

Adoption of Fertilizer Use on Barley in Northern Syria

Province		
District		
Village		
Rainfall Zone		
Farmer no.		

1. A) How many hectares of barley did you have in 1991/92 season? |

1. Total		ha
2. Rainfed		ha
3. Supplementary irrigated		ha
4. Fully irrigated		ha

B) How many hectares of barley do you have in 1992/93 season? | _____ ha

C) If there is a difference between A and B, why there is a difference? | _____

1. Prices	2. Rotation	
3. Livestock requirement	4. Yield	
5. Other _____		

2. A) What crops did you plant in 1991/92 season? | _____ ha

- Wheat		ha
- Barley for grazing only		ha
- Barley for seed and straw		ha
- Lentils		ha
- Chickpeas		ha
- Faba beans		ha
- Vetch		ha
- Lathyrus		ha
- Peas		ha
- Melons		ha
- Cotton		ha
- Vegetables		ha
- Other Crops _____		ha
- Fallow		ha
- Uncultivable land		ha

B) Do you have any irrigated land? | 1. Yes 2. No

- C) If yes to B, What is your source for irrigation? _____
 1. Irrigation network 2. Small dam
 3. Well 4. Other _____
- D) If yes to B, do you grow barley in this land? | 1. Yes 2. No
-

3. A) Did you at any time reside outside your village? 1) Yes 2) No

B) How long have you been a farmer cultivating barley? _____ years

- C) Land possession: * Own (one owner) _____ ha
 * Own (more than one owner) _____ ha
 * Rent _____ ha
 * Sharing _____ ha
 * Reform _____ ha
 * Others _____ ha
 * Total holding area _____ ha

- D) Soil fertility: * High _____
 * Medium _____
 * Low _____

- E) Farm location: * Distance from your residency _____ km
 * Distance from the big village _____ km
 * Distance from Mantika _____ km
 * Distance from city _____ km
 * Distance from Extension _____ km

F) Farm road conditions _____

G) Your own agricultural machinery and equipment

Type	Total
1. Tractor	
2. Combine harvester	
3. Lorry/pick-up	
4.	
5.	
6.	

H) Animal property

Type	Total
Sheep	
Cow	
Goat	
Other	

I) Your income from Barley compared to livestock _____

- 1* Barley income = livestock income
- 2* Barley income > livestock income
- 3* Barley income < livestock income

J) Your barley income compared to gross income of the house hold _____

- 1* The gross income is coming from barley only
- 2* 3/4 of the gross income is coming from barley
- 3* 1/2 of the gross income is coming from barley
- 4* Barley income is very small part of income

K) Your labour force: _____

- 1* Family labour only
- 2* Family labour > out labour
- 3* Family labour = out labour
- 4* Family labour < out labour
- 5* Outside labour only

L) Do you have off farm job? _____

1) Yes 2) No

If yes, if you compare your off farm earning with your farm income which is better?

- 1* Farm better _____
- 2* Both the same
- 3* Off-farm job better

4. A) How old are you _____ year

B) Years of education _____ year

C) Experience in farming _____ year

D) Cooperative membership 1) Yes 2) No

F) Family size and distribution by age and on-farm employment

	Working on farm		
	<u>Total</u>	<u>Partial</u>	<u>Full</u>
Children	_____	_____	_____
Active adults	_____	_____	_____
Old adults	_____	_____	_____

E) Household income: From farm _____ %
From agric. but outside the farm _____ %
From outside agric. _____ %

5. A) Where do you get the following agricultural inputs?

* Barley seeds _____, _____, _____, _____
* Fertilizers _____, _____, _____, _____
* Combine harvester _____, _____, _____, _____
* Tractors _____, _____, _____, _____
* Sowing machine _____, _____, _____, _____
* Farming transport _____, _____, _____, _____
* Credit _____, _____, _____, _____

B) How do you feel about getting the above inputs? (eg. Difficult=1, Medium=2, Easy=3)

* Barley seeds 1 2 3
* Fertilizers 1 2 3
* Combine harvester 1 2 3
* Tractors 1 2 3
* Sowing machine 1 2 3
* Farming transport 1 2 3
* Credit 1 2 3

C) How do you feel about the cost of the above inputs (rent or buy) eg. Expensive=1, Fair=2, Cheap=3.

- | | |
|---------------------|-------|
| * Barley seeds | 1 2 3 |
| * Fertilizers | 1 2 3 |
| * Combine harvester | 1 2 3 |
| * Tractors | 1 2 3 |
| * Sowing machine | 1 2 3 |
| * Farming transport | 1 2 3 |

D) Do you sell your production? (a) Yes (b) No
 If "yes" where? _____, _____, _____,

and how do you feel about selling? 1) Easy 2) Medium 3) Difficult

- | | |
|---|----------------|
| 6. A) How many barley plots did you have in 1991/92 season? | _____ plots |
| B) What was the area of the largest rainfed plot | _____ ha |
| C) What was the crop grown in this plot in the previous year (i.e. before barley) | _____ |
| 1. Fallow | 5. Chickpea |
| 2. Barley | 6. Cotton |
| 3. Wheat | 7. Melon |
| 4. Lentil | 8. Other _____ |
| D) How do you describe the soil on the largest plot? | _____ |
| <u>Stoniness</u> | _____ |
| 1. Stony | 2. Medium |
| | 3. Fine |
| <u>Slope</u> | _____ |
| 1. Flat | 2. Medium |
| | 3. Hilly |
| <u>Depth</u> | _____ |
| 1. Deep | 2. Medium |
| | 3. Shallow |
| E) How many kilograms of barley seed per hectare did you use? | _____ kg/ha |

F) What was the price of barley seed?	_____ SL/ha
G) What was the variety of barley you used on the largest plot 1. Arabic Aswad 2. Arabic Abiad 3. Other _____	_____
H) Where did you get the seeds 1. Own stock 2. Market 3. Neighbour 4. Government 5. Other _____	_____
I) 1. Do you have your barley grazed at green stage?	1. Yes 2. No
2. If yes to I-1, how frequently do you have barley grazed? 0. irrelevant 2. in good years 1. every year 3. in bad years	_____
3. Did you have barley grazed while green on the largest rainfed plot?	1. Yes 2. No
J) 1. Did you have continued rainfed barley cropping in your farm? (If yes turn to J-2, if No turn to 7)	1. Yes 2. No
2. When did you start this practice?	_____ years
3. What are the reasons for this practice? _____ _____	_____
4. Have you noticed any problems when you applied continued barley cropping, and what are these problems? _____ _____	_____
5. How long can you expect to continue this practice?	_____ years
6. Do you think growing continues barley has any effect on need for fertilizer?	1. Yes 2. No
7. If yes to 6, did you apply fertilizer on all plots with continues barley cropping?	1. Yes 2. No

8. If no to 7, what are the reasons you did not use fertilizer on these plots?

7. A) Ploughing and seeding of the largest barley plot

	Was it done	<u>Equipment</u>		Cost of Operation (SL/ha)
		1. M.B.P.	2. Disc plow	
	1. Yes	3. Cult.	4. Disc harrow	
	<u>2. No</u>	5. Drill	6. Hand	
		7. Spinner	8. Box on disc	
1st ploughing	_____	_____	_____	_____
2nd ploughing	_____	_____	_____	_____
Ayar and Radad	_____	_____	_____	_____
Seeding	_____	_____	_____	_____

B) Fertilizer application and weeding on the largest plot

Application	Was it done	<u>Application Method</u>		Input rate	Type	Price	Cost of
		1. Mechanical	2. Drill				
	1. Yes	3. Broadcast	4. Spray	kg/ha	%	SL/kg	(SL/ha)
	<u>2. No</u>	5. Airplane					
Manure	_____	_____	_____	_____	_____	_____	_____
P ₂ O ₅	_____	_____	_____	_____	_____	_____	_____
N at planting	_____	_____	_____	_____	_____	_____	_____
N at top dressing	_____	_____	_____	_____	_____	_____	_____
Herbicide	_____	_____	_____	_____	_____	_____	_____
Manual weeding	_____	_____	_____	_____	_____	_____	_____

C) Harvest of the largest barley plot

	<u>Was it done</u>	<u>Method</u>	<u>Cost of machine SL/ha</u>	<u>Cost of labour SL/ha</u>
1. Harvest	_____	_____	_____	_____
2. Transport to thresh floor	_____	_____	_____	_____
3. Threshing & Winnowing	_____	_____	_____	_____
4. Bagging	_____	Bag cst _____ SL	Bag no. _____ Bag/ha	_____
5. Transport for disposal	_____	_____	_____	_____

- D) 1. If harvest was done, how much of the area did you harvest? | _____ ha
2. What were the grain and straw yields? Grain _____ kg/ha
 Straw _____ kg/ha
3. Did you have any area of the largest plot grazed instead of harvest? | 1. Yes 2. No
4. If yes to D-3, what did you charge, or what was the ongoing rate around here? | _____ SL/ha
5. If yes to D-3, why did you graze instead of harvesting?
- inadequate yield
- inadequate feed
- labour shortage
- machinery shortage
- money shortage
- other _____
6. If yes to D-3, approximately, what would have been the yield if you had harvested instead of grazing it? | _____ kg/ha
7. Did you have the stubble grazed? | 1. Yes 2. No
8. If yes to D-7, what did you charge, or what was the ongoing rate around here for grazing the stubble? | _____ SL/ha
9. What did you do with your farm barley production?

<u>Grain</u>	Quantity (kg or bags)	Price SL/kg
a) sold to government	_____	_____
b) sold in market	_____	_____
c) used on the farm as feed	_____	
d) paid out as share for labour or machinery	_____	
e) saved for seed	_____	
 <u>Straw</u>		
a) sold in market	_____	_____
b) used on the farm	_____	

If the answer is in bags, ask:

How much does a barley grain bag weight?

How much does a barley straw bag weight?

| _____ kg/bag
| _____ kg/bag

E) How do you feel about barley selling price?

1) good _____, 2) fair _____, 3) low _____

F) What do you expect your barley to be:

1* If the year is good _____ kg/ha

2* If the year is bad (code 0 if grazed) _____ kg/ha

3* If the year is normal _____ kg/ha

G) How many years out of the last ten do you regard as a good, normal and bad with respect to your barley crop?

* Good _____ years

* Medium _____ years

* Bad _____ years

8. A) Have you ever used fertilizer on your farm in the past? | 1. Yes 2. No
|
- B) Did you use any fertilizer on any crop other than |
barley in 1991/92 season? | 1. Yes 2. No
|
- C) Did you use phosphate on all your barley areas? | 1. Yes 2. No
|

- D) If no to C, How many hectares did you use phosphate this year | _____ ha
|
- E) If no to C, what are the reasons you did not use phosphate on all your barley? _____
|
_____ |
- F) Did you use nitrogen on all your barley area? | 1. Yes 2. No
|
- G) If no to F, how many hectares did you use nitrogen this year | _____ ha
|
- H) If no to F, what are the reasons you did not use nitrogen on all your barley? _____
|
_____ |
- I) Have you ever analyzed your farm soil? | 1. Yes 2. No
|
- J) Have you ever used chemical fertilizer on your rainfed barley | 1. Yes 2. No
If yes, turn to 9 |
If no, turn to 11 |

9. A) When did you start using nitrogen (N) at planting time for the first time, how much nitrogen have you applied, how long have you been using this amount, what type of nitrogen have you used, how many times have you applied this amount, how have you applied it, and in your opinion what is the best amount of nitrogen to be applied?

<u>Date of first using N</u>	<u>Amount of N</u>	<u>Period of using this amount</u>	<u>Type of N</u>	<u>Time of applying N</u>	<u>Method of applying N</u>	<u>Best mount of N</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

- B) When did you start using nitrogen (N) at top dressing for the first time, how much nitrogen have you applied, how long have you been using this amount, what type of nitrogen have you used, how many times have you applied this amount, how have you applied it, and in your opinion what is the best amount of nitrogen to be applied?

<u>Date of</u>	<u>Period</u>	<u>Time of</u>	<u>Method of</u>
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first using <u>N</u>	Amount of <u>N</u>	of using <u>this amount</u>	Type of <u>N</u>	applying <u>N</u>	applying <u>N</u>	Best amount <u>of N</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

C) When did you start using phosphate (P) for the first time, how much P have you applied, how long have you been using this amount, what type of P have you used, how many time have you applied this amount, how have you applied it, and in your opinion what is the best amount of P to be applied?

Date of first using <u>P</u>	Amount of <u>P</u>	Period of using <u>this amount</u>	Type of <u>P</u>	Time of applying <u>P</u>	Method of applying <u>P</u>	Best amount <u>of P</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

10. Can you explain the reasons for using chemical fertilizers and the degree to which they help you to reach this decision?

<u>Reasons</u>	Degree of importance			
	<u>Important</u>	<u>Medium</u>	<u>Little</u>	<u>Not</u>
1. Aware of its application	3	2	1	0
2. Its availability on time	3	2	1	0
3. Credit availability	3	2	1	0
4. Not risky	3	2	1	0
5. Want to increase the yield	3	2	1	0
6. Reduce the possibility of crop failure	3	2	1	0
7. Recommended by Extensionists	3	2	1	0
8. My neighbour is using it	3	2	1	0
9. Labour availability	3	2	1	0
10. Not expensive	3	2	1	0
11. _____	3	2	1	0
12. _____	3	2	1	0
13. _____	3	2	1	0

From your experience in using chemical fertilizers what kind of difficulties do you encounter and what suggestions you can make to eliminate them?

11. Can you explain the reasons for not using chemical fertilizers and the degree to which they force you to reach this decision?

<u>Reasons</u>	<u>Degree of importance</u>			
	<u>Important</u>	<u>Medium</u>	<u>Little</u>	<u>Not</u>
1. Not aware of its application	3	2	1	0
2. Fertilizer is not available on time	3	2	1	0
3. Credit is not available on time	3	2	1	0
4. Risky to use	3	2	1	0
5. No real benefit of using it	3	2	1	0
6. Lack of trust in Extension	3	2	1	0
7. Neighbour do not use it	3	2	1	0
8. Lack of labour	3	2	1	0
9. Expensiveness	3	2	1	0
10. Causes more weed problem	3	2	1	0
11. _____	3	2	1	0
12. _____	3	2	1	0
13. _____	3	2	1	0
14. _____	3	2	1	0

What do you think the best solution for solving your problem and if it is solved would you apply the chemical fertilizers?

12.A) Can you explain the reasons for:

- (a) not applying nitrogen at all,
- (b) applying low amount of nitrogen,
- (c) applying medium amount of nitrogen,
- (d) applying the recommended amount of nitrogen.

<u>Reasons</u>	<u>Rank</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

B) Can you explain the reasons for:

- (a) not applying nitrogen at planting time,
- (b) applying low amount of it,
- (c) applying medium amount of it,
- (d) applying the recommended amount of it.

<u>Reasons</u>	<u>Rank</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

C) Can you explain the reasons for:

- (a) not applying nitrogen at top dressing,
- (b) applying low amount of it,
- (c) applying medium amount of it,
- (d) applying the recommended amount of it.

<u>Reasons</u>	<u>Rank</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

D) Can you explain the reasons for:

- (a) not applying phosphate at all,
- (b) applying low amount of phosphate,
- (c) applying medium amount of phosphate,
- (d) applying the recommended amount of phosphate, and

<u>Reasons</u>	<u>Rank</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

E) What are the main problems you face at the time of obtaining chemical fertilizers?

13. A) I would like you to tell me the degree to which you would like the following jobs for earning your living and please rank these jobs in accordance to their priority for you? (Like very much=5, Like=4, Neutral=3, Dislike=2, and Dislike very much=1).

No.	Job	Score
1.	Rain-fed farming	1-----2-----3-----4-----5
2.	Irrigated farming	1-----2-----3-----4-----5
3.	Animal raising	1-----2-----3-----4-----5
4.	Agric. machinery	1-----2-----3-----4-----5
5.	Trade	1-----2-----3-----4-----5
6.	Government employment	1-----2-----3-----4-----5
7.	Other self employment	1-----2-----3-----4-----5

B) Could you tell me the degree to which you agree or disagree with the following statements?
 Agree=5, Agree in part=4, and Neutral=3, Disagree in part=2, and Disagree=1.

1.	The future of my family is very important for me	1	2	3	4	5
2.	Our fathers planted for us to eat and we are doing the same for our children	1	2	3	4	5
3.	A very hard working man is good	1	2	3	4	5
4.	In order to have better life we should go back to our traditional life	1	2	3	4	5
5.	Money brings happiness	1	2	3	4	5
6.	My practical knowledge in farming is better than Extensionists	1	2	3	4	5
7.	Working hard or less is the same	1	2	3	4	5
8.	I am willing to change my agriculture practices to be modern	1	2	3	4	5
9.	Research is necessary for agricultural development	1	2	3	4	5
10.	I like to be well off	1	2	3	4	5
11.	Farmers can develop their farming by themselves only	1	2	3	4	5
12.	I like to imitate progressive farmers	1	2	3	4	5
13.	I like to be imitated by other farmers	1	2	3	4	5
14.	I am satisfied with my progress in farming	1	2	3	4	5
15.	Using new ideas for the first time is risky	1	2	3	4	5
16.	Recent farming practices are much easier than in the past	1	2	3	4	5
17.	Innovations are time savers	1	2	3	4	5

C) Can you tell me first how do you see your self, second how other farmers see you and third how would like to be seen in relation to the following statements? (eg. very

progressive=5, progressive=4, neutral=3, traditional=2, very traditional=1.

	<u>See yourself</u>	<u>Other see you</u>	<u>Would like to be seen</u>
Progressive-Traditional 1	5 4 3 2	1 5 4 3 2	1 5 4 3 2
Efficient-Not efficient	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
Innovative-Not innovative	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
Experienced-Not experienced	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
Fortunate-Not fortunate	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
Flexible-Not flexible	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
Scientifically oriented- Not scientifically oriented	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
Like to take risks- Not like to take risks	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1

D) Do you share your farming decision with anyone? 1. Yes 2. No
 If yes, how: 1) always; 2) sometimes; 3) rarely; 4) not at all.

 If yes, who you share _____

E) Who makes the final decision in farming?

- 1* Yourself _____
- 2* Yourself plus your wife _____
- 3* Yourself plus your brother, sons, etc. _____
- 4* The whole family _____
- 5* The sharecropper _____
- 6* Others _____

F) Do you keep any proverbs? 1. Yes 2. No _____
 If yes to H, tell them to me please?

None turn to I.

G) Do you believe in them? 1. Yes 2. No

H) Do you apply them in your agricultural practices?

a) always b) sometimes c) rarely d) not at all _____

I) What does it mean to you if you are the first to adopt an innovation in your village?

- 1* Proud of it _____
- 2* Normal
- 3* Does not mean any thing

J) If you hear about new idea or practices in agriculture what ever it is, what would be your reaction to it? _____

- 1* Want to know about it in details
- 2* Want to know little about it
- 3* Do not care

K) Where do you put your self among other farmers in relation to the adoption of innovations?

- 1* in the first year _____
- 2* in the second year
- 3* in the third year
- 4* between 4-5 years
- 5* not easily adopt
- 6* none
- 7* others _____

14. Where do you get your information about farming practices, rank them in the priority for the greatest benefit of you?

Source of information	Rank
1.	_____
2.	_____
3.	_____
4.	_____
5.	_____
6.	_____
7.	_____
8.	_____

B) Did you hear about agricultural Extension? 1) Yes, when? _____
 2) No

C) Do you know what agriculture Extension stand for? _____

D) Do you have in your village or around it an agricultural extension office?
 1) Yes, since _____

2) No

E) Do you visit Extension agent (or any agricultural organization) at his office in order to seek advices and new information?

- 1) Yes, since _____
How often do you visit? i) always (number of visits a year) _____
ii) sometimes (number of visits a year) _____
iii) rarely (number of visits a year) _____

2) No

F) Does Extension agent visit your? 1) Yes, since _____ 2) No
How often do you visit? i) always (number of visits a year) _____
ii) sometimes (number of visits a year) _____
iii) rarely (number of visits a year) _____

G) Have you seen any demonstration trials on fertilizer use on barley? 1. Yes 2. No
If yes to G, what do you think about it?

H) Do you have television set? 1) Yes 2) No

I) If not to H, do you watch somebody's television? 1) Yes 2) No

K) If yes to H or I, how do you evaluate our Green Land program?

L) Do you listen to the radio? 1) Yes 2) No

M) Did you hear of our Good Nature Land program? 1) Yes 2) No

N) If yes to M, how do you evaluate this program?

O) If you face agricultural problems, where would you go to solve it?

- 1) Neighbour 2) Extension
3) Some agricultural organization 4) Other _____

Farmer's Name: _____
Date of visit: _____