Research Journal of Agricultural Sciences
Tarım Bilimleri Araştırma Dergisi
E-ISSN: 1308-027X, 10(2): 33-37, 2017, www.nobel.gen.tr

Fertilizer and Pesticide Preferences of Rice Producers in İpsala District: An Economic Survey

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Geliş Tarihi: 10 Temmuz 2017
Kabul Tarihi: 15 Eylül 2017

Abstract
İpsalaDistrict is known as "Rice Land", since it is one of the most important rice producer regions of Turkey and 35% of total rice production in Turkey is provided from İpsala Region. This region is located on the Meriç Plain and has a great land condition – natural water resources to make especially paddy cultivation.In this study, an economic review was performed in terms of fertilizer and pesticide preferences of rice producersliving in İpsala, Karpuzlu and MeriçRegionsby using some systematic data collection techniques.

Keywords: Rice producers, İpsala District, Economic review

İpsala İlçesinde Pirinç Üreticilerinin Gübre ve Pestisit Tercihleri: Ekonomik Bir İnceleme

Özet
İpsala Bölgesi Türkiye'nin en önemli pirinç üreticisi bölgelerinden biri olması ve Türkiye'de toplam pirinç üretiminin % 35'inin İpsala Bölgesi'nden sağlanması sebebiyle "PirinçDiyarı" olarak bilinmektedir. Bu bölge Meriç Ovası'nda bulunmakta ve özellikle çeltik yetiştiriciliği yapmak için ideal doğal su kaynakları olan mükemmel bir araziye sahiptir. Bu çalışmada İpsala, Karpuzlu ve Meriç Bölgelerinde yaşayan pirinç üreticilerinin gübre ve tarım ilacı tercihleri açısından bazı sistematik veri toplama teknikleri kullanılarak ekonomik bir inceleme yapılmıştır.

Anahtar Kelimeler:Pirinç Üreticileri, İpsala Bölgesi, Ekonomik İnceleme

INTRODUCTION

Meriç Plain is known as most productive agricultural area of Thrace Region of Turkey. Rice production is being made in 31 provinces of Turkey. Edirne Province takes the first place on rice cultivation in Turkey and İpsala Region has the largest rice cultivation area of Edirne City and also makes the greatest contribution to the rice production of Turkey [1, 2, 3].

In this study, an economic review was performed in terms of fertilizer and pesticide applications of rice producer living in İpsala, Karpuzlu and Meriç regions by using some systematic data collection techniques.

2. MATERIAL AND METHOD

İpsala District, Meriç District and Karpuzlu Town are located in the Meriç Plain and on the south – west side of Edirne Province(Figure 1).

Survey technique, which is widely used all over the world, is one of the most effective systematic quantitative data collection techniques[4, 5, 6]. In this study, survey technique was used to perform an economic review in terms of fertilizer and pesticide applications of rice producer living in three most important rice producing regions in Meriç Plain(İpsala District, Meriç District and Karpuzlu Town). In order to ensure the objectivity of the results, total of 134 rice producer dispersed uniformly as much as possible in terms of investigated different regions (41 people form İpsala District, 60 people from Meriç District and 33 people from Karpuzlu Town) were used in this application.

3. RESULTS AND DISCUSSION

Questions directed to the rice producers living in Meriç Plainare given in Table 1 and the results of the quantitative data collection technique are given in Figure 2 – 11.

Table 1. Questions directed to the rice producers

In order to understand the financial capacity of the producers in İpsala District, it was asked to the answerers how they financed their fertilizer purchase. In Figure 2 below, we can see the pie chart of the answers about the question. According to the pie chart, we can see that only 38% of the answerers can finance the fertilizer purchase by

Figure 1. Meriç Plain

No. of questions	Questions
1.	How do you finance the fertilizer purchase?
2.	What kind of fertilizer do you use to the soil before planting?
3.	What kind of fertilizer do you use on surface nitrogen fertilization?
4.	Do you apply any soil analysis before planting?
5.	Where do you provide fertilizer?
6.	Where do you provide pesticides?
7.	Where do you consult for the use of pesticides?
8.	Do you have any problem with the effectiveness of herbicides?
9.	Which weeds you cannot control with the herbicides sold in the market?
10.	Which pesticide method do you want to use on rice cultivation?

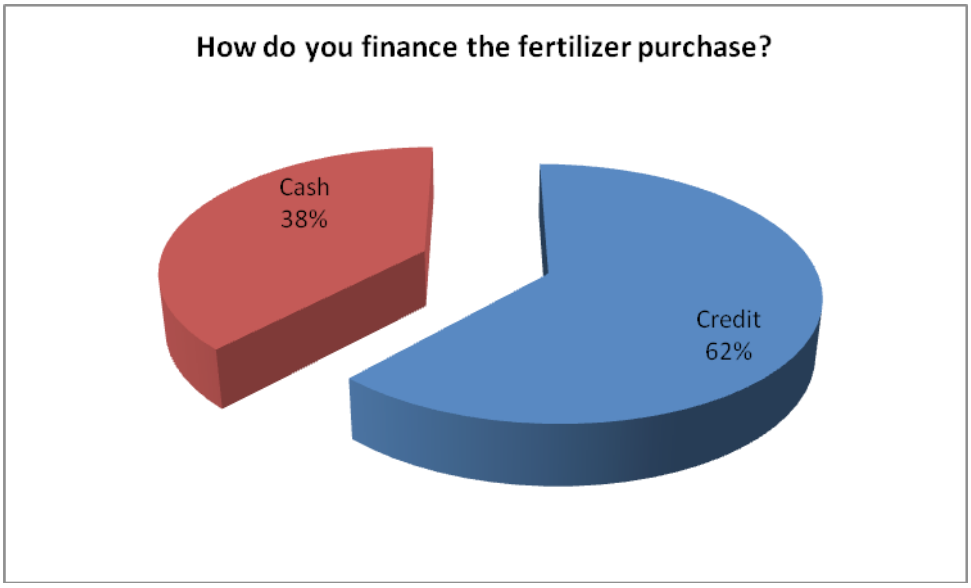

Figure 2. Frequencies of the answers for the 1st question

cash, the rest 62% finance by credit. The producers in İpsala District is generally known rich, however, this result does not indicate high level income producers.

In the second question, we tried to get information from producers about their fertilizer preferences and it was asked to the answerers what kind of fertilizer they used for the soil before planting, as seen in Figure 3 below. Most of the answers are close to each other, but 20.20.0 (a kind of fertilizer) became the most popular choice with the rate of 44%. And the following answer is the usage of 20.20.0 combined with urea. This answer has a percentage of 20% and since both answers include 20.20.0, the total percentage of 20.20.0 usage became 64% with the sum of 44% and 20%. This is, of course, a significant percentage.

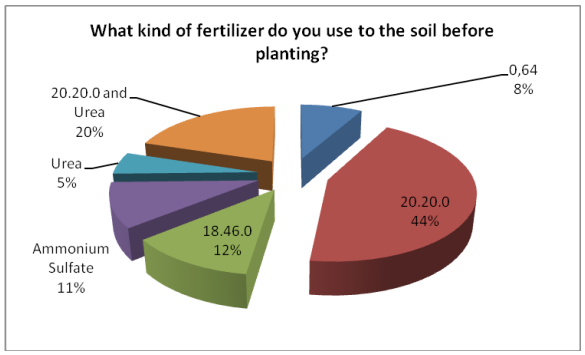

Figure 3. Frequencies of the answers for the2nd question

In Figure 4 below, we can see the answers of producers on what kind of fertilizer they used on surface nitrogen fertilization. Only 7% of the answerers replied as urea and only 5% of the answerers replied as ammonium nitrate, whereas 88% of them replied as ammonium sulfate. This is also a significant percentage and so, when we take the 2nd and3rd questions together, we can say that the producers in İpsala District mostly prefer 20.20.0 as pre-planting fertilizer and ammonium sulfate as surface nitrogen fertilization.

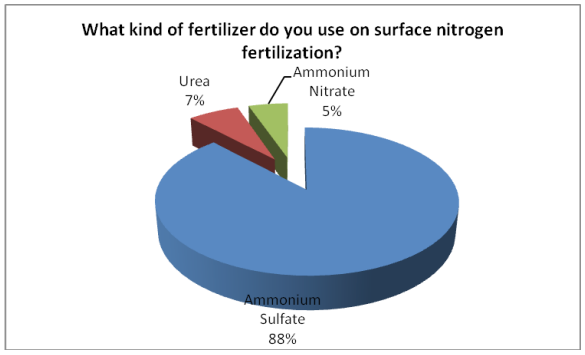

Figure 4. Frequencies of the answers for the 3rdQuestion

In our 4th question, we asked to the answerers whether they applied any soil analysis before planting, or not. We can see the results as a pie chart as seen in Figure 5 below. Unfortunately, the results are not satisfying. Because, only 36% of the answerers replied "Yes", 42% of them replied "No" and 22% of them replied "Not every year". These results, unfortunately, indicate that, paddy cultivation in İpsala District is not performed professionally. Soil analysis is a very important process of paddy cultivation, but only 36% of the producers are aware of this situation. The bigger percentage of 42% are not aware of this situation and the rest 22% are aware but think that it is not necessary for every year. These results are big problems in terms of professionalism.

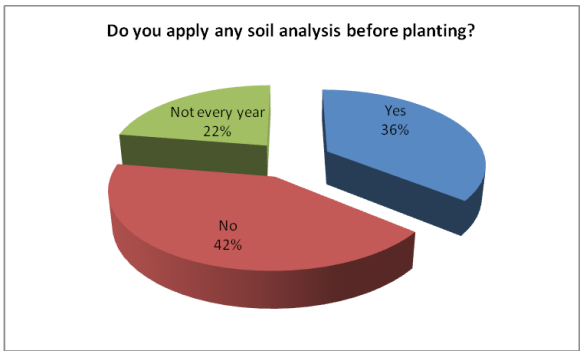

Figure 5. Frequencies of the answers for the 4thquestion

Our fifth question aims to learn where the producers provide their fertilizer. The results are seen in Figure 6 below and answers are quite close to each other. According to the answers given, 51% of the producers prefer to provide fertilizer from private companies, whereas 49% prefer to provide from agricultural credits.

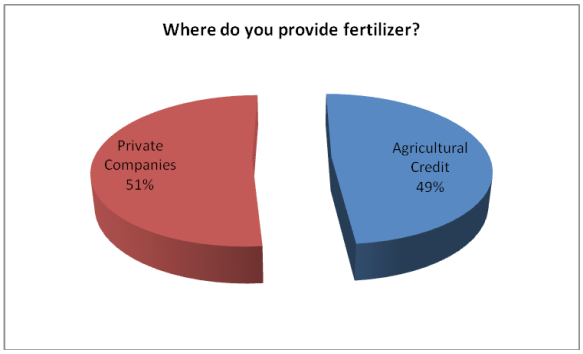

Figure 6. Frequencies of the answers for the 5thquestion

One of the main components in paddy cultivation is pesticides. So, we tried to analyze the pesticide preferences of our rice producers and asked them where they provided their pesticides. There are 3 different answers as seen in Figure 7 below and top 2 answers are very close to each other. According to the answers, producers choosing to provide pesticides from private companies are 40% and producers choosing to provide pesticides from Chamber of Agriculture are 37%. The rest 23% are choosing to get pesticides by agricultural credits.

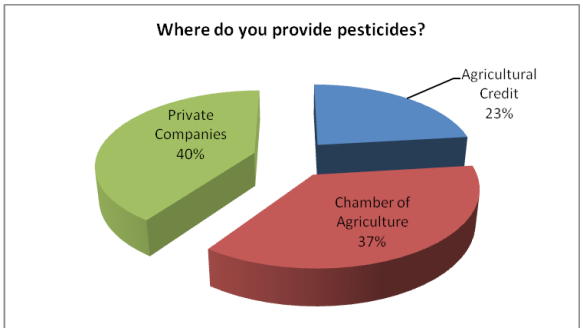

Figure 7. Frequencies of the answers for the 6thquestion

The 7th question is an important question and aims to understand where producers consult for the use of pesticides. Hopefully, the results are not terrifying as the question about soil analysis. When we look up the answers given as seen in Figure 8, we can see that producers mostly choose to get professional support from professional persons or institutions. Producers choosing to consult agricultural engineers are 42% and producers choosing to consult either Chamber of Agriculture or District Directorate of Agriculture are 44%. These all are professional supports. Only 10% of the answerers declared that they consulted their friend.Unlike the answers about soil analysis, we can say that producers behave professionally in the use of pesticides.

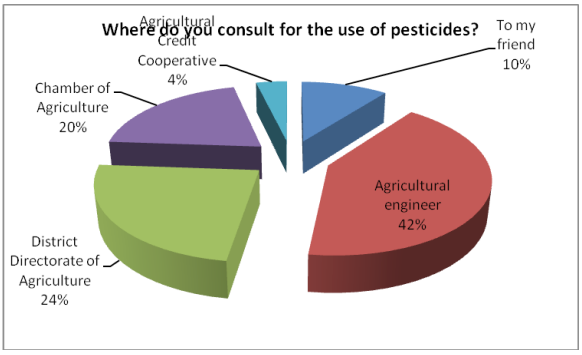

Figure 8. Frequencies of the answers for the 7th question

In Figure 9 below, we can see the answers about the question "Do you have any problem with the effectiveness of herbicides?" as a pie chart. Bad news is, most of the answerers, with the rate of 78%, replied "Yes". This shows us, ineffectiveness of herbicides is a big problem for rice producers in İpsala District. In order to understand the matter in details, we asked another question (the 9th question) about herbicides.

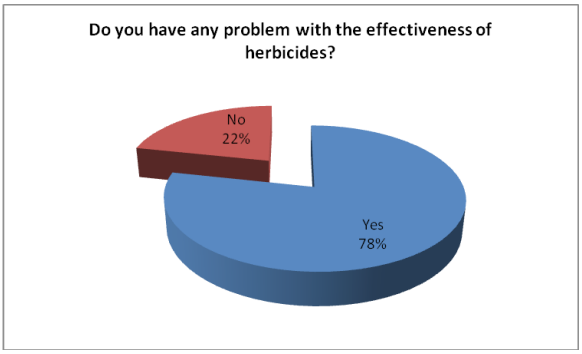

Figure 9. Frequencies of the answers for the 8thquestion

In the 9th question as seen in Figure 10 below, we tried to learn which weeds producers cannot control with the herbicides sold in the market. Most popular answer is "white millet" with the rate of 59%. Other answers are close to each other. So, when we analyze the answers of 8th and9th questions in the same pot, we can see that 78% of the producers have important problems with the effectiveness of herbicides and 59% of them have problem with white millet. This shows that white millet is the main factor leading herbicides to be ineffective.

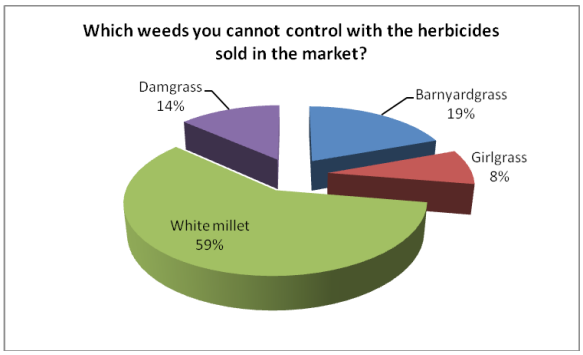

Figure 10. Frequencies of the answers for the 9thquestion

As last question, we wanted to learn which pesticide method our producers prefer to use on rice cultivation and results are shown in Figure 11 below. According to the answers given, producers mostly choose to use plane (62%) rather than iron wheeled tractor (18%). Other options (back pump and pulverizator) are equal to each other with the rate of 10%.

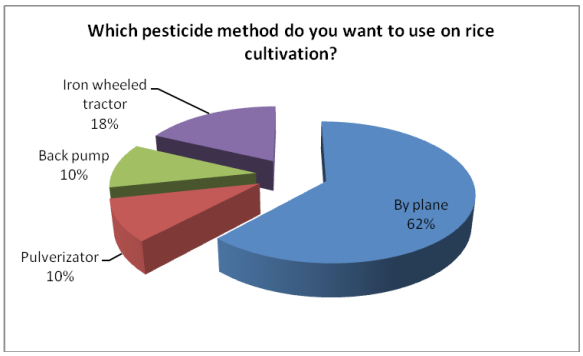

Figure 11. Frequencies of the answers for the 10thquestion

CONCLUSION

İpsala District is a very important agricultural region with fertile lands, wide natural water resources and this region is famous with especially paddy cultivation. Rice production is the most important economic activity of the region and people living in İpsala District generally works in rice cultivation (either in own lands or not) or in rice milling factories. In paddy cultivation, fertilizer and pesticides used are very important for the quality of the rice. So, in this study, in order to examine fertilizer and pesticide preferences of rice producers living in İpsala District, some questions were directed to the producers and an economic survey was applied.

The first question is about the financial capacity of the producers and aims to learn how producers finance their fertilizer purchase. Farmers and producers living in İpsala District is generally known rich since rice production is relatively more profitable than other agricultural activities. However, we see that only 38% of the answerers finance fertilizer by cash. This shows us, financial power of producers in İpsala District are either not good as thought or good but getting worse. In our second question, we learn that most of the producers use only 20.20.0 fertilizer itself or 20.20.0 with urea for the soil before planting. And for surface nitrogen fertilization, as learned from third question, very big percentage of producers (88%) prefer to use ammonium sulfate. In our 5th and 6th questions, we see that producers do not have any common place for provision of pesticides and

fertilizer. There are two main places that producers choose to provide fertilizer: Private companies or Agricultural Credit Cooperative, and the ratios of these two options are nearly equal (51% and 49%, respectively). Private companies are also ahead in pesticides provision (40%) but this is not a significant primacy since Chamber of Agriculture follows it with the rate of 37%.

Soil analysis is very important process not for only paddy cultivation but for all agricultural activities. However, according to the answers given, we see that only 36% of the producers prefer to apply a soil analysis before planting, while 42% does not prefer and the rest 22% applies such an analysis but not every year. This situation is, undoubtedly, a big problem in terms of professionalism. Fortunately, same producers do not behave unprofessionally in the use of pesticides and they consult professional persons or institutions to get information about the issue. Those saying "I consult my friend" are only 10%. One of the main problems is the ineffectiveness of herbicides. Only 22% of the producers are happy with the effectiveness of herbicides while 78% are dissatisfied. It is understood that, herbicides are not successful as desired in controlling the weeds, especially white millet, since 59% of the answerers declared that they could not control white millet. Rice is a very important agricultural product and also an important economic opportunity for producers. So, the problems in rice production should be determined and eliminated immediately. Lack of soil analysis before planting is a very important problem affecting productivity. Likewise, ineffective use of herbicides is decreasing both productivity and quality of the product. So, government should hold conferences with broad participation to educate rice producers on both soil analysis and use of pesticides, herbicides, etc. and should try to gain the most effective result in both production numbers and productivity.

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