



The Pesticide Using Habits Of Red Pepper Breeders In Islahiye And Nurdağı Districts Of Gaziantep Province And Attitudes Among The Environment

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Abstract

Until the early 80s, all around the world and especially in the developed countries increasing yield per unit area and thus lowering the expenses has been the major policy objective. However, the direct and indirect effects of intensive usage of inputs on natural resources became a major concern for both the environment and public health by 80s. Conscious and proper usage of pesticides enables the user to destroy the pests and weeds whereas the unconscious usage harms beneficial insects, microorganisms, plants, water supplies and even public health. The aim of this study is to identify the pesticides usage habits of chili pepper breeding farmers of Islahiye and Nurdağı, where the all chili pepper planting area is located and meanwhile investigating the attitudes among the environment. To do so, a survey is constructed and applied via interviews and data obtained is analyzed via the use of proper statistical package programs and the results are interpreted.

Key Words: Red Pepper, Pesticide, Environment, Gaziantep

Özet

Dünyada özellikle gelişmiş ülkeler başta olmak üzere, bütün ülkelerde 1980'li yılların başlarına kadar tarımsal üretimi, birim alan verimini yükselterek artırmak ve bu yolla üretim maliyetini azaltmak, başlıca tarım politikası hedefi olmuştur. Ancak yoğun girdi kullanımının doğal kaynaklar ve insan sağlığı üzerindeki doğrudan ve dolaylı olumsuz etkileri, 1980'li yıllardan sonra gelişmiş ülkelerden başlayarak bütün dünyada en önemli kalkınma ve çevre sorunu olarak ortaya çıkmıştır. Zira ilaçların bilinçli ve yerinde kullanımı, hedeflenen zararlı böcek ve yabancı otların yok edilmesini sağlarken, bilinçsiz kullanımı ise faydalı böcekleri, mikroorganizmaları, bitkileri, suyu ve hatta insan sağlığını olumsuz etkilemektedir. Bu çalışmanın amacı Gaziantep ilinde üretilen toplam kırmızıbiberin tüm ekim alanlarına sahip olan Islâhiye ve Nurdağı ilçelerinde kırmızıbiber üreten çiftçilerin pestisit kullanım alışkanlıklarının tespit edilmesi ve aynı zamanda çevreye karşı tutumlarının belirlenmesidir. Bu amaç doğrultusunda hazırlanan anket formları söz konusu ilçelerde yüz yüze yapılan görüşmelerle uygulanmış ve veriler uygun istatistik paket programlarında analiz edilmiş ve sonuçlar yorumlanmıştır.

Anahtar Kelimeler: Kırmızı Biber, Pestisit, Çevre, Gaziantep

Introduction

It is impossible to boost agricultural production proportional to population increase. The major impediment of boosting agricultural production is soil factor. Boosting agricultural production with fixed soil capital is only possible with increasing yield per unit area. Increasing yield per unit area is due to the usage of intensive agricultural applications such as utilizing certified seeds, fertilization, struggling with diseases and pests, irrigation, soil processing and hoeing (Demircan and Yılmaz, 2005).

Intensive agriculture became partially successful after policies derived in time, breeding high yield species and especially to the transaction

to irrigated plantation (Yıldız, 2009). For many years the usage of conventional agriculture in large fields, the utilization of mono culture agriculture principles and intensive use of chemical synthetic pesticides and fertilizers revealed severe threats for both human health and the environment. All of these adverse effects led the development of less harming agricultural principles in especially Europe and America (Ateş and Uygur, 2013).

Cultural, psycho mechanical, legal, biological, genetic, biotechnological and chemical approaches are being used in agricultural campaigns. As chemicals can act rapidly, breeders are more close to this part (Peker, 2012). Agricultural campaigns have some advantages such

as yield boosting, higher crop quality, better agricultural methodology, utilizing more flexible production times and fields (Olhan, 1997). However, the usage of pesticides in agriculture can bring some major problems for both public health and environment. The intensive usage of pesticides can result the residuals or the original pesticides on food, soil, water or in the atmosphere (Oğuz, 1996). It is an important issue that the whole world can act in the usage of pesticides in the agricultural systems and also their residuals as they can affect adversely the environment. Moreover, the fate of

the pesticide in field conditions and its effects on the environment can also be investigated after being licensed.

The planting areas in Kahramanmaraş are significantly being diminished in the recent years. The fields in 2004 and 2006 years were lower than 100 hectares. Especially after 2007, significant changes are observed in the planting area and the yield. A similar curve can be observed for Gaziantep. The planting area of chili pepper was 3400 hectares in 2014 whereas it was 2554 hectares in 2004.

Table 1. Chili pepper planting areas, production and yield in Kahramanmaraş and Gaziantep (Dried)

	Kahramanmaraş			Gaziantep			Turkey		
	Planting Area (da)	Production (ton)	Yield (kg/da)	Planting Area (da)	Production (ton)	Yield (kg/da)	Planting Area (da)	Production (ton)	Yield (kg/da)
2004	8910	3418	384	25540	10563	414	71610	21407	299
2005	11010	3750	341	25500	10512	412	78000	24154	310
2006	9400	2773	295	25500	14225	558	66960	25242	377
2007	10740	7430	692	24500	13230	540	71285	29597	415
2008	12384	7706	622	23863	12480	523	77747	31009	399
2009	12720	8344	656	31992	15420	482	91372	38275	419
2010	13720	9014	657	33710	14192	421	104049	68256	656
2011	4100	2616	638	29650	11860	400	91557	54018	590
2012	6337	3314	523	34702	11278	325	112677	55212	490
2013	14000	8470	605	34000	14722	433	112736	66176	587

Source: TÜİK, the data of 2014 for chili pepper are compiled by correcting the mistakes

Yield is boosted in the recent years. The yield increase is due to the climate, production techniques and planting high yield species. Maraş-1, developed in the Eastern Mediterranean Transaction Zone, Agricultural Research Center and Sena species are widely being planted in the region and provide a higher yield in bitterness and yield when compared to the other species.

In the research context in which the %80 of chili pepper is raised, the fluctuations are bound to some impediments such as; market values, holding off supporting purchases, aflatoxins in drying and processing, hygienic issues in processing and the attitudes of the firms among these issues (Akbaş et. al., 2012).

In this study it is aimed to measure the attitudes of chili pepper breeders in Gaziantep's districts, İslahiye and Nurdağı on pesticides usage habits and opinions about the environment. Besides these, the pesticides usage and attitudes of the breeders are analyzed. Within this context the present study will shed light to other studies in this context. Moreover, the present study deals with the environmental dimensions of pesticides usage and this makes it important. At the end of the study, some suggestions are derived about environmentally friendly production

methodologies according to the attitudes of the breeders.

Material and Methodology

The main material of this research is the data obtained from a survey conducted in Gaziantep province's İslahiye and Nurdağı chili pepper breeding farmers. The survey is conducted in 2013-2014.

The research is supported with secondary data. The sample of the study consists of 108 randomly defined enterprises. Although the sampling methodology was laminar random sampling method, the results of the study are interpreted altogether. Frequency tables are used in the interpretation of the surveys.

Research Findings

Results on pesticides usage habits and attitudes

Breeders use different data sources for struggling with pests and diseases. These resources are depicted in Table 2. A big deal of the breeders follow the suggestions of the dealers with %43.7, %32 follow the suggestions of the technical personnel of the agricultural directorate of the province or the district, and lastly %15,6 make their own way by following their own experiences.

Table 2. Data sources in agricultural pesticides choices

	n	%
Personal experiences and knowledge	16	15,6
Suggestions of relatives and neighbors	8	7,8
Suggestions of pesticides dealers	45	43,7
Suggestions of technical personnel of the agricultural directorate of the province or the district	33	32,0
Published materials (book, magazine, newspaper, leaflet etc.)	1	1,0
Total	103	100,0

The proper usage of pesticides is utmost important for the control of environmental pollution. Another important issue is the dose and the methodology of the pesticides user. The data resources for the dose are shown in table 3. According to the table %51,9 of the breeders follow the suggestions of the dealers, whereas %23.1 follow the advice of the technical personnel of the agricultural directorate of the province or the district and %11.6 choose the dose written on the package.

Table 3. Data sources in defining the dose of the pesticides

	n	%
The instructions on the package	12	11,6
Personal experiences and knowledge	8	7,7
Suggestions of relatives and neighbors	6	5,8
Suggestions of pesticides dealers	54	51,9
Suggestions of technical personnel of the agricultural directorate of the province or the district	24	23,1
Total	104	100,0

Table 4 depicts the perceptions of the breeders on the dose they apply. %71.4 claim that the dose applied on the crop is right, whereas %26.7 agreed that it is less. Chili pepper breeders find themselves adequate in awareness on pesticides usage with %39, %33.3 thinks partially and lastly the remaining %27.6 agreed to have little knowledge (Table 5).

Table 4. The state of the dose applied

	n	%
A little	28	26,7
Normal	75	71,4
A lot	2	1,9
Total	105	100,0

Table 5. Awareness for adequate knowledge on using pesticides

	n	%
Yes	41	39,0
A little	29	27,6
Partially	35	33,3
Total	105	100,0

Environmental Awareness

Under this headline, chili pepper breeders' perceptions on the harms of pesticides to the environment and the results are depicted in table 6. According to the table %53.8 of the respondents claim that pesticides don't harm the environment and %29.3 agreed that they harm the environment.

Another issue which is as important as environmental health is the human health and the residuals of the pesticides used on the crops. Table 7 and 8 investigate the perceptions and attitudes of chili pepper breeders on pesticides residuals and its effects on public health. According to table 7, %46.2 of the breeders believe that the pesticides residuals don't harm human health, whereas %32 agreed that they can harm. Moreover, %21.7 of the respondents have no idea on this issue. According to table 8 %42.9 of the sample have no idea about pesticides residuals, also %24.5 think that it can be resolved by washing and the remaining %24.5 agreed that some pesticides have no residuals.

Table 6. Harming of pesticide residuals on environment

	n	%
Yes	31	29,3
No	57	53,8
I Don't Know	18	17,0
Total	106	100,0

Table 7. Harming of pesticide residuals on human health

	n	%
Yes	34	32,0
No	49	46,2
I Don't Know	23	21,7
Total	106	100,0

Table 8. The opinions on residuals of pesticides

	n	%
The residuals of pesticides can be resolved by washing	24	24,5
Pesticides have no residuals	8	8,2
Some pesticides have no residuals	24	24,5
I have no idea on pesticides residuals	42	42,9
Total	98	100,0

The evaluation of pesticide packages after being used is an important issue for both human health and environment. The chemicals included in the packages can be mixed into surface or spring water and can cause environmental problems. Chili pepper breeders agreed that they burn the package after using it with %43.3, whereas %31,7 claim that they throw away them randomly and %15.4 mentioned that they put them in the rubbish after packaging them (Table 9)

Table.9. The evaluation of packages after using the pesticides

	n	%
I throw away the package randomly after using the pesticides.	33	31,7
I burn the package after using pesticides	45	43,3
I burry the package after using pesticides	10	9,6
I put the package in the trash in a bag after using pesticides	16	15,4
Total	104	100,0

Conclusion

Gaziantep is first to produce chili pepper as a spice in Turkey. The present study aims to identify the habits of chili pepper breeders mainly in Islahiye and Nurdağı on usage of pesticides and also their attitudes on environment. The results of the study revealed that %43.7 of breeders utilize pesticides according to the suggestions of the pesticides dealers. These results are similar to

Tanrivermiş (2000)'s study conducted in Middle Sakarya Basin as he concluded that %47,5 of the breeders follow the suggestions of the dealers, whereas %15 act with their own experiences, %21,2 follow both their experiences and the suggestions of the dealers.

The breeders in the context think that the pesticide residuals can be resolved by irrigation with %24,5. Whereas %24,5 think that pesticides have no residuals and even worse %42.9 have no idea about pesticides residuals. These results indicate that the chili pepper breeders in the context have little or no idea about pesticides residuals. It is a fact that the pesticides residuals are a major concern of food exports of Turkey. Thus, the issue of pesticides residuals can be approached minutely and the problem can be inhibited in the production process. Otherwise, the return of goods can affect the expenses reversely.

In some breeding firms %31.7 of the breeders throw away the package randomly after using pesticides and %43.3 agreed that they burn them. Demircan and Yılmaz (2005) have similar results as they found out that %42.20 of the breeders throw away the packages randomly after using pesticides in a study conducted in Isparta. Disposal of pesticides packages is an important issue as they can be harmful for both environment and public health. These packages can be recollected by dealers by offering deposits or more pesticides or seeds or even they can be collected in recycling boxes in the fields.

In conclusion, a severe lack of training emerges in Gaziantep province's Islahiye and Nurdağı districts on usage of pesticides. Rapid and handy training programs should be planned immediately. With the increase in the training applications and enlightening of the farmers, environmental pollution can be inhibited and healthy crops can be obtained.

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