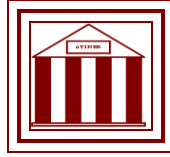


Athens Institute for Education and Research

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**General Status of Mushroom
Production Buildings and View of the
Neighboring Families Mushroom
Production Buildings – The Case of
Korkuteli**

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Abstract

In this study, the current situation of enterprises engaged in mushroom farming which damages the environment and production building, mushroom production facilities of the manufacturer's view of families and the neighboring state of health effects have been studied in Korkuteli district of Antalya Province. For this purpose, mushroom farming of the 134 enterprises were selected which is also to determine the effects of production facilities neighboring to these enterprises.

Korkuteli is mushroom cultivation and compost production center of Turkey's cultural state. Approximately 50% of fresh mushroom production in Turkey and more than 50% the production of compost takes place in Korkuteli. Result of this research, 70.1% of the farmers', they think that cultivation of mushrooms any harm the building. Vast majority of producers reported that any illness undergone after the start of production. Business owners said they are suffering from leg and arm pain due to the fact that constantly working with humid environment. In a survey study of the neighboring families, 59.7% of people think that the facilities are not damage themselves. Adjacent to the damaged from facilities 73.1% of families' said they are uncomfortable odor emitted from the production facility.

Keywords: Mushroom Production Buildings, Korkuteli, Mushroom (*Agaricus bisporus*)

Corresponding Author:

Introduction

The production of culture mushroom which is an alternative food with its high nutrient value has started in the world in the 1800s and in our country during the 1960s. The world culture mushroom production is 3.4 million tons 33% of which is carried out in EU countries, 51% in Asia, 10% in USA and the rest in other countries. Annual production in China is about 1.6 million tons whereas this value for EU countries is 1.1 million tons. Even though the annual culture mushroom consumption per person in Turkey is about 500 gr, this ratio exceeds 2.5 kg annually in EU countries (Şen and Yalçın, 2010).

Recently, culture mushroom production has developed rapidly in our country and the production amount which was 750 tons in 1982 reached about 22000 tons in 2010 (TUIK, 2011). In our country culture mushroom production is carried out widely in the Mediterranean, Marmara, Central Anatolia and Aegean Regions whereas it is not common in the Black Sea and Southeastern Anatolia regions where the production amounts are really low (Erkel, 1992; Şen and Yalçın, 2010).

Korkuteli is the cultural center of Turkey in terms of culture mushroom and compost production. About 50% of fresh mushroom production of Turkey and more than 50% of compost production is carried out in Korkuteli (Özçatalbaş, 2011). The economic development of the district is fairly recent. Development has increased drastically after 1960 when fruit growing started and the irrigation dam was built. In parallel with these developments, modern housing has commenced in the district center along with its towns and villages. Houses that are in the form of traditional country cottages are demolished to be replaced by multi-storey concrete residences. Touristic activity that increases in Antalya during the summer months also increases in the district (Anonymous, 2011).

Culture mushroom production is carried out in family owned facilities. Small businesses collect mushroom and sell them to large wholesalers which then export these products. This type of production has various negative sides while contributing to the economic development of many families. Families who wish to carry out mushroom production turn their cellars, attics, barns or coal cellars into mushroom production facilities which is very unfavorable. The ambient moisture is high in mushroom production facilities and temperature changes may occur inside the facilities due to seasonal changes and air temperature. This in turn has negative effects on both the building and human health. In addition, the smell coming out of these facilities is one of the most important negative aspects.

Caves, tunnels, basements, cellars, stables used for making mushroom production in the form of family-run places like this production sites there is no comparison with modern manufacturing facilities (Gunay, 1995; Agaoglu and Ilbay, 1989). Mushroom production can be made commercially and economically, with the establishment of modern mushroom farms (Demir and Uzun, 1998).

One of the most important problems that many countries' mushroom producers have is to cool down the temperatures of the production rooms during summer months. However, the air conditioning units are very expensive; and the small and medium scale producers do not have these air conditioning units (Guler et al., 2006).

The objective of this study is to determine the general status of mushroom production facilities, behavior of producers regarding mushroom production and the opinions of neighboring families about mushroom production facilities.

Material and Method

The study was carried out in the current mushroom production facilities at the Korkuteli district of Antalya where about 50% of Turkey's mushroom production takes places with surveys given to families neighboring such facilities. 134 mushroom production businesses operating in the Korkuteli district have been selected within the scope of the study 134 families neighboring these facilities were selected and their opinions regarding mushroom production were tried to be determined.

Arithmetic averages and percentile calculations used during the evaluation of data obtained via surveys were emphasized as graphs using MS Excel software.

The general status of mushroom production facilities in the region along with the opinions of families neighboring these facilities have been examined.

Results and Discussion

Mushroom production in the district of Korkuteli has started during the 1970s in parallel with the production in our country. The recent production amounts for mushroom in Korkuteli have been given in Table 1.

Table 1. *Yearly mushroom production amounts in Korkuteli (TUIK, 2011)*

Years	Production Rate (Tonnes/Year)
2004	10000
2005	11560
2006	12000
2007	11920
2008	12000
2009	12000
2010	12000

Surveys carried out on producers

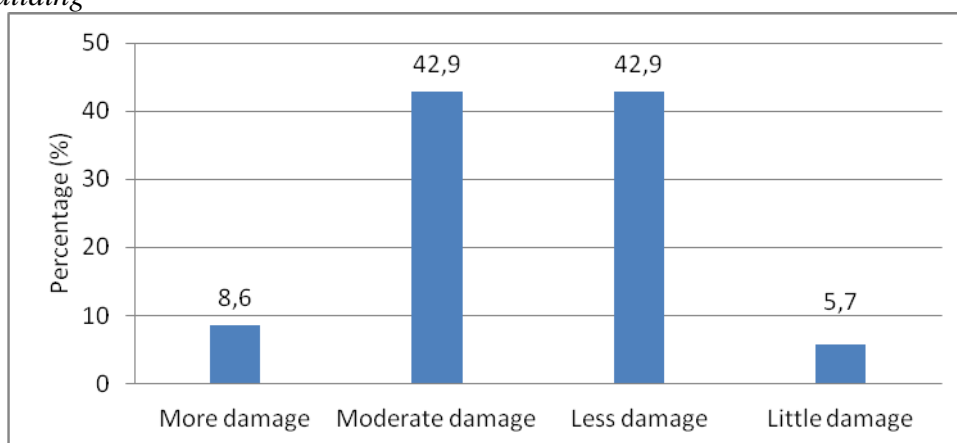
97 of the producers surveyed (72.4%) were male and 37 (27.6%) were female. When the age distribution of the business owners are examined it is observed that the age interval 36-50 has the highest number of participants with a ratio of 46.3%. Whereas producers aged 51 and above comprise 25.4% of the total participants. Participants between the ages of 18-35 comprise 28.4% of the total participants. An important problem in the region according to the producers is the low interest of young people in mushroom production.

When the education levels of the producers are examined, it is observed that 64.9% are primary school graduates and the fact that there is no university graduate among the producers shows that there is a need for producers with knowledge and experience who can adjust to the technological developments in mushroom production.

Surveys conducted have shown that 43.3% of the producers continue production in addition to their real jobs. Whereas 27.6% are housewives and only work in mushroom production. Over 50 % of the producers have incomes besides mushroom production. It has been determined that a great portion of the producers (85.1%) have produced mushrooms since 1-10 years. Thus, it can be stated that the experience of mushroom producers is at most 10 years. 70.1% of the participants believe that mushroom production does not harm the mushroom production plant. In addition a 25.4% portion believes that production harms the facility, humans and the environment. Therefore, the majority of producers have stated that mushroom production has no harmful effect on the building.

The opinions about the effect of the damage taken from producers who believe that the building is harmed have been given in Figure 1.

Figure 1. *Level of damage inflicted during mushroom production on the building*



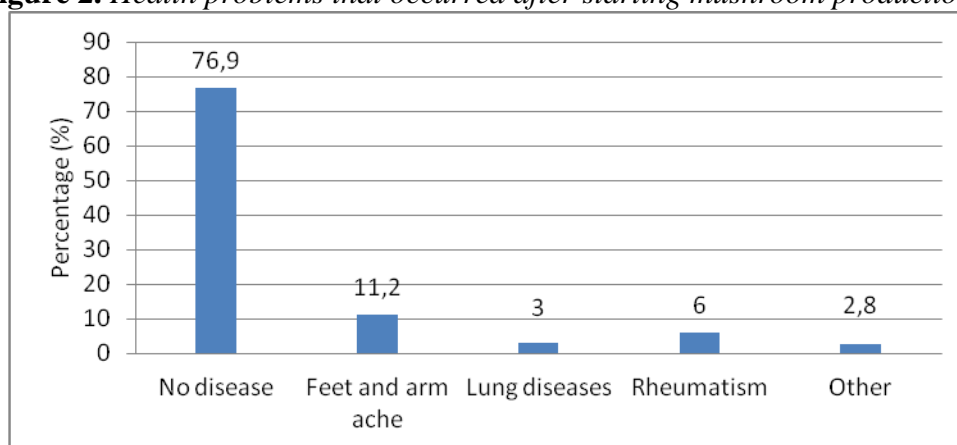
Among the producers who believe that mushroom production harms the building, 8.6% consider this damage to be high, 85.8% consider it to be moderate to low and whereas 5.7% consider it to have very small effects.

When producers were asked about the type of damages that mushroom production makes on the facility, 13.4% replied with odor, 6.7% with change in temperature, 3% with environmental pollution and 3% mentioned health problems associated with mushroom production. 73.9% of the producers have not answered this question. It has been determined that a large portion of business owners have no idea about the harmful effects of production on the facility.

Whereas routine income of the region is fruit production and animal rearing, mushroom production has started to develop in recent years due to the increasing amounts of mushroom production. Since materials used for production form new work areas, the district has employment opportunities. According to the study, the development of the district with income from mushroom production is not possible for now since a large portion of the producers carry out production on the side.

Mushroom production is carried out in moist conditions and high amounts of moisture cause health problems in humans. According to studies carried out, 76.9 % of producers have stated that they are not harmed by moisture (Figure 2).

Figure 2. Health problems that occurred after starting mushroom production



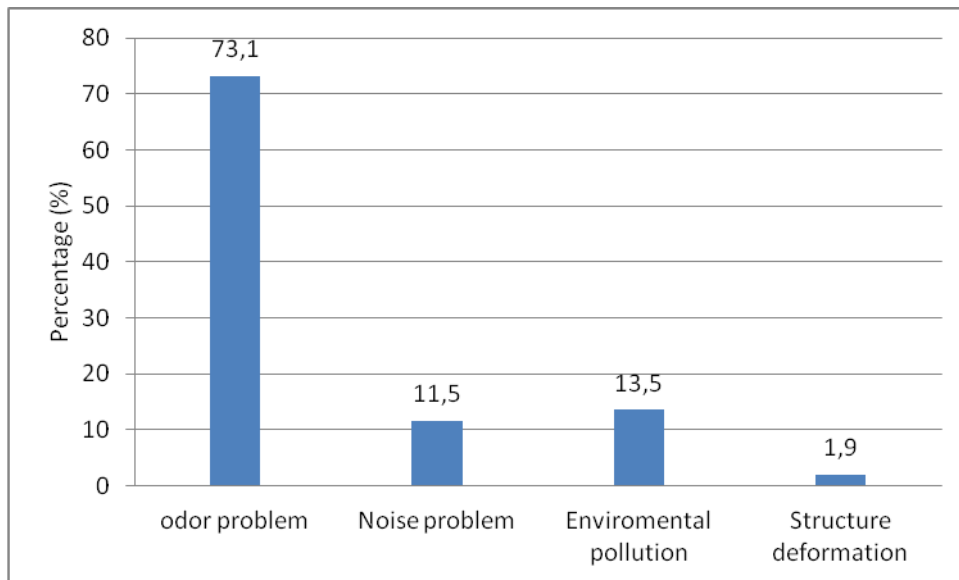
Majority of the producers have stated that they have experienced no health problems after starting mushroom production. On the other hand, 48.4% who have experience health problems stated that they suffer from feet and arm ache whereas others have complained about rheumatism, lung problems etc.

Surveys carried out on neighboring families

64.9% of the participants are female and 35.1% are male. Those with ages 51 and above comprise 52.2%. The education level is primary school for 51.5% for those who have participated in the study. Only 17.1% of the participants are graduates from high school and above. 68.7% of the participants have stated that they have been living in the same building for over 10 years.

The ratio among the participants of those who believe that mushroom production has no harmful effect on their production facilities is 59.7 %. In addition, it has been stated by 38.8 % that the facility has harmful effects for them. The opinions of all families who have been harmed have been given in Figure 3.

Figure 3. *Reasons of complaint of neighboring families due to mushroom production*



According to the study, 73.1% of those who have been harmed complain about the bad odor of the facility. Since mushroom is produced in moist environments by letting it rot, it has been stated that there is a bad odor and that in some facilities that have not been isolated properly this odor can diffuse. In addition, 13.5% think that the facilities cause environmental pollution and 11.5% complain about the noise that occurs during entry to and exit from the building. The ratio of those who believe that it harms the building has remained at 1.9%.

Mushroom production is carried out at high capacities in the district and when asked if this is enough for the development of the district 40.3% think that production is enough for development. 36.6% think that production is not sufficient whereas 23.1% have stated that they have no idea.

Conclusion

Mushroom production will be an important source of income in the region if mushroom production facility owners have sufficient knowledge about mushroom production and only work in this area. In addition, business owners who make production should take precautions about the building and their health. Especially buildings should be isolated with moisture resistant material.

If this is not the case moisture will have negative effects on the strength and resistance of the building. In addition, producers will have taken precautions about diseases that can occur in the future if they wear moisture protective clothing. People working at mushroom production facilities can be harmed by moisture and those who work in moist environments for a long time may cause diseases in the future.

Producers suggest the ambient moisture in the beginning as 90-95% and as 70% during harvest. It is a fact that moist environments will harm both the building and human health. In conclusion, mushroom producers should take precautions both for the buildings and their health.

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