

CASE STUDY REGARDING BEEKEEPERS DYNAMIC FROM THE NORTH EASTERN REGION OF ROMANIA THAT ACCEDED TO ORGANIC AGRICULTURE SYSTEM

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Abstract

In Romania there is a tradition regarding beekeeping and in last years the focus was on organic beekeeping. This type of activity is quite easy to achieve in Romania because of a large number of areas favourable to organic beekeeping, especially hills areas, where pollution has failed to penetrate and destroy the natural environment. The present paper aimed to highlight the dynamics of beekeepers which are producing ecological honey during the period 2012-2014. To achieve the objective, the case study was carried out on beekeepers who are part of Beekeepers Association from Romania, Bacău subsidiary, association who has members from one of the areas of maximum performance in this domain. The study followed two directions: both number dynamic of beekeepers who acceded to organic farming system for each of the studied years, and the evolution of the beehives number in each exploitation from one year to another. As a conclusion, the results of this case study show growth trends for the number of beekeepers who produce organic honey, while the evolution of beehives number in the apiary is weather dependent and also dependent on the efficiency of preventive treatments applied.

Key words: beekeeping, honey, organic agriculture, Romania.

INTRODUCTION

Organic farming is an activity practiced since antiquity which led to the development of the great civilizations. Even if in those times the current word which refers to the organic system was not known, the agriculture was based on biodynamic principles kindly with the environment, very well known and forwarded from generation to generation.

“Agricultura ecologică” is a protected term assigned to Romania by the European Union in order to define a new direction of the nowadays agriculture, namely sustainable agriculture. This term is similar to “organic agriculture” or “biological agriculture” used by other Member States.

In Romania, organic farming is a dynamic sector which knew an ascendant evolution in the last period, both in vegetal and animal sectors. This thing is due to the intensive promotion of this concept, sustained first of

all by the European Union through Ministry of Agriculture and Rural Development, on one hand and to the increasing awareness by the consumers of the organic products’ quality on the other hand (Pocol, 2011).

Organic beekeeping is a branch of the organic farming and it represents an activity which in Romania can be easy performed due to the proper natural environment (Toncea, 2002).

In this manner, to convert a conventional apiary to an organic one it must be browsed through a conversion period by minimum 1 year, according to the legislation in force. In this period the existent frames should be replaced with new frames and the wax from these frames should come from organic certified apiary (Popescu, 2013). The main condition for the conversion of the apiary is the bees to have consistent sources of pollen in order to fill all the honeycomb existent in

the apiary (conventional honeycomb) and the new added frames to comply with the legislation in force regarding the organic farming.

In order to be considered finished the conversion period it will be presented proves certifying both origin of the wax used for the new frames and the purchased quantity.

In this context, the present article represents a case study which wants to highlight the evolution of the number of beekeepers from North-East of Romania which are members of Romania Beekeepers Association, Bacău subsidiary and which acceded to the organic farming system in the period 2012-2014 and, also to highlight the apiary evolution year by year.

MATERIALS AND METHODS

In order to analyze the dynamics of beekeepers which make the subject of this case study, there were used the following indicators: the number of beekeepers registered to the County Agricultural Directions for the geographical area taken for the study, the number of bee families and the quantity of honey obtained.

The period analyzed in this study was 2012-2014.

The data presented in this article comes from personal monitoring performed to onsite through annually and seasonally apiary visits, in the months in which the picking honey was performed: April, May and September.

The data obtained by personal monitoring was completed by information taken over from the Ministry of Agriculture and Rural Development and from SC Apicola Bacau SRL, they were statistically processed and interpreted, in this manner being able to highlight trends in this area for years to come.

RESULTS AND DISCUSSIONS

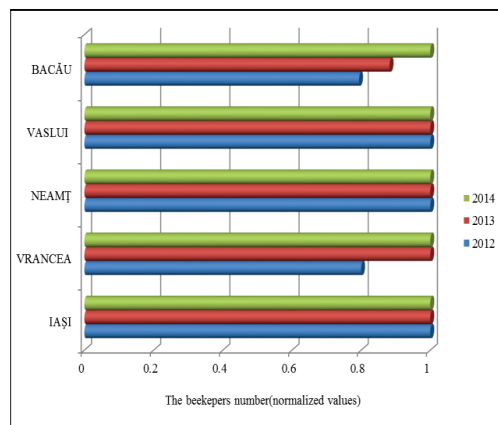
During this case study we monitored several aspects so that we can obtained a more realistic picture to the organic farming concept evolution of the number of beekeepers from North-East of Romania.

The first indicator analyzed in this case study is the distribution by county of beekeepers

which acceded to the organic farming for the period 2012-2014, and it was realized following two directions: the evolution of beekeepers number from each county for the three years and, also the evolution of beekeepers number from each county reported to the total number of beekeepers for each year took into study.

Thus, in figure 1 it can be observed the distribution by county evolution of beekeepers in the period 2012-2014. From this chart it can be observed that in all three years of study only in two counties the number of beekeepers is varying, namely Vrancea and Bacău, while for the other three counties the number of beekeepers is constant from year to year.

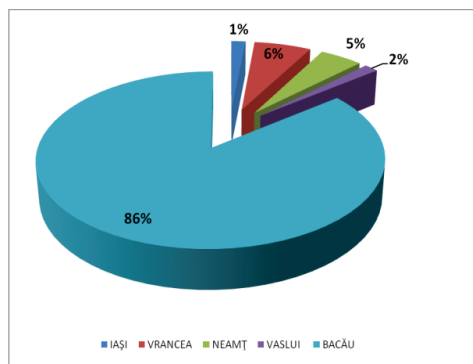
Figure 1. The evolution of beekeepers' distribution by counties of in the period 2012-2014



Regarding the percentage distribution by counties of beekeepers from North-East of Romania which make subject of this case study, it can be observed a linear evolution for the three years took in study.

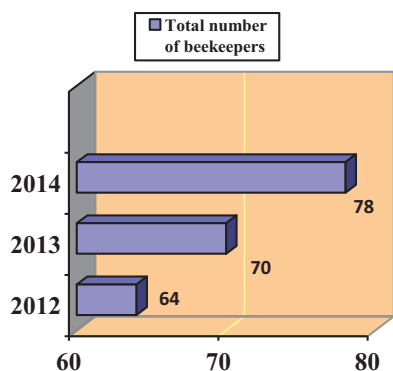
Thus, the most operators are from Bacău county, having a percentage of 86.2, followed by Vrancea county with an average of 6.63%, by Neamț county with an average percentage of 4.3 and by Vaslui and Iași counties with the same average percentage of 1.43 (figure 2).

Figure 2. Distribution by counties of beekeepers



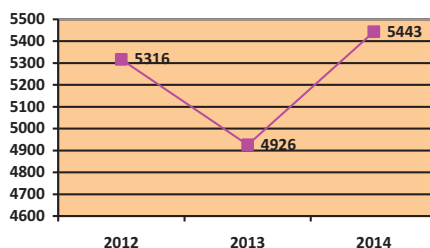
Another indicator analysed in this case study is the evolution of beekeepers total number and it can be observed an obvious growing trend for the period 2012-2014, like it results from figure 3. Thus, it was recorded an increase with 9.5% of beekeepers number in 2013 against 2012 and an increase of 11.5% in 2014 against 2013, fact which confirms the becoming greater interest of beekeepers from Romania to produce organic honey.

Figure 3. The evolution of total number of beekeepers for period 2012-2014



For studying the evolution of bee families' number, from the three years lists of beekeepers we selected only the beekeepers which remained in the organic farming system the entire period and we calculated the total number of organic or in conversion bee families (figure 4).

Figure 4. The evolution of total number of bee families



The values in above figure represent the total number of bee families for a number of 57 beekeepers.

In figure 4 we can observe that in 2013 the total number of bee families decreased against 2012 with about 7%, this decreasing of apiaries being due to the winter 2012-2013 unpropitious weather conditions when the bee families' mortality increased. Another cause is represented by bee diseases with the parasite *varroa destructor*, when the preventative treatments accepted by the legislation for organic farming wasn't successfully.

Regarding also the evolution of bee families' number it can be observed a significant increasing, with about 10% in 2014 against 2013, fact which leads to a growth trend of apiaries when the environmental conditions are friendly and the treatments prevents the apiaries diseases.

For create a more clearly image regarding the evolution of beekeeping in organic farming system, apart from the indicators presented till now, we monitored also the quantity of honey obtained for period 2012-2014 for the following categories: acacia honey, linden honey and polyfloral honey (table 1).

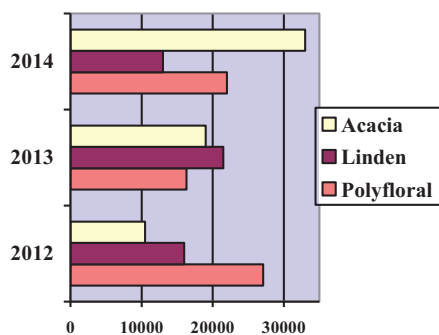
Table 1. The honey production assortments

Assortment (kg)/year	2012	2013	2014
Acacia	10500	19000	33000
Linden	16000	21500	13000
Polyfloral	27100	16300	22000

The honey production is presented graphically in figure 5 where we can observe a growing

of the acacia honey production from a year to another. It is known that acacia honey is the most appreciated assortment by the consumers due to the fact that the crystallisation phenomena is slower and due to its sensorial properties. In the same time, this assortment is the most expensive one, fact which is stimulating the beekeepers to produce this organic honey assortment in order to obtain a higher profitability.

Figure 5. The honey production for period 2012-2014



In addition, we can tell that the honey production is also influenced by the specificity of the area, meaning the fact that the North-East area from Romania is a hilly area with a lot of acacia forests, in which the linden honey areas and the wild grassland are found in smaller proportion, being an area exploited for vine crops, orchards and cereals crops.

CONCLUSIONS

Organic beekeeping is an important sector which contributes to the development of the organic farming concept in Romania. Thus, following the case study made in this paper we can observe a growing trend of number of beekeepers which wants to produce organic honey in North-East of Romania from year to year.

Also, in favourable weather conditions and because, over time due to the organic treatments the bees acquire its own immunity which help them to resist pests and diseases, we can observe a significant increasing of apiaries dimensions over the years, too.

Regarding the quantity of organic honey obtained from the organic certified apiaries, we can say that the production of acacia honey increased very much (from 10500 kg in 2012 to 33000 kg in 2014). The beekeepers are stimulated to produce this assortment of honey due to the very high consumers' request, due to its best quality and, being the most expensive one, the beekeepers profitability is greater.

For the other two assortments of organic honey, linden honey and polyfloral honey, there is a significant production, but it doesn't know the same evolution like the acacia honey production.

As a final conclusion, the organic beekeeping represents a dynamic sector, having an increasing evolution, trend which seems to be kept for the coming years, mainly due to the publicizing and promoting of a healthy life style. Also, the organic farming is sustained by supporting programs with European funds.

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REFERENCES

- Pocol C.B., 2011. Perception study regarding organic beekiping in the North-West region of Romania, *Lucrări Științifice, seria Agronomie*, 54 (2):445-449.
- Popescu A., 2013. Study concerning the trends in Romania's honey market. *Lucrări Științifice – Seria Zootehnie*, vol 59, 153-158.
- Regulamentul (CE) nr. 834 al Consiliului din 28 iunie 2007 privind producția ecologică și etichetarea produselor ecologice, precum și de abrogare a Regulamentului (CEE) nr. 2092/91, *Jurnalul Oficial al Uniunii Europene*, L 189/1/2007.
- Regulamentul (CE) nr. 889 al Comisiei din 5 septembrie 2008 de stabilire a normelor de aplicare a Regulamentului (CE) nr. 834/2007 al Consiliului în ceea ce privește producția ecologică, etichetarea și controlul, *Jurnalul Oficial al Uniunii Europene*, L 250/1/2008.
- Toncea I., 2002. Ghid practic de agricultură ecologică, Editura Academicpres, Cluj Napoca.
<http://www.madr.ro>
http://ec.europa.eu/agriculture/organic/home_ro