

Investigation of Decline in *Pinus pinea* Nut Yield in Kozak Region of Izmir Province Bergama District (Socio-economic Research Project): Farmer Questionnaire Form

This Questionnaire Form was prepared within the scope of the project titled "Investigation of Decline in *Pinus Pinea* Nut Yield in Kozak Region of Izmir Province Bergama District (Socio-economic Research Project)," carried out by the Izmir Metropolitan Municipality and Turkish Foresters Association, in order to determine the socioeconomic structure and problems of the pine nut farmers. There are 23 questions in total in the questionnaire form. There is no question (your name and similar) that will reveal your identity in the questionnaire applied to you, and the information obtained will be used for purely scientific purposes and its confidentiality will be protected. Thanks in advance for your help.

1. Age:

2. Gender

- (1) Male (2) Female

3. Marital status

- (1) Married (2) Single

4. Education level

- (1) None (2) Primary (3) Secondary
(4) High School (5) University (6) Graduate

5. Occupation

- (1) Farmer (2) Retired (3) Employee
(4) Trader (5) Public officer (6) Others

6. What is the number of dependents you have?

- (1) 1 Person (2) 2 People (3) 3 People
(4) 4 People (5) 5 People (6) 6 People and more
(7) Living alone

7. Do you have a cooperative membership related to pine nut production?

- (1) Yes (2) No

7.1 If your answer is no, what are the reasons?

- (1) Failure of farmers to improve
(2) Lack of corporate communication
(3) Uncertainties and the powerless-ness of cooperatives

8. Do you have any activity other than your profession and pine nut production? ((Multiple answers can be given))

- (1) Livestock (2) Fruit and vegetable production
(3) Beekeeping (4) Viticulture
(5) Mining (6) Combination of some these
(7) None

9. Who owns the land where you produce pine nuts? (Multiple answers can be given)

- (1) Own (2) Cooperative (3) State

(4) Others (rent, lease, borrow)

10. Which of the following technical practices do you implement in pinus pinea cultivation? (Multiple answers can be given)

(1) Fertilization
(4) Pruning

(2) Pesticide
(5) None

(3) Irrigation

11. In which months do you harvest pine nuts? (Multiple answers can be given)

(1) August
(4) November
(7) February
(10) May

(2) September
(5) December
(8) March
(11) June

(3) October
(6) January
(9) April
(12) July

12. Do you think there is an early harvest in Kozak Region?

(1) Yes

(2) No

12.1 If your answer is yes, why is it harvested early? (Multiple answers can be given)

(1) Anti-theft prevention
(3) To sell expensive

(2) Reseller/Merchant pressure
(4) To get product revenue early

13. Do you do any agro-silvopastoral systems practices under stone pine?

(1) Yes

(2) No

13.1 If your answer is Yes, what kind of activities do you practice under stone pine?

(1) Clover
(4) Viticulture

(2) Oat-Vetch
(5) Barley-Wheat

(3) Corn

14. Do you graze your cattle and ovine animals under the Pine Pine trees?

(1) Yes

(2) No

14.1 If your answer is Yes;

(1) Bovine

(2) Ovine

(3) Bovine and ovine together

15. Which of the following causes the yield reduction in stone pines? (Multiple answers can be given)

(1) *L.occidentalis*
(4) Air pollution
(7) Others

(2) Stone quarries
(5) Climate change

(3) Gold mines
(6) Acid rains

16. How many years have you seen Leptoglossus occidentalis, which is thought to be harmful for stone pine?

(1) I didn't see
(4) I have seen for 11-15 years

(2) I have seen for 0-5 years

(3) I have seen for 6- 10 years

17. Do you fight/control and care for diseases and pests?

(1) Yes

(2) No

18. If you have done cutting down trees in Kozak Region, what are your reasons for doing it?

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| (1) To combat diseases and pests | (2) To earn additional income |
| (3) In order to pay debts | (4) Due to decreasing the pine nut yield |

19. Do you plan to give up on stone pine cultivation due to the low yield of pine nut?

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| (1) Yes | (2) No |
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19.1 If your answer is Yes, which of the following alternative activities would you prefer?

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| (1) Livestock | (2) Beekeeping | (3) Horticulture |
| (4) Fruit growing | (5) Olive cultivation | (6) Others |

20. Is there anyone in your family who migrated due to the decrease in the amount of pine nut production?

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| (1) Yes | (2) No |
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21. Are there family members who are considering emigrating in the near future?

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| (1) Yes | (2) No |
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22. Do you have any information about Bergama Kozak Pine Nut Geographical Indication Protection?

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| (1) Yes | (2) No |
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23. Do you have any information about Organic Product Certificate?

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|---------|--------|
| (1) Yes | (2) No |
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23.2 If your answer is Yes, what are the benefits of organic product certification?

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|---------------------------------|-------------------------------------|
| (1) Earning additional income | (2) Providing competitive advantage |
| (3) Maintaining product quality | (4) All of them |