THESIS ABSTRACT

The growth and maintenance of bee families is one of the oldest human occupations. This occupation has grown steadily reaching a main branch of zootechnics, which has sought over time to find new methods and practices for the rational and productive exploitation of bee families.

As time went by new growth technologies have improved and machinery and equipment used in the beekeeping practice. After that they have formed new ways to increase bee colonies, so the beekeeper can have into exploitation a growing number of bee families without affecting bee honey production negatively.

Besides the fact that beekeeping plays an important role in agriculture, being an important activity in the increase of agricultural productivity through pollination by about 30%, beekeeping is an environmental barometer, contributing to the survival of about 85% of plant species through pollination.

From the economic point of view, the main product is the natural honey bee product, and then extracted from the families of bees.

This product is 100% natural food produced by bees, and the raw material used to obtain is represented in 98% of the nectar of flowers, hence the name of the floral honey. The name comes from the Latin word mellis which means bee and honey is a product obtained by converting and processing nectar by the bees and then stored in the comb cells being a reserve of feeding for bee colonies.

Regarding foodstuff and health and hygiene by honey means, natural food extracted from the combs when they were cap by worker bees at least ¾ of the total area of the frame, but in terms of picking our country and especially technologies used by beekeeper in the apiary, honey extraction occurs often no longer take into account the report of capacity and the unsealed honey, because in our country the main harvest are characterized most often by short period of harvest about seven days, with the large secretions of nectar reaching the media harvesting acacia depending by years to be covered between 17-30 kg / hive per harvest.

Honey as a product is represented by a solution rich in sugary substances, represented mainly by glucose and fructose, elements coming from the nectar of flowers, secretions of plants and insect secretions (honeydew honey) and other sources that were collected and stored in honeycombs bee families.

Once the processing of tubules nectareous nectar of flowers, in the gut, it is enriched with enzymes secreted by the mandibular glands, enzymes have ownership to split fractions of sucrose, maltose and raffinose, long process that continues even after extraction of honey from colonies frames bees in fructose and glucose.

With the transformation of nectar in the honey produce ripening of honey by converting useless acids as well as the eliminating excess water reaching the relative humidity does not exceed 20%. Another essential element of quality of mature honey honey is pH which varies depending on the nature and provenance in the range of to 3.5 to 5.5.

Honey not only has nutritional qualities but after studies demonstrated that it has a high therapeutic activity, which is exerted on digestive disease, biliary, cardiovascular, respiratory, nervous system, the device urinal in nutrition disease and infectious diseases but also in blood and skin.

With all its therapeutic qualities, honey has contraindications for patients suffering from obesity, diabetes, disorders glycoregulatory, exogenous pancreatic insufficiency and in some allergic disorders.

The products in beekeeping, especially honey, have a high economic value and contribute largely to increased revenue from beekeeping branch. Because profitability and importance of beekeeping can be taken to a higher level, beekeepers often resort to various technological methods depending on the experience and knowledge that you possess each financial power it has, but also the power work with which nature has endowed each, since in order to apply some methods require a certain level of technical knowledge, a certain technical equipment of the apiary and a high workload.

These technology methods are used in beekeeping to model the harmonious development of the family of bees. These methods aim to improve the quantity of honey production without adversely affecting its quality in terms of sensory analysis as a scientific method for assessing the sensory properties.

Therefore aspect of the research is to emphasize a number of quantitative and qualitative aspects of evolution of honey bee during a year using different technology maintenance and manner and periods of application and type of harvest that influence productivity of bee families during the same period.

Technologies applied were taken either from the literature as such or combined together after which they were implemented on experimental modules.

The present research was conducted on a total of six hundred beehives of which 210 families were chosen with the same power development, families that were starting experimental group consisting of 42 experimental modules.

The proposed research were organized into three experimental series were aimed at primarily to create an image on the influence of the type of hive maintenance and type of harvesting on quality and quantity production of honey.

Thesis is structured of two distinct parts. The first part is written on 99 pages comprising four chapters, the synthesis of the literature, and the second entitled personal research which comprises four chapters and bibliography.

Chapter I, entitled "Guidelines on the development and current situation of the world and national beekeeping" is divided into two chapters contain a comprehensive description of the current situation of the development of beekeeping referring to issues such as: global market developments, honey annual production worldwide, the situation and development of beekeeping in Romania, progress of hives and honey production, the annual production of honey nationally.

Chapter II entitled "Factors influencing the quantitative and qualitative honey" contains biological factors that influence the quantity of honey production, division of labour in families bee colony as well as the seasonal dynamics of the family of bees; the environmental factors which included subsections such as the honey potential of the plant as well as the factors related to soil.

Subchapter technological factors include the microclimate of bee families, feeding artificial stimulation of bee colony focusing on stimulation feeding, maintenance and operation of technology families during harvest, the formation and use of supporting families and enhancing the development of bee families after the main harvest from acacia in order to use other harvests.

Chapter III entitled "Summary data from the literature on the topic addressed" is divided into two chapters: the first chapter that presents a comprehensive description of the research conducted, both in the country and abroad, regarding the effects of taking supplementary food on development of bee families by referring both to stimulate feeding in the spring and in the autumn.

The second chapter contains a description of both global and national maintenance effects of bee families in different types of hives

Chapter IV entitled "Honey as a bee product" is divided into eight chapters that contain a ample description of the research carried out by referring to aspects such as: harvesting honey combs, honey extraction by centrifugation; classification honey, sensory characteristics and physical properties of honey; crystallization of honey and its fermentation, packaging and storage conditions honey; terms of quality, chemical composition.

Chapter V entitled "Purpose, objectives and research organization" which is shown and described experimental protocol that is the subject of this paper.

Technologies applied were taken from the literature alone or combined with each other in the according to the experience accustomed from years of practice bee after which they were implemented on experimental modules.

An experimentally module was established from a number of five families of bees host in the same type of standard hive.

To obtain more striking results considering that worked with bees that are composed of a large number of individuals, and during a year beekeeping different disturbance may occur.

The present research was conducted in a unit belonging to SC Melifera SRL Vaslui on an effective of 600 bee families who have selected a total of 210 families that formed the experimental groups.

To choose the 210 families were taken into account:

1. queens age, as it can have different development knowing that age inversely influence oviposition, ultimately influencing the development of the family;

2. power of family- as it affects the family development proportionally so that experience cannot be influenced by it.

3. quantity of honey which is in the nest as well as the its positioning

4. bee interval to be as compact, knowing that a good busy bee interval contains about 300 g bee and that when the family occupies a larger number of intervals without work carried gathering nest, family will not succeed in get an adequate amount of sapling so that our experience does not have such influences

5. The amount of sapling beginning period year of beekeeping. It can influence research that families that are included in the experimental group are marked on August 15, date to be as the reference period around the beginning of the year as beekeeping.

In addition, the main objectives were: bibliographic study of literature in the field at national and global levels; preparation of a general scheme of work as well as the working for each variant; observations made in the apiary, purchase different types of hives needed

experience, monitoring specific maintenance technologies variants experimental sampling, analyzing them in accredited laboratory.

The proposed research were organized into three experimental series were aimed at creating an image on the influence of technology maintenance objectives and the type of harvest on the quantity and quality of honey.

First series, entitled "Effect of stimulation energy feeding on honey quantity production" was achieved by administration of a mixture of sugar syrup 1/1 to witness group, but other variants in addition to experimental sugar syrup mixture 1/1 were added and Protofil infusions of various plants, taking into account the different embodiments of the hive. In addition to the syrup added to five grams per litter of the syrup pollen.

Second series of experiments called the effect of different technological factors on bee colonies interrelations with direct effect on the quantity of honey production by type of hive construction.

Third series of experiments the effect of technological factors on production called quality of honey had three experiences were differentiated by the type of tree. During this experimental series we look at the sensory characteristics that the physical-chemical properties of honey, depending on the technology applied, such as the type of the hive and harvest.

In this paper, although data were collected during three consecutive years, 2011, 2012, 2013, extremely difficult weather conditions of 2012, when the summer there was a particularly strong drought that affected the spontaneous flora as and the cultivated sunflower fields including irrigation, forced us out of our analysis to data collected this year beekeeping (2012).

Chapter VI is entitled "Influence of technological factors on quality of honey production", where we have three chapters.

In the first chapter we analyzed the evolution of the main sensory characteristics of honey harvest obtained by type for each variant of the hive and for each technology: conductivity and colorimetric index, and the third section is represented by chemical characteristics of honey produced detailing the results obtained to the water content of honey obtained mainly pollen content of honey which took into account the frequency of pollen particles predominantly encountered in samples honey harvested from each experimental group separately.

Another key element of the analyzes performed to the quality of honey are fructose content of honey, glucose values ratio F / G, HMF content in the honey as well as the honey content in the total flavones.