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RESEARCH ARTICLE

CAUSES OF LOW YIELD IN BEE PRODUCTS IN OSMANIYE, TURKEY.

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Abstract

The purpose of this research is to develop solutions by identifying the causes of low productivity of bee products produced in Osmaniye. For this purpose, 107 beekeepers registered to Osmaniye Union producers were interviewed. According to the findings, it was determined that people involved in beekeeping in Osmaniye were largely with low levels of education at an average of 49 years of experience in beekeeping and they dealt with beekeeping for 11 years. Honey yield per hive in beekeeping business in Osmaniye is approximately 13 kg. The most important causes of yield loss are technical information failure, excessive colony, diseases and parasites, and the use of non-standard material. In order to increase yields first, the level of knowledge should be increased by presenting educational programs. It must therefore be concentrated on agricultural extension activities. The union that is the member in training activities should take an active role.

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Introduction:-

Beekeeping is the activity of producing live material such as mother bees, sons, package bees by using bees and effort and current beekeeping important income components of honey, pollen, royal jelly and propolis that the humans don't stop using them for health protection and cure. (Fıratlı ve Ark., 2000). Beekeeping is an agricultural activity that can be done without referring to land and less costly contributing to other crop production through the pollination activities. Tens of thousands of years ago that people lived in caves life, the son that nested in the nest cavity trees and rock cavities were utilized the honey. In the last few centuries ago, beekeeping done primitive for a long time development process has survived until the present day beekeeping in the light of many scientific discoveries and development. (Talu, 2004).

Beekeeping activities that made in the world and in our country for centuries can be made widely due to having different climatic conditions of our country and our country's growing $\frac{3}{4}$ of plant varieties grown throughout the world. Because of these characteristics of our country, it contributes to the production of bee products of different quality. Moreover, as the beekeeping can be done concurrently with other agricultural activities, it is becoming increasingly important in terms of providing additional income for those involved in agricultural activity.

According to FAO data; by the year 2012, the world has 80,513,551 total beehives and it produced approximately 1592701 tonnes of honey from this hive. The yield is 19.781 kg per colony in the world. Colonial presence in Turkey is 6348009 and honey production is 88 162 tons. The yield is 14 kg per colony. Turkey constitutes 9% of the bees being in the world and 5.5% of the honey produced. Although it is quite a good level in terms of our presence in the country colony, productivity is very low in our country. There are many different phenomena that cause yield loss. Talu has stated those as follows: lack of technical knowledge, lack of care and feeding, lack of to meet the needs of the production of queen bees, ignorance in wintering, unable to know the ease and pests and inability to timely diagnosis and treatment are the major effects. With 77024 colony about 913 tons of honey are produced in Osmaniye. (TUIK, 2014). Beekeeping, especially in recent years began to be widely used in Osmaniye.

The purpose of this study is to determine the cause of low productivity in the production of bee products produced in Osmaniye and generate solutions.

Materials and method:-

The population of the study constitutes the beekeepers registered to Beekeepers Association in Osmaniye. The sample size of the study is determined by the method "Simple Random Sampling" and data is collected from the questionnaires distributed to 107 beekeepers. Consistency with each of the statements in the questionnaire and what extent reflects the scale of the problem, namely reliability was tested with Cronbach Alpha internal consistency coefficients and reliability coefficient was found to be 0.673 shows that the scale is sufficiently reliable.

Research findings:-

The average age is 49 for people dealing with beekeeping activities in Osmaniye. Among beekeepers participated in the survey, 33% of them are secondary school graduates, 26.2% are primary school graduates, 20% of are high school, and 14% are university graduates. On average, the year to deal with beekeeping is 11. 71% of respondents deal with nomadic beekeeping while 29% of them deal with fixed beekeeping. While 55% of nomadic beekeepers do stroller beekeeping to do more production, others do migratory beekeeping due to some reasons such as short flowering period of the region and providing variety in production. 21% of those who do migratory beekeeping change place three times while 18% of them change place two times. In businesses, the average colony number is 115 and this is above the average of Turkey (83 colonies). 55% of beekeepers aren't dealing any agricultural activities except for beekeeping. The remaining 45% of them do another activities apart from beekeeping to meet the needs of the beekeeping activities (33%), provide additional income (22%) and be a family business (19%).

While all the beekeepers participated in survey make honey production, 67% of them honey wax, 24% of them pollen, 15% of them royal jelly, 35% of them bees, 17% of them propolis, 46% of them queen bee, 14% of them bee venom production. The causes of beekeeping is listed as; done conventionally (34%) the price to be satisfactory (24%), ease of production (22%), the scarcity of demand (16%). 39% of beekeepers who fail to provide the necessary material and 35% , lack of information and experience, cannot produce some bee products. 94.3% of beekeepers produce filtered honey, 37% of produce both filtering and honeycomb, 19% of them produce filtered- - karakovan-honeycomb honey, and 14% of them produce only filtered honey. Beekeepers prefer the honeycomb honey production for various reasons; 43% of them state that consumers prefer it, 20 % of them state that filtered honey production gets more time and labor, 17 % of them sate that the price of filtered honey is more than honeycomb. 30% of beekeepers makes karakovan production.

The cause of karakovan honey production of beekeepers in Osmaniye is the marketing facilities and the high price. While 48% of beekeepers stated they receive annually less than 1,000 kg of honey, 36% of them stated that they receive between 1000 to 2000 kg of honey. In the beekeeping business, the average annual honey production is around 1200 kg. As a result of a research, the average yield per hive in Osmaniye was approximately 13 kg. Vural and Karaman (2010) found the yield per hive as 26,28 kg in Bursa; Ören, et al (2010) as 19,76 kg in Adana; Kılıç (2004) as 18,1 kg in Erzurum; Soysal ve Gurcan (2005) as 15 kg in Tekirdag.

While Yield per hive in Bursa, Adana, Erzurum and Tekirdag above Turkey average, it is below Turkish average in Osmaniye. Beekeepers stated the causes of yield loss due to the lack of technical knowledge (78.5%), excessive strains (74.8%), diseases and parasites (72%) and the use of non-standard materials (71.9%) (Table 1). Erkan and Askin (2001) states that one of the factors that affect the quality and efficiency of beekeeping most is beekeeping instruments. The study of Ezekiel et al (2013) that was done in Nigeria states the reasons of the lack of production of honey beekeepers as lack of capital, inadequate equipment, lack of enough land utilization, to work with unsuitable bees, and lack of technical expertise.

Table 1. Causes of low productivity per hive

	I absolutely agree		I agree		I don't have any decisions		I don't agree		I am strongly disagree	
	f	%	f	%	f	%	f	%	f	%
Lack of technical information and training	47	43,9	37	34,6	6	5,6	14	13,1	3	2,8
Use of non-standard materials	27	25,2	50	46,7	10	9,3	18	16,8	2	1,9
Wrong beekeeping practices	32	29,9	37	34,6	19	17,8	17	15,9	2	1,9
giving many sons of colonies	31	29,0	37	34,6	17	15,9	20	18,7	2	1,9
placing too many colonies In the same field	49	45,8	31	29,0	12	11,2	12	11,2	3	2,8
Improper use of queen bees	38	35,5	28	26,2	15	14,0	22	20,6	4	3,7
inadequate / incorrect struggle with parasites and diseases	42	39,3	35	32,7	13	12,1	8	7,5	9	8,4
The genetic material	34	31,8	34	31,8	18	16,8	15	14,0	6	5,6

When faced with production problems, 53.3% of Beekeepers stated that they received support from experienced beekeepers and 31.8% of them stated that they had received support from the Union of Beekeepers. Beekeepers have several requests from organizations and institutions interested in beekeeping. These requests; to realize the purchase of products (26.2%), dissemination of innovation (18.7%); consumer awareness (17.8%); to make credit applications and reduce bureaucratic procedures (15%). Beekeepers receive honey, propolis, royal jelly during the production season, depending on the natural conditions folded into various difficulties and then can marketing of their products is one of the most important factors affecting the continuity of production.

While 56% of beekeepers state that natural honey cannot find the customer of the value it deserves, 42% of them stated that 10-20% of honey production was made with added sugar.

While Approximately 80% of the produced honey allocated to sales, the remaining part is allocated to the family consumption. 33.6% of the Produced honey is sold to the merchant, 32.7% of it directly to consumers, and the remaining portion to the processor, exporter and the cooperatives by beekeepers. While The sale of produced honey, to a large extent, is done in September-October-November, the sales process is ongoing throughout the year. While Honey sale is held outside the business with the rate of 54.2%, 31.8% of it is held in the business and the remaining part is held both outside and inside the business. % 54,2 of Beekeepers stated that sell honey in cash, % 16,8 of them in term and the remaining both in cash and in term.

Results and recommendations:-

Beekeeping, having as well as the positive sides of without being dependent on land and at less cost, is an animal husbandry activity dependent on nature due to the life style of honey bees and the collection of raw materials directly from nature. Yield increase in beekeeping is carried out in some ways such as climate, the suitability of the region's vegetation and distribution conditions, and improving production methods. Honey quality will vary depending on the types of resources of pollen and nectar that honeys make use of.

71% of the interviewed beekeepers in Osmaniye make migration beekeeping. Yield is about 13 kg per hive on average in Osmaniye. One of the most important points to increase productivity is to increase the knowledge level of beekeepers in beekeeping. Various courses are organized on beekeeping, but these courses are given theoretically, the knowledge given is insufficient in practice technically. It must be carried out so as to give more weight to the implementation of the training. Manufacturers are consulting with an experienced beekeeper on the problems they encounter instead of technical personnel working in relevant institutions and organizations. This leads to making some wrong practices in the fight against pests and diseases. The relevant personnel should deal more closely with beekeepers and beekeepers need to increase their confidence for them. By Informing beekeepers it should be encouraged to use modern techniques. Various arrangements should be made in order that Beekeepers Association will support producers for certification, packaging and marketing of honey. For the support provided to beekeepers with the publications made by the Union, it is necessary to continue in terms of product diversity. Providing support for the honey forest projects started by the ministry of forests, the business association should be increased and

beekeepers should be increased sensitivity to these issues. Beekeepers should be supported by incentives by preventing the problems due to the honey import. In the fight against diseases and pests, towards the dose of antibiotic use and the use of time synchronization, the Union should work.

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