | Japan | 22 | Philippines | 33 | Zambia | 44 |
| Other. Specify 1: | | | | | | | 98 |
| Don't know / no answer | | | | | | | 99 |

2504. A. From which companies do you buy SUNFLOWER seeds?

B. And how satisfied are you with SUNFLOWER seeds from...?

→ A. Please circle the companies that apply. Write down other if not in list. (MR)

B. Please indicate your satisfaction for each of the companies you buy sunflower seeds from (indicated in part A.).

| | a. | b. For each company indicated in a., please indicate your satisfaction | | | | |
|------------------------|----|--|--------------------|------------------|----------------|------------------------|
| | | Very unsatisfied | Rather unsatisfied | Rather satisfied | Very satisfied | Don't know / no answer |
| Syngenta | 1 | 1 | 2 | 3 | 4 | 99 |
| Pioneer | 2 | 1 | 2 | 3 | 4 | 99 |
| Bayer | 3 | 1 | 2 | 3 | 4 | 99 |
| KWS | 4 | 1 | 2 | 3 | 4 | 99 |
| BASF | 5 | 1 | 2 | 3 | 4 | 99 |
| Other specify 1: | 96 | 1 | 2 | 3 | 4 | 99 |
| Other specify 2: | 97 | 1 | 2 | 3 | 4 | 99 |
| Other specify 3: | 98 | 1 | 2 | 3 | 4 | 99 |
| Don't know / no answer | 99 | | | | | |

→ Please write down your answer.

| |
|--|
| |
|--|

→ Please write down your answer.

| |
|--|
| |
|--|

→ Please write down your answer.

_____. _____
(Day/Month/Year)

→ Please circle what applies. (SR)

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

→ Please write down your answer.

| |
|--|
| |
|--|

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very much valued | 4 |
| Rather valued | 3 |
| Rather not valued | 2 |
| Not valued at all | 1 |
| Don't know / no answer | 99 |

→ Please write down your answer.

| |
|--|
| |
|--|

2509. A. To which extent would you value direct delivery of the SUNFLOWER seeds from a seed manufacturer, rather than picking up or delivery from a distributor?

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very much valued | 4 |
| Rather valued | 3 |
| Rather not valued | 2 |
| Not valued at all | 1 |
| Don't know / no answer | 99 |

B. Please **explain** your answer.

→ Please write down your answer.

2510. We are focussing on sunflower, but we would also like to ask some questions on CORN. We are now going to talk about the criteria that you consider when buying CORN seeds. Could you please indicate the importance of each item on a 10-point scale, where:

1 = not important

10 = very important

→ Please circle the importance for each item.

| | 1 not impor- tant | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 very impor- tant | 99 Don't know / no answer |
|--|----------------------------|---|---|---|---|---|---|---|---|------------------------------|---------------------------------------|
| 1) Corn seeds that are drought tolerant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 2) Corn seeds that are resistant to soil diseases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 3) Corn seeds with inoculants in order to make treatments before planting unnecessary | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 4) Corn seed varieties that withstand water and temperature stress in order to assure productivity | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 5) Corn seed varieties with 100% germination & vigor to get an even stand | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 6) Corn seed varieties that are resistant to cutworms preventing damage below and above ground | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 7) Corn seed varieties that are resistant to 80% of the diseases so you spend less on products | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |

2510 B Are there any other items that are not included in the list above regarding important criteria when buying seeds?

→ Please note down important items

| |
|--|
| |
|--|

2511. What are, according to you, the 3 most critical planting qualities of CORN seeds? Please circle in the first column the most important criteria, the second most important criteria in the second column and the third most important criteria in the third column.

→ Please circle the most important item in the first column, the second most important item in the second column and the third most important item in the third column.

| | 1 st | 2 nd | 3 rd |
|---|-----------------|-----------------|-----------------|
| Germination of corn seeds | 1 | 1 | 1 |
| Thousand seed weight of corn seeds | 2 | 2 | 2 |
| Corn seed homogeneity | 3 | 3 | 3 |
| Appearance of the corn seeds in the bag | 4 | 4 | 4 |
| Physical purity of corn seeds | 5 | 5 | 5 |
| Quality of the seed treatment of corn seeds | 6 | 6 | 6 |
| 96. Other. Specify 1: | 96 | 96 | 96 |
| 97. Other. Specify 2: | 97 | 97 | 97 |
| 98. Other. Specify 3: | 98 | 98 | 98 |
| Don't know/no answer | 99 | 99 | 99 |

2512. How important is the country where the CORN seeds are produced to you?

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very important | 4 |
| Rather important | 3 |
| Rather not important | 2 |
| Not important | 1 |
| Don't know / no answer | 99 |

2513. What is your preferred country of CORN seeds production?

→ Please circle what applies. (SR)

| | | | | | | | |
|------------------------|----|-------------|----|-----------------|----|--------------|----|
| Algeria | 01 | Egypt | 12 | Jordan | 23 | Poland | 34 |
| Argentina | 02 | France | 13 | Kenya | 24 | Russia | 35 |
| Australia | 03 | Ghana | 14 | Korea | 25 | South Africa | 36 |
| Bangladesh | 04 | Guatemala | 15 | Malaysia | 26 | Spain | 37 |
| Belgium | 05 | Honduras | 16 | Mexico | 27 | Taiwan | 38 |
| Brazil | 06 | Hungary | 17 | Morocco | 28 | Thailand | 39 |
| China | 07 | India | 18 | The Netherlands | 29 | Ukraine | 40 |
| Colombia | 08 | Indonesia | 19 | Pakistan | 30 | USA | 41 |
| Costa Rica | 09 | Italy | 20 | Paraguay | 31 | Venezuela | 42 |
| East Africa | 10 | Ivory Coast | 21 | Peru | 32 | Vietnam | 43 |
| Ecuador | 11 | Japan | 22 | Philippines | 33 | Zambia | 44 |
| Other. Specify 1: | | | | | | | 98 |
| Don't know / no answer | | | | | | | 99 |

2514. A. From which companies do you buy CORN seeds?

B. And how satisfied are you with CORN seeds from...?

→ A. Please circle the companies that apply. Write down other if not in list. (MR)

B. Please indicate your satisfaction on each of the companies you buy corn seeds from.

| | a. | b. For each company indicated in a., please indicate your satisfaction | | | | |
|------------------------|----|--|--------------------|------------------|----------------|------------------------|
| | | Very unsatisfied | Rather unsatisfied | Rather satisfied | Very satisfied | Don't know / no answer |
| Syngenta | 1 | 1 | 2 | 3 | 4 | 99 |
| Pioneer | 2 | 1 | 2 | 3 | 4 | 99 |
| Bayer | 3 | 1 | 2 | 3 | 4 | 99 |
| KWS | 4 | 1 | 2 | 3 | 4 | 99 |
| BASF | 5 | 1 | 2 | 3 | 4 | 99 |
| Other specify 1: | 96 | 1 | 2 | 3 | 4 | 99 |
| Other specify 2: | 97 | 1 | 2 | 3 | 4 | 99 |
| Other specify 3: | 98 | 1 | 2 | 3 | 4 | 99 |
| Don't know / no answer | 99 | | | | | |

IF Q2514A=1 (SYNGENTA)

2524. Why do you say you are [satisfied / not satisfied] with Syngenta for buying CORN seeds?

→ Please write down your answer.

IF Q2514A=2/3/4/5/96/97/98 (NOT SYNGENTA)

2525. Why do you say you are [satisfied / not satisfied] with Competitor brands for buying CORN seeds?

→ Please write down your answer.

2515. When do you prefer your CORN seeds to be delivered to your farm?

→ Please write down your answer.

-- . -- . --
(Day/Month/Year)

2516. Do you need all the CORN seeds (all varieties/portfolio) to be available at the same time?

→ Please circle what applies. (SR)

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

IF Q2516=1 (yes)

2517. Why is this important to you?

→ Please write down your answer.

2518. A. To which extent do you value the ability to change your demand of CORN seeds (volume and/or variety) close to planting (e.g. February or March)?

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very much valued | 4 |
| Rather valued | 3 |
| Rather not valued | 2 |
| Not valued at all | 1 |
| Don't know / no answer | 99 |

B. Please explain your answer.

→ Please write down your answer.

→ Please circle what applies. (SR)

B. Please explain your answer.

| |
|--|
| |
|--|

END OF PRE-HARVEST INTERVIEW

INTERVIEWER - PLEASE READ:

This ends the pre-harvest interview. Before we close, I would like to go through the topics of the next interview. I would like to ask you to fill in the rest of the interview prior to our next appointment.

Also, can we schedule the next visit already? When will you harvest [TARGET CROP]? When can we meet again?

INSTRUCTIONS FOR INTERVIEWER - VISIT 2

Please use this instruction sheet during the set-up of the after harvest interview ('VISIT 2'). Make sure to check-off all applicable boxes as you go. End by filling out your name and signature at the bottom of the page.

- Note down unique ID number:

Country code (see country codes in Q2)

Farm type (1=RF and 2=BF)

Unique respondent number

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
|--|--|--|--|--|--|

Diagram showing arrows indicating the mapping of fields to labels:

- Country code (see country codes in Q2) points to the first two boxes.
- Farm type (1=RF and 2=BF) points to the third box.
- Unique respondent number points to the last three boxes.

FOR REPEATED RESPONDENTS, PLEASE USE EXISTING UNIQUE ID NUMBER.

- Note down date of VISIT 2:

| | | | | | | | |
|--|--|--|--|---|---|---|---|
| | | | | 2 | 0 | 1 | 7 |
|--|--|--|--|---|---|---|---|

Please check off boxes to confirm all was done:

- Check which target crop you should discuss
- Check on which growing areas you should focus
- Remind grower about the target crop and growing areas
- Ask grower if he/she has already filled out the questionnaire
- Ask grower if he/she has already filled out the questions on product usage (Q229c and Q241).
If yes, go through document together to see if all is clear.
- Take about two pictures of the farmer and of his growing areas

| |
|--|
| |
| |
| |
| |
| |
| |

➤ NAME INTERVIEWER:

➤ SIGNATURE INTERVIEWER:

PART V: FARMING PRACTICES - AFTER HARVEST

242. Please fill out the unique code, given by the interviewer (has to be the same as in Q1):

UNIQUE CODE: **XX X XXX**

Country code (See country codes Q2)

Farm type (1=RF and 2=BF)

Respondent number (Unique respondent number)

ID 2 (IF APPLICABLE; 1=first season; 2=second season)

242. A. Please fill out the date of the interview:

Date (Date in DD.MM.YYYY)

Interviewer note: Please note down the growing area name again (see Q56)

| | Growing area A | Growing area B |
|-------------------|----------------|----------------|
| Field description | | |

FIELD CROPS ONLY

Interviewer note: Please note down the date of first field preparation (see Q72).

| | Growing area A | Growing area B |
|-------------------------|-----------------------------|-----------------------------|
| First field preparation | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

Interviewer note: Please note down again if the grower has received a recommended growing protocol or crop program from an agricultural advisor for each growing area of [TARGET CROP]. (see Q397)

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

V. Fertilizer usage

We will now ask some questions about your fertilizer usage, including the amounts and number of applications.

IF Q2=37 (SPAIN) AND IF Q4= 3 (BARLEY)

224. A. Did you perform a soil test for each growing area of [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q2=37 (SPAIN) AND IF Q4= 3 (BARLEY)

224. A2 Do you think that a soil test is important to have a good fertilization program?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

224. Do you apply organic fertilizers on each of the growing areas for [TARGET CROP]?

→ Please tick what applies. (SR)

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q224=1 (applies organic fertilizers)

225. B. Which types of organic fertilizer have you used?

→ READ, multiple response.

→ Please tick what applies. Please write down other if not in list.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Animal manure | 1 | 1 |
| Compost (a mix of organic matter such as leaves, that has decayed or decomposed) | 2 | 2 |
| Green manure (remains of a crop that are plowed under the soil to improve fertility) | 3 | 3 |
| 96. Other specify 1: | | |
| 97. Other specify 2: | | |
| 98. Other specify 3: | | |
| Don't know / no answer | 99 | 99 |

226. Do you apply chemical fertilizers on each of the growing areas for [TARGET CROP]?

→ Please tick what applies. (SR)

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q2=5 (BELGIUM) AND IF Q226=1

227. Do you carry out row-by-row and/or broadcast (entire field) fertilizer spreading on your cauliflower plots?

→ Please tick what applies. (SR)

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Only row by row fertilizer | 1 | 1 |
| Only broadcast fertilizer | 2 | 2 |
| A combination of row by row and broadcast fertilizer | 3 | 3 |
| Don't know / no answer | 99 | 99 |

→ Please note down the total amount of fertilizer applications that applies for each growing area.

→ Interviewer note: Please note down the date of first field preparation (see 072).

→ Interviewer note: Please note down the date of pruning (see Qxx).

- Hand operated sprayers (e.g. knapsack), motorized boom sprayer, airblast sprayer, granular applicator, Aerial applicator, other. If other, please specify.

GROWING AREA A

[illegible]

GROWING AREA B

| Product number | a. Timing of product application | b. Type of product 1=Chemical fertilizer 2=Organic fertilizer | c. Brand product name or product description | d. Dosage (in kg/hectare or liter per hectare) | e. Unit of quantity 1=Kilogram/hectare 2=Liter/hectare | f. Amount of H ₂ O solved in liters per hectare | g. Percentage N (in %) | h. Percentage P (P ₂ O ₅) (in %) | i. Percentage K (K ₂ O) (in %) | j. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify |
|----------------|-------------------------------------|---|--|--|--|--|------------------------|---|---|--|
| 1 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 2 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 3 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 4 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 5 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 6 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 7 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 8 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 9 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 10 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | | |
|---|--|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 8. Applying fertilizers (both chemical and organic) | | | | | | |

| Growing area B | | | | | | |
|---|--|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 8. Applying fertilizers (both chemical and organic) | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. C. When considering fertilizer applications, is there anything you have done differently in this season compared to previous years?

→ *Spontaneous.*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

X. Crop protection products

240 E. We now would like to better understand the pest pressure on the selected growing areas. Can you please tell us whether you consider the pressure of insects, diseases and weeds having been high, medium or low, for each growing area during the season of [TARGET CROP]?

→ *READ, single response per category.*

→ *Please indicate the pressure below. Also ask if there are other important elements and note these down in the 'other specify' category.*

| | Growing area A | | Growing area B | |
|--------------------------|----------------|----|----------------|----|
| Insects | High | 3 | High | 3 |
| | Medium | 2 | Medium | 2 |
| | Low | 1 | Low | 1 |
| | No pressure | 90 | No pressure | 90 |
| Diseases | High | 3 | High | 3 |
| | Medium | 2 | Medium | 2 |
| | Low | 1 | Low | 1 |
| | No pressure | 90 | No pressure | 90 |
| Weeds | High | 3 | High | 3 |
| | Medium | 2 | Medium | 2 |
| | Low | 1 | Low | 1 |
| | No pressure | 90 | No pressure | 90 |
| 98. Other specify 1: ... | High | 3 | High | 3 |
| | Medium | 2 | Medium | 2 |
| | Low | 1 | Low | 1 |
| Don't know/no answer | 99 | | 99 | |

240 D. Could you please note down the total number of treatments you perform with crop protection products (fungicide, insecticide, herbicide, miticidas / acaricides, rodenticides, nematicides / molluscicides, plant growth regulator/harvest aids/adjuvants) on each of the growing areas for [TARGET CROP]?

- Please note down the total amount of crop protection product applications that applies for each growing area.
- Interviewer note: The answer should correspond with the number of applications filled in for Q241.
- Exclude seed treatment products and fertilizer applications!

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Number of crop protection product applications | | |

241. Could you please note down, on the next page, all crop protection products that have been used for growing area A and growing area B for [TARGET CROP]?

- IF Q4=3; 4; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21 (= all field crops) - Please note down the date of first field preparation (see Q72).
- IF Q4=1; 2; 5; 6; 9; 11; 16 (= all tree crops) - Please note down the date of pruning (see Qx1).

| | Growing area A | Growing area B |
|-------------------------|-----------------------------|-----------------------------|
| First field preparation | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

| | Growing area A | Growing area B |
|-----------------|-----------------------------|-----------------------------|
| Date of pruning | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

- Please note down the following details per product. Please look in your crop protection products storage room if you don't know all details by heart.
- Please note this information down per treatment. Consider one table on one page for one treatment.

- a. On what date did you apply the treatment?
- b. What is the type of product you applied?
 - Fungicide, insecticide, herbicide, miticidas / acaricides, rodenticides, nematicidas / molluscicides, plant growth regulator/harvest aids/adjuvants
- c. What is the brand product name?
 - e.g. Engeo. Please include all details of the product name.
- c1. What is the brand product formulation?
 - e.g. 247 SC
- d. What is the dosage that you applied?
 - Note down dosage in g/ha for solid products.
 - Not down dosage in ml/ha for liquid products.
 - Always refer to the concentrate of a product (not the solution in water)
- e. What is the unit of quantity of the product applied?
 - Indicate the unit of quantity: grams or milliliter per hectare.
- f. What is the amount of water in which you have solved the product (per hectare)?
- g. What is the pest/disease/weed that is targeted?
- h. What is the level of pest/disease/weed pressure? Is this low, medium or high?
- i. What is the percentage of the area that is treated against pests/diseases/weeds?
- j. What is the percentage of the area that is free of pests/diseases/weeds at harvest?
- k. Which type of application equipment did you use?
 - Hand operated sprayers (e.g. knapsack), motorized boom sprayer, airblast sprayer, granular applicator, Aerial applicator, other.
 - If other, please specify.
- n. What is the timing of the treatment - before crop-emergence or after crop-emergence?

| | | | | | | | |
|--------------|--|--|--|--|--|--|--|
| UNIQUE CODE: | | | | | | | |
|--------------|--|--|--|--|--|--|--|

GROWING AREA A - Treatment 1

[illegible]

GROWING AREA A - Treatment 2

[illegible]

UNIQUE CODE:

GROWING AREA A - Treatment 3

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 4

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA A - Treatment 5

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 6

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA A - Treatment 7

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|---|--|--|--------------------------------|--|---|--|---|--|
| 1 | - - - - - - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 8

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|---|--|--|--------------------------------|--|---|--|---|--|
| 1 | - - - - - - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA A - Treatment 9

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | - - - - - - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 10

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | - - - - - - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 1

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 0 | 02.05.2015 | 2 | Engeo | 247 SC | 500 | 2 | 200 | Tuta absoluta | 2 | 90 | 100 | 2 | |
| 1 | ---'---'--- (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 2

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 3

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 4

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 5

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 6

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 7

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---.---.--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 8

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|--|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---.---.--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 9

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|---|--|--|-----------------------------------|--|---|--|---|---|
| 1 | --.-.-.-. - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 10

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|---|--|--|-----------------------------------|--|---|--|---|---|
| 1 | --.-.-.-. - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

242. B. Could you please describe to which extent your crop protection program differs compared to the previous season for each growing area of [TARGET CROP]? Please think about differences in products, formulations of products, dosages, techniques,...

→ Please describe.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. How many times did you perform the activity? One performance equals the treatment of the entire area.
- B. How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.
- C. Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.
 - Machines rely on non-human energy sources: for example: fuel or petrol
- D. Please tell us which type of machinery you used to complete the activity
 - Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.
- E. Could you tell us which type of fuel the machine consumes?
 - For example: diesel or petrol

| Growing area A | | | | | | |
|-------------------------|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 12. Applying pesticides | | | | | | |

| Growing area B | | | | | | |
|-------------------------|---|--|--|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] 1= Yes 2= No | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 12. Applying pesticides | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

| |
|--|
| M. Harvest timing & quality per crop - field crops |
|--|

We will now ask some questions about the crop at harvest, including the harvest timing and yield.

75. What is the final stand - i.e. the number of plants - per m² for each growing area for [TARGET CROP]?

→ Please note down the final stand (number of plants) per m² for each growing area.

| | Growing area A | Growing area B |
|---------------------------|----------------------------|----------------------------|
| Final stand/Plant density |plants/m ² |plants/m ² |

76. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for [TARGET CROP]? This is when the stem bends over near the ground level, which implies that this part of the crop is lost.

→ Please note down the percentage for each growing area.

| | Growing area A | Growing area B |
|--------------------|----------------|----------------|
| % plot area lodged |% |% |

243. When was the harvest period for each growing area for [TARGET CROP]?

→ Please write down the harvest period for each growing area.

| | Growing area A | | Growing area B | |
|----------------|----------------|--|----------------|--|
| Harvest period | A | From ____ . ____ . ____ (DD.MM.YYYY) | A | From ____ . ____ . ____ (DD.MM.YYYY) |
| | B | Until ____ . ____ . ____ (DD.MM.YYYY) | B | Until ____ . ____ . ____ (DD.MM.YYYY) |

DO NOT ASK IF Q2=17 (Country = Hungary)

Q243b. Have you harvested [TARGET CROP] in the same period as last year?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

DO NOT ASK IF Q2=17 (Country = Hungary)

If Q243b = no

Q243c. Please explain why you have harvested in a different period than last year.

Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q4=7 (CORN)

107. Could you please indicate the average number of cobs per square meter during flowering for each growing area for corn?

→ Please write down the average number of cobs per m^2 for each growing area.

| | Growing area A | Growing area B |
|----------------------------------|------------------|------------------|
| Average number of cobs per m^2 |cobs/ m^2 |cobs/ m^2 |

IF Q4=12 OR 19 (PEPPER/TOMATO)

327. Please indicate the number of harvests/pickings per year for each growing area for tomatoes/peppers?

→ Please write down the number of harvests/pickings for each growing area.

| | Growing area A | Growing area B |
|--------------------------------------|--------------------|--------------------|
| Number of harvests/pickings per year | Harvests/year | Harvests/year |

IF Q4=3, 12, 14, 15, 19, 20, OR 21 (BARLEY/PEPPER/RICE/SOYBEAN/TOMATO/WATERMELON/WHEAT)

244. What is the marketable yield that has been achieved for each growing area for [TARGET CROP] in metric tons per hectare?

→ Please write down the measured yield as accurately as possible.

| | Growing area A | Growing area B |
|-------|--------------------|--------------------|
| Yield |metric ton/ha |metric ton/ha |

IF Q4=12 OR 19 (PEPPER/TOMATO)

4091. What is the average size (diameter) of one tomato/pepper harvested on average?

| | Growing area A | Growing area B |
|-------------------------|----------------|----------------|
| Average size (diameter) | cm | cm |

IF TOMATO/PEPPER

4092. What is the number of marketable tomatoes/peppers fruits per square meter?

| | Growing area A | Growing area B |
|---------------|-------------------|-------------------|
| Fruits/ m^2 | ... Fruits/ m^2 | ... Fruits/ m^2 |

IF Q2=20 (ITALY) AND IF Q4= 19 (TOMATO)

4092. B What is the percentage of waste, i.e. the percentage of tomato that is not marketable, for each growing area?

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| Percentage of waste | ... % | ... % |

IF Q2=20 (ITALY) AND IF Q4= 19 (TOMATO)

4092. C Could you please specify the production cycle (early, medium, long) for each growing area of tomato?

→ Single response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Early | 1 | 1 |
| Medium | 2 | 2 |
| Long | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q4=7 (CORN)

273. B. Please indicate the % of the area that is harvested for grain corn and silage corn.

→ Please note down the percentage.

| | Growing area A | Growing area B |
|-----------------------|----------------|----------------|
| % area for grain corn |% |% |
| % area for silage con |% |% |

IF Q4=7 (CORN)

274. What is the yield (marketable yield) that has been achieved for each growing area for corn in **metric tons per hectare**?

→ Please write down the measured yield as accurately as possible.

| | Growing area A | Growing area B |
|---|----------------------------|----------------------------|
| Grain yield - harvested for grains only | metric ton/ha | metric ton/ha |
| Silage yield - Entire plant is harvested and fermented for silage | metric ton/ha | metric ton/ha |

IF Q2 = 7 (CHINA) and Q4=7 (CORN)

274 B. Directly after harvesting, what was the average moisture content for each growing area for corn?

→ Please write down the moisture content for each growing area.

| | Growing area A | Growing area B |
|------------------|----------------|----------------|
| Moisture content |% |% |

IF Q4=13 (POTATO)

299. What is the tuber yield (marketable yield) that has been achieved for each growing area for potato in **metric tons per hectare**?

→ Please write down the measured yield as accurately as possible.

| | Growing area A | Growing area B |
|-------------|----------------------------|----------------------------|
| Tuber yield | metric ton/ha | metric ton/ha |

IF Q4=4 (CAULIFLOWER)

371. How many times do you pick each variety on each cauliflower field?

→ Please write down the number of harvests for each variety for each field.

| | Growing area A | | Growing area B | |
|-------------------------------|----------------|--------------------|----------------|--------------------|
| | Variety | Number of harvests | Variety | Number of harvests |
| Number of harvests variety 1: | | | | |
| Number of harvests variety 2: | | | | |
| Number of harvests variety 3: | | | | |
| Number of harvests variety 4: | | | | |
| Number of harvests variety 5: | | | | |

IF Q4=4 (CAULIFLOWER)

372. What is the yield (marketable yield - bolted cauliflower) that has been achieved for each growing area for cauliflower in **metric tons per hectare**?

→ Please write down the measured yield as accurate as possible.

| | Growing area A | Growing area B |
|-------|----------------------------|----------------------------|
| Yield | metric ton/ha | metric ton/ha |

IF Q4=4 (CAULIFLOWER)

373. What is the total yield in ton per hectare for the total production of cauliflower for the processing industry in **metric tons per hectare**?

→ Please write down the measured yield as accurate as possible.

| | |
|-------------|----------------------------|
| Total yield | metric ton/ha |
|-------------|----------------------------|

IF Q4=8 (COTTON)

282. What is the fibre / lint yield (marketable yield) that has been achieved for each growing area for cotton in **metric tons per hectare**?

→ Please write down the measured yield as accurate as possible.

| | Growing area A | Growing area B |
|--------------------|----------------------------|----------------------------|
| Fibre / lint yield | metric ton/ha | metric ton/ha |

IF Q4=8, 10 OR 18 (COTTON/OSR/SUNFLOWER)

314. What is the seed yield (marketable yield) that has been achieved for each growing area for [TARGET CROP] in **metric tons per hectare**?

→ Please write down the seed yield for each growing area.

| | Growing area A | Growing area B |
|------------|----------------------------|----------------------------|
| Seed yield | metric ton/ha | metric ton/ha |

4094. Who measured the yield on each of the growing areas?

- SPONTANEOUS, multiple response.
→ Please tick what applies.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Myself | 1 | 1 |
| Dealer/store | 2 | 2 |
| Manufacturer/representative | 3 | 3 |
| Independent advisor | 4 | 4 |
| Cooperative | 5 | 5 |
| 96. Other specify: | | |
| 97. Other specify: | | |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

NOT IF Q2=22 and Q4=13 (Japan, potato)

4095. A. Compared to previous year, would you say your yield has ... [READ SCALE]?

- Please tick what applies.
→ Single response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Increased | 3 | 3 |
| Remained stable | 2 | 2 |
| Decreased | 1 | 1 |
| Don't know / no answer | 99 | 99 |

NOT IF Q2=22 and Q4=13 (Japan, potato)

4095. B. According to you, why has your yield [INSERT ANSWER ON 4095A]?

- Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

ONLY IF Q2=22 and Q4=13 (Japan, potato)

4095. C. According to you, why has your yield changed as opposed to previous year?

- Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4096. A. How **satisfied** are you with your yield this season?

- READ, single response.
→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 2 | 2 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4096. B. Can you please explain why you are [INSERT ANSWER on 4096A] with your yield?

- Spontaneous

| Growing area A | Growing area B |
|--|--|
| | |

246. What **percentage** of the harvest of your [TARGET CROP] of each growing area is used for each purpose?

- Please note down what applies for each growing area.
→ The sum of the percentages should add up to 100%.

| | Growing area A | Growing area B |
|---------------------------------------|----------------|----------------|
| 1. Own consumption - Self-subsistence |% | % |
| 2. Feeding own livestock | % | % |
| 3. Harvest sold | % | % |
| | 100% | 100% |

4097. A. How **satisfied** are you with the price you received on the market?

- READ, single response.
→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4097. B. Can you please explain why you are [INSERT ANSWER on 4097A] with the price you received?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

251. What is the percentage of harvested crop damaged at harvest (total lost - not marketable) for each growing area for your [TARGET CROP]?

→ Please write down the percentage of harvested crop damaged at harvest for each growing area.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Percentage of harvested crop damaged at harvest |% |% |

IF Q4=13 (POTATO)

302. What is the percentage of decay for each growing area for potato?

→ Please write down the percentage of decay for each growing area.

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| Percentage of decay |% |% |

IF Q4=13 (POTATO)

303. What is the percentage of shrink loss for each growing area for potato?

→ Please write down the percentage of shrink loss for each growing area.

| | Growing area A | Growing area B |
|---------------------------|----------------|----------------|
| Percentage of shrink loss |% |% |

IF Q4=10 (OSR)

312. What is the percentage of pod shattering at harvest for each growing area for oilseed rape?

→ Please write down the percentage of pod shattering at harvest for each growing area.

| | Growing area A | Growing area B |
|------------------------------|----------------|----------------|
| Percentage of pod shattering |% |% |

IF Q4=8 (COTTON)

284. What is the fibre / lint quality (like fibre strength, fineness, ...) for each growing area for cotton?

→ Please select the fibre quality that applies best.

→ Single response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Good quality | 1 | 1 |
| Medium quality | 2 | 2 |
| Low quality | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q4=3 (WHEAT) or 21 (BARLEY)

266 B. Please indicate the protein content level of your yield for each growing area for barley.

- Please tick what applies.
→ Single response.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Low protein content level (less than 10%) | 1 | 1 |
| Normal protein content level (about 10%) | 2 | 2 |
| High protein content level (above 10%) | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q2=20 (ITALY) AND IF Q4= 19 (TOMATO)

266. C. Please indicate the BRIX content level in percentage (i.e. the final sugar content and the potential alcohol level) of your yield for each growing area for [TARGET CROP].

- Please write down the percentage for each growing area.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| BRIX-level in percentage |% |% |

ONLY IF Q2=22 and Q4=13 (Japan, potato)

303. B. Can you please share any feedback about the growth situation of potato during this season?

- Spontaneous.
→ For example, did you face problems such as sore shin, ...

| Growing area A | Growing area B |
|----------------|----------------|
| | |

ONLY IF Q2=35 and Q4=18 (Russia, sunflower)

2520. A. Are you also cultivating other sunflower varieties?

B. And what is the yield in ton per hectare for these varieties?

- Please write down the seed variety in column A.
→ Please indicate for each seed variety mentioned in column A, the yield in ton per hectare.

| a. Other sunflower varieties | b. Yield in ton per hectare |
|------------------------------|-----------------------------|
| |ton/ha |
| |ton/ha |
| |ton/ha |
| |ton/ha |
| |ton/ha |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*

| Growing area A | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 16. Harvesting | | | | | | |
| 17. Post-harvest handling of the harvested crop (incl. dipping) | | | | | | |

- *For example: diesel or petrol*

| Growing area B | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 16. Harvesting | | | | | | |
| 17. Post-harvest handling of the harvested crop (incl. dipping) | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

| Growing area A | Growing area B |
|----------------|----------------|
| | |

→ Spontaneous.

| | |
|---|--|
| N. Harvest timing & quality per crop - tree crops | |
|---|--|

We will now ask some questions about the crop at harvest, including the harvest timing and yield.

IF Q4=5, 6 OR 9 (COCOA, COFFEE, GRAPES)

201. When did the first trees reach the flowering stage for each growing area for [TARGET CROP]?

→ Please write down the flowering date for each growing area.

| | Growing area A | Growing area B |
|----------------|--------------------------------|--------------------------------|
| Flowering date | -- . -- . ---- (DD.MM.YYYY) | -- . -- . ---- (DD.MM.YYYY) |

IF Q4=5 (COCOA)

212. Rain during flowering damages the flowers. What percentage of the trees was damaged for each growing area for cocoa?

→ Please note down the percentage of trees damaged for each growing area.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Percentage of trees damaged |% | % |

IF Q4=5 (COCOA)

213. What is the average number of green pods per 25 trees (randomly selected) before the green pods become orange for each growing area for cocoa?

→ Please randomly select 25 trees that have pods per growing area. Please note down the average number of green pods of these 25 trees for each growing area.

| | Growing area A | Growing area B |
|---|--------------------------|---------------------------|
| Average number of green pods per 25 trees |green pods/25 trees | green pods/25 trees |

IF Q4=6 (COFFEE)

203. When did the fruit development start for each growing area for coffee?

→ Please write down the fruit development date for each growing area.

| | Growing area A | Growing area B |
|------------------------|--------------------------|--------------------------|
| Fruit development date | --·--·-- (DD.MM.YYYY) | --·--·-- (DD.MM.YYYY) |

NOT APPLICABLE IF Q4=9 (GRAPE)

204. Could you please indicate the average number of fruits per tree for each growing area for [TARGET CROP]?

→ Please write down the average number of fruits per tree for each growing area.

| | Growing area A | Growing area B |
|----------------------------------|-----------------|-----------------|
| Average number of fruit per tree |fruit/tree |fruit/tree |

IF Q2=20 (ITALY) and IF Q4=9 (GRAPES) and if CLUSTER 1 OR 2

1020. What is the number of bottles produced per hectare for each growing area for grape?

→ Please write down the bottles produced per hectare for each growing area.

| | Growing area A | Growing area B |
|----------------------------|-----------------|-----------------|
| Number of bottles produced |bottles/ha |bottles/ha |

IF Q2=20 (ITALY) and IF Q4=9 (GRAPES) and if CLUSTER 1 OR 2

1021. What is the number of bottles blocked (no market access) per hectare for each growing area for grape?

→ Please write down the bottles blocked per hectare for each growing area.

| | Growing area A | Growing area B |
|---------------------------|-----------------|-----------------|
| Number of bottles blocked |bottles/ha |bottles/ha |

IF Q2=20 (ITALY) AND Q1010=1 (WINE GRAPE)

266. C. Please indicate the BRIX content level in percentage (i.e. the final sugar content and the potential alcohol level) of your yield for each growing area for [TARGET CROP].

→ Please write down the percentage for each growing area.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| BRIX-level in percentage |% |% |

IF Q4=16 (STONE FRUIT)

4101. What is the average size (diameter) of one stone fruit harvested on average?

→ Please write down the average size of one stone fruit for each growing area.

| | Growing area A | Growing area B |
|-------------------------|----------------|----------------|
| Average size (diameter) | cm | cm |

360. When was the harvest period for each growing area for [TARGET CROP]?

→ Please write down the harvest period for each growing area.

| | Growing area A | | Growing area B | |
|----------------|----------------|--|----------------|--|
| Harvest period | A | From ____ . ____ . ____ (DD.MM.YYYY) | A | From ____ . ____ . ____ (DD.MM.YYYY) |
| | B | Until ____ . ____ . ____ (DD.MM.YYYY) | B | Until ____ . ____ . ____ (DD.MM.YYYY) |

Q360b. Have you harvested [TARGET CROP] in the same period as last year?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If q360b = No

Q360c. Please explain why you have harvested in a different period than last year.

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

361. In which months did the harvest peak for each growing area for [TARGET CROP] during this season?

→ SPONTANEOUS, multiple response.

→ Please circle the harvest peak months for each growing area.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| January | 1 | 1 |
| February | 2 | 2 |
| March | 3 | 3 |
| April | 4 | 4 |
| May | 5 | 5 |
| June | 6 | 6 |
| July | 7 | 7 |
| August | 8 | 8 |
| September | 9 | 9 |
| October | 10 | 10 |
| November | 11 | 11 |
| December | 12 | 12 |
| Don't know / no answer | 99 | 99 |

NOT APPLICABLE IF Q4=5 OR 6 (COCOA/COFFEE)

351. A. What is the yield (immediately after harvest) that has been achieved for each growing area for [TARGET CROP] in metric tons per hectare?

→ Please write down the yield for each growing area.

| | Growing area A | Growing area B |
|-------------------------------------|--------------------|--------------------|
| [TARGET CROP] yield (after harvest) |metric ton/ha |metric ton/ha |

IF Q2=20 (ITALY) and IF Q4=9 (GRAPES)

351. B. For the grape variety you are cultivating, what is the maximum yield you may obtain? This refers to the official limits for wine grapes as defined in your country.

→ Please write down the yield for each growing area.

→ Please use -2 if no official yield limits apply.

| | Growing area A | Growing area B |
|------------------------------|--------------------|--------------------|
| Maximum yield to be obtained |metric ton/ha |metric ton/ha |

IF Q4=6 (COFFEE)

362. What is the coffee yield (marketable yield - dried beans) that has been achieved for each growing area for coffee in metric tons per hectare?

→ Please write down the measured yield as accurate as possible.

| | Growing area A | Growing area B |
|--------------|--------------------|--------------------|
| Coffee yield |metric ton/ha |metric ton/ha |

IF Q2=43 (VIETNAM) and Q4=6 (COFFEE) and Q66=12

362. B. You mentioned you are intercropping coffee and pepper this season. What is the pepper yield (marketable yield) that has been achieved for each growing area for coffee in metric tons per hectare?

| | Growing area A | Growing area B |
|--------------|--------------------|--------------------|
| Pepper yield |metric ton/ha |metric ton/ha |

IF Q4=5 (COCOA)

366. What is the yield (marketable yield) that has been achieved for each growing area for cocoa in metric tons per hectare?

→ Please write down the yield for each growing area.

| | Growing area A | Growing area B |
|-------|--------------------|--------------------|
| Yield |metric ton/ha |metric ton/ha |

IF Q4=5 (COCOA)

369. What is the weight of the dried cocoa yield at the end of the post-harvest process (with humidity close to 8%) for each growing area for cocoa in metric tons per hectare?

→ Please write down the weight of dried cocoa yield for each growing area.

| | Growing area A | Growing area B |
|--------------------|--------------------|--------------------|
| Weight dried yield |metric ton/ha |metric ton/ha |

4094. Who measured the yield on each of the growing areas?

→ SPONTANEOUS, multiple response.

→ Please tick what applies.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Myself | 1 | 1 |
| Dealer/store | 2 | 2 |
| Manufacturer/representative | 3 | 3 |
| Independent advisor | 4 | 4 |
| Cooperative | 5 | 5 |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

4095. A. Compared to previous year, would you say your yield has ... [READ SCALE]?

→ Please tick what applies. (SR)

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Increased | 3 | 3 |
| Remained stable | 2 | 2 |
| Decreased | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4095. B. According to you, why has your yield [INSERT ANSWER ON 4095A]?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4096. A. How satisfied are you with your yield this season?

→ READ, single response.

→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4096. B. Can you please explain why you are [INSERT ANSWER on 4096A]?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q4=1 OR 11 (APPLE/PEAR)

351 C. What percentage of the yield harvested is sold and/or stored?

→ Please write down the percentage for each growing area. The sum should be 100%.

| | Growing area A | Growing area B |
|-------------------------|----------------|----------------|
| Immediately sold |% |% |
| Stored |% |% |
| 98. Other. Specify: ... |% |% |
| | 100% | 100% |

INTERVIEWER - PLEASE READ: In the following questions, we will ask some questions that concern the harvest of the previous season (2015).

IF Q4=1 OR 11 (APPLE/PEAR)

351. B. For the harvest of the previous season (2015), what was the yield (after storage) that has been achieved for each growing area?

→ Please write down the apple yield for each growing area.

| | Growing area A | Growing area B |
|-----------------------|---------------------|---------------------|
| Yield (after storage) | metric ton/ha | metric ton/ha |

IF Q4=1 (APPLE)

352. A. For the harvest of the previous season (2015), could you please indicate the after storage harvest in ton/ha for each of the apple sizes that apply for the growing area for apple?

→ Please write down the harvest in metric ton/ha for each apple size that applies.

| Size in millimeter | Growing area A |
|--------------------|---------------------|
| 60-65 | metric ton/ha |
| 65-70 | metric ton/ha |
| 70-75 | metric ton/ha |
| 75-80 | metric ton/ha |
| 80-85 | metric ton/ha |
| rot | metric ton/ha |
| total | metric ton/ha |

IF Q4=11 (PEAR)

352. B. For the harvest of the previous season (2015), could you please indicate the after storage harvest in ton/ha for each of the pear sizes that apply for the growing area for pear?

→ Please write down the harvest in metric ton/ha for each pear size that applies.

| Size in millimeter | Growing area B |
|--------------------|---------------------|
| 45-50 | metric ton/ha |
| 50-55 | metric ton/ha |
| 55-60 | metric ton/ha |
| 60-65 | metric ton/ha |
| 65-70 | metric ton/ha |
| 70-75 | metric ton/ha |
| 75-80 | metric ton/ha |
| 80-85 | metric ton/ha |
| rot | metric ton/ha |
| total | metric ton/ha |

IF Q4=1 OR 11 (APPLE/PEAR)

353 B. For the harvest of the previous season (2015), what was the price per ton per buyer that has been obtained for each growing area for [TARGET CROP]?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid.

→ The sum of the percentages cannot exceed 100%.

| | Growing area A | | Growing area B | |
|-----------------------------------|----------------|----------------|----------------|----------------|
| Buyer 1: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Buyer 2: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Buyer 3: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Buyer 4: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Buyer 5: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Harvest not yet sold/not yet paid | -2 | -2 | -2 | -2 |
| Don't know/no answer | -1 | -1 | -1 | -1 |

IF Q4=1 OR 11 (APPLE/PEAR)

354. For the harvest of the previous season (2015), which percentage of the yield of each growing area for apple could be sold and which percentage was used in the processing industry ?

→ Please give the percentage of the yield that can be sold and the percentage that is used in the processing industry. The sum should be 100%.

| | Growing area A | Growing area B |
|---------------------------------------|----------------|----------------|
| 1. Percentage salable product | ...% | ...% |
| 2. Percentage for processing industry | ...% | ...% |
| | 100% | 100% |

INTERVIEWER NOTE: Please proceed with the questions about the current season.

IF Q4=1 OR 11 (APPLE/PEAR)

3540. What is the percentage of fruits damaged at harvest (total lost - not marketable) for each growing area?

→ Please write down the percentage of fruits damaged at harvest for each growing area.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Percentage of fruits damaged at harvest |% |% |

4097. A. How satisfied are you with the price you received on the market?

→ READ, single response.

→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4097. B. Can you please explain why you are [INSERT ANSWER on 4097A] with the price you received?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q4≠1; 11 (NOT APPLE OR PEAR)

3630. What is the percentage fruit losses/damaged for each growing area for [TARGET CROP]?

→ Please write down the percentage for each growing area.

| | Growing area A | Growing area B |
|---------------------------------|----------------|----------------|
| Percentage fruit losses/damaged |% |% |

IF Q2=20 (ITALY) AND IF Q3630 > 0%

251. B Can you please indicate for each growing area which factors contributed to this percentage of harvested crop damaged?

→ *Spontaneous*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | | |
|----------------|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 14. Pruning | | | | | | |
| 16. Harvesting | | | | | | |

| Growing area B | | | | | | |
|----------------|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 14. Pruning | | | | | | |
| 16. Harvesting | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

→ *Spontaneous.*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

| | |
|--|--|
| K. Harvest timing & quality per crop - SUGARCANE | |
|--|--|

144. What is the final stand - i.e. the average total number of plants per square meter for each growing area for sugarcane?

→ Please note down the total number of plants per m^2 for each growing area.

| | Growing area A | Growing area B |
|---------------------------|----------------------------|----------------------------|
| Final stand/Plant density |plants/m ² |plants/m ² |

148. C. Could you please indicate the number of sugarcane failures in %-age at 60 days after planting for each growing area for sugarcane?

→ Please note down the percentage.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Number of sugarcane failures at 60 days after planting |% |% |

148. D. Could you please indicate the number of sugarcane failures in %-age at 200 days after planting for each growing area for sugarcane?

→ Please note down the percentage.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Number of sugarcane failures at 200 days after planting |% |% |

148. E. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for sugarcane? This is when the stem bends over near the ground level.

→ Please note down the percentage.

| | Growing area A | Growing area B |
|--------------------|----------------|----------------|
| % plot area lodged |% |% |

319. When was the harvest period for each growing area for sugarcane?

→ Please write down the harvest period for each growing area.

| | | Growing area A | | Growing area B | |
|----------------|---|------------------------------------|---|------------------------------------|--|
| Harvest period | A | From __. __. ____ (DD.MM.YYYY) | A | From __. __. ____ (DD.MM.YYYY) | |
| | B | Until __. __. ____ (DD.MM.YYYY) | B | Until __. __. ____ (DD.MM.YYYY) | |

Q319b. Have you harvested [TARGET CROP] in the same period as last year?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If q319b = No

Q319c. Please explain why you have harvested in a different period than last year.

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

320. What is the total metric tons of cane per hectare that has been achieved for each growing area for sugarcane?

→ Please write down the total metric tons of canes per hectare for each growing area.

| | Growing area A | Growing area B |
|--|----------------------------|----------------------------|
| Total <u>metric tons</u> of canes per <u>hectare</u> | <u>metric ton/ha</u> | <u>metric ton/ha</u> |

321. What is the TRS (total recovered sugar) for each growing area for sugarcane?

→ Please write down the TRS for each growing area.

| | Growing area A | Growing area B |
|-----|----------------------------|----------------------------|
| TRS | <u>metric ton/ha</u> | <u>metric ton/ha</u> |

322. What is the use of the sugarcane harvest in percentage for each growing area?

→ Please write down the percentage of usage. Please write down others if needed.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| 1. Ethanol production | ...% | ...% |
| 2. Refined sugar production | ...% | ...% |
| 96. Other. Specify 1: ... | ...% | ...% |
| 97. Other. Specify 2: ... | ...% | ...% |
| 98. Other. Specify 3: ... | ...% | ...% |
| Don't know / no answer | 99 | 99 |

4094. Who measured the yield on each of the growing areas?

→ SPONTANEOUS, multiple response.

→ Please tick what applies.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Myself | 1 | 1 |
| Dealer/store | 2 | 2 |
| Manufacturer/representative | 3 | 3 |
| Independent advisor | 4 | 4 |
| Cooperative | 5 | 5 |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

4095. A. Compared to previous year, would you say your yield has ... [READ SCALE]?

- Please tick what applies.
→ Single response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Increased | 3 | 3 |
| Remained stable | 2 | 2 |
| Decreased | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4095. B. According to you, why has your yield [INSERT ANSWER ON 4095A]?

- Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4096. A. How satisfied are you with your yield this season?

- READ, single response.
→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4096. B. Can you please explain why you are [INSERT ANSWER on 4096A] with your yield?

- Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4097. A. How satisfied are you with the price you received on the market?

- READ, single response.
→ Please tick what applies.

| | Growing area A | Growing area B |
|----------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |

| | | |
|------------------------|----|----|
| Don't know / no answer | 99 | 99 |
|------------------------|----|----|

4097. B. Can you please explain why you are [INSERT ANSWER on 4097A] with the price you received?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

323. What is the nitrogen content (N) of cane for each growing area for sugarcane?

→ Please write down the nitrogen content of sugar cane for each growing area.

| | Growing area A | Growing area B |
|------------------------------|----------------|----------------|
| Nitrogen content (N) of cane |% |% |

324. What is the percentage of canes damaged at harvest (total lost - not marketable) for each growing area for sugarcane?

→ Please write down the percentage of canes damaged at harvest for each growing area.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Percentage of canes damaged at harvest |% |% |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | |
|----------------|---|--|---|---|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 16. Harvesting | | | | | |

| Growing area B | | | | | |
|----------------|---|--|---|---|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 16. Harvesting | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

O. Harvest timing & quality per crop - BANANA

177. When was the last replanting of the trees - i.e. date when the last trees were replanted - for each growing area for banana?

→ Please indicate the last replanting of the trees for each growing area.

| | Growing area A | Growing area B |
|-----------------|----------------|----------------|
| Last replanting |(Year) |(Year) |

178. Please indicate the percentage of trees that has been replanted during the last replanting phase for each growing area for banana?

→ Please indicate the percentage of trees that has been replanted for each growing area.

| | Growing area A | Growing area B |
|-------------------------------|----------------|----------------|
| Percentage of trees replanted |% |% |

339. When was the harvest period for each growing area for banana?

→ Please write down the harvest period for each growing area.

| | Growing area A | | Growing area B | |
|----------------|----------------|---|----------------|---|
| Harvest period | A | From _ . _ . _ . _ . _ . _ . (DD.MM.YYYY) | A | From _ . _ . _ . _ . _ . _ . (DD.MM.YYYY) |
| | B | Until _ . _ . _ . _ . _ . _ . (DD.MM.YYYY) | B | Until _ . _ . _ . _ . _ . _ . (DD.MM.YYYY) |

Q339b. Have you harvested [TARGET CROP] in the same period as last year?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If 339b = No

Q339c. Please explain why you have harvested in a different period than last year.

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

340. In which months did the harvest peak for each growing area for banana during this season?

→ Please circle the harvest peak months for each growing area.

→ Multiple response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| January | 1 | 1 |
| February | 2 | 2 |
| March | 3 | 3 |
| April | 4 | 4 |
| May | 5 | 5 |
| June | 6 | 6 |
| July | 7 | 7 |
| August | 8 | 8 |
| September | 9 | 9 |
| October | 10 | 10 |
| November | 11 | 11 |
| December | 12 | 12 |
| Don't know / no answer | 99 | 99 |

341. What is the yield per hectare or the number of boxes per hectare (standard box of 18,14 kg box) that has been achieved for each growing area for banana?

→ Please write down the banana yield for each growing area.

| | Growing area A | Growing area B |
|--------------------------------------|----------------|----------------|
| 1. Banana yield in boxes per hectare |boxes/ha |boxes/ha |
| 2. Banana yield in ton per hectare |ton/ha |ton/ha |

342. What is the ratio as number of bunches per box (standard box of 18,14 kg box) for each growing area for banana?

→ Please write down the number of boxes per bunch for each growing area.

| | Growing area A | Growing area B |
|---------------------------|------------------|------------------|
| Number of bunches per box |bunches/box |bunches/box |

342. B. What is the stage of ripeness your bananas achieved for each growing area?

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Physiological ripeness (fruit reached its full development) | 1 | 1 |
| Eating ripeness (fruit is not only fully developed, but also ready to eat) | 2 | 2 |

4094. Who measured the yield on each of the growing areas?

- SPONTANEOUS, multiple response.
→ Please tick what applies.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Myself | 1 | 1 |
| Dealer/store | 2 | 2 |
| Manufacturer/representative | 3 | 3 |
| Independent advisor | 4 | 4 |
| Cooperative | 5 | 5 |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

4095. A. Compared to previous year, would you say your yield has ... [READ SCALE]?

- Please tick what applies.
→ Single response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Increased | 3 | 3 |
| Remained stable | 2 | 2 |
| Decreased | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4095. B. According to you, why has your yield [INSERT ANSWER ON 4095A]?

- Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4096. A. How satisfied are you with your yield this season?

- READ, single response.
→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4096. B. Can you please explain why you are [INSERT ANSWER on 4096A] with your yield?

→ *Spontaneous*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4097. A. How satisfied are you with the price you received on the market?

→ *READ, single response.*

→ *Please tick what applies.*

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4097. B. Can you please explain why you are [INSERT ANSWER on 4097A]?

→ *Spontaneous*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

343. Which percentage of the yield of each growing area for banana is exported and which percentage is used for local market?

→ *Please give the percentage of the yield that is exported and the percentage that is used for the local market. The sum should be 100%.*

| | Growing area A | Growing area B |
|---------------------------------|----------------|----------------|
| 1. Percentage exportable fruits | ...% | ...% |
| 2. Percentage for local market | ...% | ...% |
| | 100% | 100% |

345. What is the percentage fruit losses for each growing area for banana?

→ *Please write down the percentage fruit losses for each growing area.*

| | Growing area A | Growing area B |
|-------------------------|----------------|----------------|
| Percentage fruit losses |% |% |

347. What is the bunch weight in kilogram for each growing area for banana?

→ Please write down the bunch weight in kilogram for each growing area.

| | Growing area A | Growing area B |
|--------------|----------------|----------------|
| Bunch weight |kg |kg |

347.B. What is the average size of your bananas for each growing area?

| Growing area A | Growing area B |
|----------------|----------------|
| cm | cm |

348. What is for each growing area for banana the ratooning, i.e. the number of harvests per year?

→ Please write down the ratooning for each growing area.

| | Growing area A | Growing area B |
|---|--------------------------|--------------------------|
| Ratooning (number of harvests per year) |harvest(s) per year |harvest(s) per year |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. How many times did you perform the activity? One performance equals the treatment of the entire area.
- B. How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.
- C. Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.
 - Machines rely on non-human energy sources: for example: fuel or petrol
- D. Please tell us which type of machinery you used to complete the activity
 - Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.
- E. Could you tell us which type of fuel the machine consumes?
 - For example: diesel or petrol

| Growing area A | | | | | | |
|----------------|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 14. Pruning | | | | | | |
| 16. Harvesting | | | | | | |

| Growing area B | | | | | | |
|----------------|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 14. Pruning | | | | | | |
| 16. Harvesting | | | | | | |

DO NOT ASK IF Q2=17 (Country = Hungary)

38200. When considering all activities stated in the table above, is there anything you have done differently in this season compared to previous years?

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

Y. After harvest

We will now ask some questions about the crop after harvest, including what you do with it and possible losses due to transportation.

4000. What do you do with your harvested crop for each growing area of [TARGET CROP]?

→ SPONTANEOUS, multiple response.

→ Please circle all that apply.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| I store it for own consumption | 1 | 1 |
| I store a part of it for own consumption | 2 | 2 |
| I dry it before selling it | 3 | 3 |
| I sell it on the local market | 4 | 4 |
| I sell it to a trader | 5 | 5 |
| I sell it to a wholesaler | 6 | 6 |
| I sell it to a feed processing plant | 7 | 7 |
| I sell it to a cooperative I am part of | 8 | 8 |
| I sell it directly to the mill | 9 | 9 |
| I sell it directly to a retailer as part of a quality contract | 10 | 10 |
| I sell it to a government owned rural collection center | 11 | 11 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

4001. What is the percentage of crop lost in-between harvest and storage or selling for each growing area of [TARGET CROP]?

→ Please write down the percentage of crop lost in-between harvest and storage or selling for each growing area.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Percentage of crop lost in-between harvest and storage or selling |% |% |

4002. Do you take measures to prevent post-harvest loss for each growing area of [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q2=20 (ITALY) AND IF Q4= 19 (TOMATO)

4002 B Please indicate the tare post-harvest in percentage (i.e. the net content that is marketable) for each growing area of [TARGET CROP].?

→ Please write down the percentage of tare post-harvest for each growing area

| | Growing area A | Growing area B |
|---------------------------------|----------------|----------------|
| Percentage of tare post-harvest |% |% |

Q7013. After harvesting, some parts of [TARGET CROP] ("crop residue") remain on the field / in the orchard. How do you generally deal with this?

→ READ, single response.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| I leave the crop residue on the field | 1 | 1 |
| I burn the crop residue | 2 | 2 |
| I remove the crop residue and leave it untreated in heaps or pits | 3 | 3 |
| I remove the crop residue and use it as compost | 4 | 4 |
| I remove the crop residue and use a mechanical system ("forced aeration") for composting | 5 | 5 |
| I remove the crop residue and export it off farm | 6 | 6 |
| 98: Other. Specify: ... | 98 | 98 |
| Don't know / no answer | 99 | 99 |

IF Q4002=1 (measures taken to prevent post harvest loss)

4003. Which measures do you take to prevent post-harvest loss for each growing area of [TARGET CROP]?

→ Please describe the measures that you take.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

PART VI - OTHER INPUTS - AFTER HARVEST

A. Input costs

We will now ask some questions about the revenue of your crop as well as the costs of the inputs you use to produce your crop.

377. What is the estimated revenue in **USD** per **hectare** for each growing area of [TARGET CROP]?

→ Please write down in **\$/ha**.

→ Interviewer note: this is not referring to the actual profit but to the total REVENUE.

| | Growing area A | Growing area B |
|------------------------|------------------|------------------|
| Estimated revenue | ... \$/ha | ... \$/ha |
| Don't know / no answer | -1 | -1 |

IF Q377= -1 (don't know the estimated revenue for growing area A or B)

378. Could you please indicate the estimated revenue for [TARGET CROP] in general?

→ Please write down the general estimated revenue in **\$/ha**.

| | |
|------------------------|------------------|
| Estimated revenue | ... \$/ha |
| Don't know / no answer | -1 |

379. How would you rate your profitability for each growing area for [TARGET CROP] compared to past season?

→ READ, single response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very high | 5 | 5 |
| High | 4 | 4 |
| Average | 3 | 3 |
| Low | 2 | 2 |
| Very low | 1 | 1 |
| Don't know / no answer | 99 | 99 |

IF Q2=20 (ITALY) AND IF Q379 = 5, 4, 3, 2 or 1

379. A. Can you please explain your answer for each growing area of [TARGET CROP]?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

380. What is your total input cost for each growing area of [TARGET CROP] from first field preparation until harvest? Please consider **trees/seeds**, fertilizers, pesticides, labor, machinery, water use, fuel, electricity, gas.

→ Please write down in \$/ha.

→ Please check that total revenue (Q377) minus total input costs (Q380) is larger than zero. If not, this implies that the grower is working at a loss. Please check with the grower immediately if this is true.

| | Growing area A | Growing area B |
|------------------|----------------|----------------|
| Total input cost | ... \$/ha | ... \$/ha |

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

4111. And how would you split this out in actual costs for each category in terms of importance of the total input cost for each growing area for [TARGET CROP]?

→ READ. Please indicate the actual cost for each category.

→ The sum should add up to the total cost indicated in Q380.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| 1. Trees/Seeds | ... \$ / ha | ... \$ / ha |
| 2. Fertilizers | ... \$ / ha | ... \$ / ha |
| 3. Pesticides | ... \$ / ha | ... \$ / ha |
| 4. Labor <i>Please take into account own labor hours as well</i> | ... \$ / ha | ... \$ / ha |
| 5. Machinery | ... \$ / ha | ... \$ / ha |
| 6. Water use | ... \$ / ha | ... \$ / ha |
| 7. Fuel | ... \$ / ha | ... \$ / ha |
| 8. Electricity | ... \$ / ha | ... \$ / ha |
| 9. Gas | ... \$ / ha | ... \$ / ha |
| 10. Rent/loans for growing areas | ... \$ / ha | ... \$ / ha |
| 98. Other specify: | ... \$ / ha | ... \$ / ha |
| Don't know / no answer | -1 | -1 |

ONLY ASK IF Q2=17 (Country = Hungary)

4111. And how would you split this out in actual costs for each category in terms of importance of the total input cost for each growing area for CORN?

→ READ. Please indicate the actual cost for each category.

→ The sum should add up to the total cost indicated in Q380.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| 1. Seeds | ... HUF / ha | ... HUF / ha |
| 2. Fertilizers | ... HUF / ha | ... HUF / ha |
| 4. Labor <i>Please take into account own labor hours as well</i> | ... HUF / ha | ... HUF / ha |
| 5. Machinery | ... HUF / ha | ... HUF / ha |
| 6. Water use | ... HUF / ha | ... HUF / ha |
| 7. Fuel | ... HUF / ha | ... HUF / ha |
| 10. Rent/loans for growing areas | ... HUF / ha | ... HUF / ha |
| 11. Fungicides | ... HUF / ha | ... HUF / ha |
| 12. Herbicides | ... HUF / ha | ... HUF / ha |
| 13. Insecticides | ... HUF / ha | ... HUF / ha |
| 14. Drying | ... HUF / ha | ... HUF / ha |
| 98. Other specify: | ... HUF / ha | ... HUF / ha |
| Don't know / no answer | -1 | -1 |

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

IF Q4111=-1 (don't know how to split up in actual costs)

381. And how would you split this out in percentages for each category in terms of importance of the total input cost for each growing area for [TARGET CROP]?

→ Please indicate the percentage for each category. The sum should add up to 100%.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| 3. Trees/Seeds | ... % | ... % |
| 4. Fertilizers | ... % | ... % |
| 5. Pesticides | ... % | ... % |
| 6. Labor <i>Please take into account own labor hours as well</i> | ... % | ... % |
| 7. Machinery | ... % | ... % |
| 8. Water use | ... % | ... % |
| 9. Fuel | ... % | ... % |
| 10. Electricity | ... % | ... % |
| 11. Gas | ... % | ... % |
| 12. Rent/loans for growing areas | ... % | ... % |
| 98. Other specify: | ... % | ... % |
| Don't know / no answer | -1 | -1 |

ONLY ASK IF Q2=17 (Country = Hungary)

IF Q4111=-1 (don't know how to split up in actual costs)

382. And how would you split this out in percentages for each category in terms of importance of the total input cost for each growing area for CORN?

→ Please indicate the percentage for each category. The sum should add up to 100%.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| 1. Seeds | ... % | ... % |
| 2. Fertilizers | ... % | ... % |
| 4. Labor <i>Please take into account own labor hours as well</i> | ... % | ... % |
| 5. Machinery | ... % | ... % |
| 6. Water use | ... % | ... % |
| 7. Fuel | ... % | ... % |
| 10. Rent/loans for growing areas | ... % | ... % |
| 11. Fungicides | ... % | ... % |
| 12. Herbicides | ... % | ... % |
| 13. Insecticides | ... % | ... % |
| 14. Drying | ... % | ... % |
| 98. Other specify: | ... % | ... % |
| Don't know / no answer | -1 | -1 |

B. Abiotic stress

We will now ask some questions about external stress factors you faced during the season.

4121. In general for the whole cultivation period, could you please rate the weather conditions for each growing area on the [TARGET CROP]?

→ READ, single response.

→ From first soil preparation until end of harvest.

| | Growing area A | Growing area B |
|-----------------------------------|----------------|----------------|
| No favorable weather conditions | 1 | 1 |
| Normal weather conditions | 2 | 2 |
| Very favorable weather conditions | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q4121=1 (no favorable weather conditions)

387. What was the impact for each growing area on the [TARGET CROP]?

→ SPONTANEOUS, multiple response.

→ Please tick what applies. Note down other if not in list.

| | Growing area A | Growing area B |
|---------------------------|----------------|----------------|
| Reduced yield | 1 | 1 |
| Reduced yield quality | 2 | 2 |
| No impact | 90 | 90 |
| 96. Other. Specify 1: ... | 96 | 96 |
| 97. Other. Specify 2: ... | 97 | 97 |
| 98. Other. Specify 3: ... | 98 | 98 |
| Don't know / no answer | 99 | 99 |

388. Would you say the rain level during the season was ... [READ] for each growing area?

→ READ, single response.

→ Please tick what applies.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| A lot less than usual | 1 | 1 |
| Somewhat less than usual | 2 | 2 |
| The same as usual | 3 | 3 |
| Somewhat more than usual | 4 | 4 |
| A lot more than usual | 5 | 5 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q388=1 OR 2 (less rain during the season)

388 B. You mentioned you had less rainfall this season than usual. Was this problematic?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q388B=1 (low rainfall level was problematic)

388 C. Please describe during which growth stage this problem took place.

- Please specify all applicable growth stages.
→ Multiple response.

| Growing area A | | Growing area B | |
|---------------------|--|---------------------|--|
| Growth stage 1: ... | | Growth stage 1: ... | |
| Growth stage 2: ... | | Growth stage 2: ... | |
| Growth stage 3: ... | | Growth stage 3: ... | |

IF Q388=4 OR 5 (more rain during the season)

388 D. You mentioned you had more rainfall this season than usual. Was this problematic?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q388D=1 (high rainfall level was problematic)

388 E. Please describe during which growth stage this problem took place.

- Please specify all applicable growth stages.
→ Multiple response.

| Growing area A | | Growing area B | |
|---------------------|--|---------------------|--|
| Growth stage 1: ... | | Growth stage 1: ... | |
| Growth stage 2: ... | | Growth stage 2: ... | |
| Growth stage 3: ... | | Growth stage 3: ... | |

3880. Would you say the temperature during the season was ... [READ] for each growing area?

- READ, single response.
→ Please tick what applies.

| | Growing area A | Growing area B |
|----------------------------|----------------|----------------|
| A lot lower than usual | 1 | 1 |
| Somewhat lower than usual | 2 | 2 |
| The same as usual | 3 | 3 |
| Somewhat higher than usual | 4 | 4 |
| A lot higher than usual | 5 | 5 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q3880=1 OR 2 (lower temperature during the season)

3880 B. You mentioned you had lower temperatures this season than usual. Was this problematic?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q3880B=1 (low temperature was problematic)

3880 C. Please describe during which growth stage this problem took place.

→ Please specify all applicable growth stages.

→ Multiple response.

| Growing area A | | Growing area B | |
|---------------------|--|---------------------|--|
| Growth stage 1: ... | | Growth stage 1: ... | |
| Growth stage 2: ... | | Growth stage 2: ... | |
| Growth stage 3: ... | | Growth stage 3: ... | |

IF Q3880=4 OR 5 (higher temperature during the season)

3880 D. You mentioned you had higher temperatures this season than usual. Was this problematic?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q3880D=1 (high temperature was problematic)

3880 E. Please describe during which growth stage this problem took place.

→ Please specify all applicable growth stages.

→ Multiple response.

| Growing area A | | Growing area B | |
|---------------------|--|---------------------|--|
| Growth stage 1: ... | | Growth stage 1: ... | |
| Growth stage 2: ... | | Growth stage 2: ... | |
| Growth stage 3: ... | | Growth stage 3: ... | |

C. Irrigation

DO NOT ASK ENTIRE CHAPTER ON IRRIGATION IF Q2=17 (Country = Hungary)

389. What is the MAIN water source of each growing area of [TARGET CROP] during this season? Only one answer possible.

→ READ. Note down other if not in list. (SR)

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Irrigated using irrigation equipment (e.g. rain, ponds, river, tap water,...) | 1 | 1 |
| Rain-fed (no equipment, only natural rainfall) | 2 | 2 |
| Swamp/wetland | 3 | 3 |
| 98. Other. Specify 1: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q389=1 (if irrigation)

389. **B. Which water source** has been used for irrigation?

→ Spontaneous. Note down other if not in list. Multiple response

| | Growing area A | Growing area B |
|--------------------------------|----------------|----------------|
| Private connection to pipeline | 1 | 1 |
| Private well | 2 | 2 |
| Private borehole | 3 | 3 |
| Public river, stream | 4 | 4 |
| Public lake, pond | 5 | 5 |
| Rainwater in a tank | 6 | 6 |
| Water vendor | 7 | 7 |
| 96. Other specify 1: | | |
| 97. Other specify 2: | | |
| 98. Other specify 3: | | |
| Don't know / no answer | 99 | 99 |

IF Q389=1 (if irrigation)

Q7015 . When was the irrigation period for each growing area for [TARGET CROP]?

→ Please write down the irrigation period for each growing area.

| | Growing area A | | Growing area B | |
|-------------------|----------------|--|----------------|--|
| Irrigation period | A | From ____ . ____ . ____ (DD.MM.YYYY) | A | From ____ . ____ . ____ (DD.MM.YYYY) |
| | B | Until ____ . ____ . ____ (DD.MM.YYYY) | B | Until ____ . ____ . ____ (DD.MM.YYYY) |

IF Q389=1 (if irrigation)

390. What is the number of days you have been irrigating each growing area of [TARGET CROP]?

→ Please write down the number of days.

| | Growing area A | Growing area B |
|------------------------------|----------------|----------------|
| Number of days of irrigation | ...days | ...days |

IF Q389=1 (if irrigation)

391. What is the average amount of hours per day you have been irrigating each growing area of [TARGET CROP]?

→ Please write down the average amount of hours per day.

| | Growing area A | Growing area B |
|---------------------------------|----------------|----------------|
| Average amount of hours per day | ...hours/day | ...hours/day |

IF Q389=1 (if irrigation)

392. What is the amount of liters that is discharged per hour on each growing area of [TARGET CROP]?

→ Please write down the average amount of liters per hour.

→ Interviewer instruction: Please ask for the type of pump the grower used, as this indicated the amount of liters discharged per hour.

| | Growing area A | Growing area B |
|-----------------------------------|----------------|----------------|
| Average amount of liters per hour | ...L/hour | ...L/hour |

IF Q2=37 (SPAIN) AND IF Q4= 3 (BARLEY) AND q389 =1 (irrigation) and q224 = 1 (organic fertilizers)
Q7015. Have you limited irrigation practices during first fertilizer applications with manure/slurry?

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| YES | 1 | 1 |
| NO | 2 | 2 |
| Don't know / no answer | 99 | 99 |

ONLY IF Q2=5 (BELGIUM) AND IF Q389=1 (if irrigation)

396. When do you irrigate each growing area of cauliflower?

→ Please tick what applies.

→ Multiple response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| In the morning | 1 | 1 |
| At noon | 2 | 2 |
| In the evening | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q389=1 (if irrigation)

Q7016. Please indicate what percentage of the area is irrigated for each growing area of [TARGET CROP].

→ Please note the actual percentage of irrigated land as detailed as possible.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Percentage of the area that is irrigated | ... % | ... % |

IF Q389=1 (if irrigation)

Q7017. Which method of irrigation did you apply for each growing area of [TARGET CROP]?

→ *Single response*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Flooding the area | 1 | 1 |
| Propelling water as rain | 2 | 2 |
| Dispersing drop by drop to the base of the plant | 3 | 3 |
| Micro-sprinklers that create a fog | 4 | 4 |
| 98: Other. Specify: ... | 98 | 98 |
| Don't know / no answer | 99 | 99 |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | |
|---|--|---|---|--|--|
| 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 13. Irrigating | | | | | |

| Growing area B | | | | | |
|---|--|---|---|--|--|
| 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 13. Irrigating | | | | | |

PART VII - FEEDBACK

FOR Q397G, 399, 4141A, 4141B, 399C, 399D: INTERVIEWER - PLEASE READ:

- IF Q397C=1: The following questions are about the SYNGENTA protocol. This is [INSERT NAME OF SYNGENTA PROTOCOL].
- IF Q397C=2: The following questions are about the crop recommendations you received.

IF Q397=1 (have received a recommended growing protocol)

397. G1. To which extent did you follow this crop program for each growing area of [TARGET CROP]?

→ READ, *single response*.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Completely followed | 1 | 1 |
| Partially followed | 2 | 2 |
| Not followed at all | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q397=1 (have received a recommended growing protocol)

399. Please explain why you follow or do not follow the protocol.

→ Please write down why you have or have not followed the protocol.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q397=1 (have received a recommended growing protocol)

399. C. How satisfied are you with the protocol for each growing area of [TARGET CROP]?

→ READ, *single response*.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Rather satisfied | 3 | 3 |
| Rather unsatisfied | 2 | 2 |
| Not satisfied at all | 1 | 1 |
| Don't know / no answer | 99 | 99 |

IF Q399C=1 OR 2 OR 3 OR 4

399. D. Please explain your answer for each growing area of [TARGET CROP]?

→ Please explain.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

399. E. What is your opinion on The Good Growth Plan?

→ Interviewer note: Please make sure grower knows that this study is part of The Good Growth Plan.

→ Please describe.

ONLY IF Q2=22 and Q4=13 (Japan, potato)

IF Q397=1 (have received a recommended growing protocol) and IF REFERENCE FARM

399. E1. What is your opinion about the in-furrow technology you applied?

→ Please describe.

4008. How did the result of the farmer report influence decisions taken during this season?

→ Please explain what you did differently.

Q57B. What is your main way of keeping track of your farm management activities? E.g. application of crop protection products

→ Single response.

| | |
|---|----|
| I use an online system provided by the government | 1 |
| I use an online system provided by an external partner (e.g. CP manufacturer) | 2 |
| I use an Excel-sheet | 3 |
| I keep track of this on paper | 4 |
| I do not keep track of my farm management activities | 90 |
| Other. Specify: ... | 98 |
| Don't know / no answer | 99 |

IF Q57B = code 1 or 2 (I use an online system provided by the government; provided by an external partner)

Q57B1. What is the name of the online system you are using? Please be as specific as possible.

→ *Single response.*

| |
|--|
| |
|--|

IF Q57B = code 90 (do not keep track of farm management activities)

Q57C. Do you plan in the near future to start using a tool to keep track of your farm management activities?

→ *Single response.*

| | |
|---|----|
| An online system provided by the government | 1 |
| An online system provided by an external partner (e.g. CP manufacturer) | 2 |
| An Excel-sheet | 3 |
| On paper | 4 |
| I will not keep track of my farm management activities in the near future | 90 |
| Other. Specify: ... | 98 |
| Don't know / no answer | 99 |

This completes the data collection guide. Thank you for your cooperation!