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BIO-BEEKEEPING – A FACTOR IN ECOSANOGENESIS

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Abstract

Nowadays, Romania is among the countries with well developed beekeeping, this being a consequence of large flocks of bee families that we have, the amount of honey produced, beekeeping production diversification and the results of scientific research and training specialists. The purpose of this project is the concept of integrated protection and the importance of beekeeping products. We followed the main products derived from the bees (honey, pollen, propolis, royal jelly, wax, bee venom, apilarnil) and beneficial implications on human health and the environment. Given these products, the particular role of bees is distinct and it may be evidenced not only by the products directly harvested from hives by human, but especially through value-added to agricultural products that are obtained from plants cultivated and wild, through pollination. Specialists in nutrition and therapeutics currently considered that hive products are natural resources of the future. Bee-therapeutics products are needed to maintain the health of humans.

Keywords: biodiversity, beekeeping, bee products, sanogenesa

1. INTRODUCTION

Nowadays, Romania is among the countries with well developed beekeeping, this being a consequence of large flocks of bee families that we have, the amount of honey produced, beekeeping production diversification and the results of scientific research and training specialists. There is a need to recognize the importance of beekeeping and conservation of the number of beekeepers, beekeeping being an important part of sustainable agricultural development, this representing a characteristic of rural life.
Knowledge of the natural environment has always been a concern of man, but recently it requires a new trend to protect the environment and people and to introduce the notion of efficiency in regard to this matter.
"The efficiency problem in today's society refers more and more to solving complex problems contained in the phrase "man - product - nature" context in which the notion of efficiency is getting rather towards efficacy for the ecosystem. This collocation could not be possible in the circumstances of a healthy man in an unhealthy environment. Hence the need to unite into a single concept the human and environment health. By merging the terms "ecologic" and "sanogenesis" B. Cotigan used the term of ECOSANOGENESIS for the first time. Getting organic, unpolluted and clean, bee products, is the decisive step for obtaining sanogenetic products in the food, cosmetic and pharmaceutical.
Given the tradition in Romania in beekeeping and production of bee products, beekeeping should be looked at as an independent occupation.
In the sustainable development of rural areas, beekeeping has both economic and social importance by creating workplaces and by the important ecosystem service. The pollination contribute to improving biodiversity including maintenance of the genetic diversity for plant. By the process of pollinating bee colonies provides ecological public goods, economic and social, ensuring food security and maintaining biodiversity.
The purpose of this project is the concept of integrated protection and the importance of beekeeping products.

2. MATERIAL AND METHODS

We followed the main products derived from the bees (honey, pollen, propolis, royal jelly, wax, bee venom, apilarnil) and beneficial implications on human health. They are the basis in obtaining bee products (dietary supplements and medicines for human use) or consumed as such in order to maintain human health.

3. RESULTS AND DISCUSSION

Bee honey
It is obtained from the sweet nectar of flowers or from sweet secretions of the plants. Honey is known as a great source of energy but also as an excellent health product due to its content in minerals, enzymes, amino acids, vitamins.
It is found throughout the whole human history, contributing to human welfare to whom was and still is a healthy food, but also known for its many therapeutic applications.
Depending on plant sources visited by bees, honey can be monofloral, polyfloral or honeydew honey.
The great fans of honey have no doubt in comparing the diverse variety of honey with the variety of cheese or wine.
Each type of honey is unique, its flavour being closely related to the species of flowers "visited" by the bees and always vary by region, altitude and location of the hive.

Honey contains sugars, water plant and vegetal substances. Even though it seems a simple formula man can not obtain it without the help of bees by any other method.

The pollen

The male reproductive element of flowers that bees collect and mix with their saliva secretions and nectar, storing it in the hive as food protein in the form of bee bread, without which life would be impossible in the colony.

It contains many elements essential for life: amino acids, proteins, enzymes, minerals and trace elements, group B vitamins, large amounts of beta-carotene, vitamins C, D and E, substances with antibiotic effect, hormone-type substances and growth factors.

It is consumed as a supplement to strengthen the body and increase its natural resistance to infection.

It has wide applications in medicine especially in hepatic diseases, prostate disorders, and mental health. It is an excellent natural factor in preventing age related degenerative phenomena.

The propolis

It is a mixture of natural resin, plant and bees wax, collected from the buds, bark and branches of trees or shrubs for the purpose of thermal insulation of the nest, polishing of honeycombs cells before clock queens and nest sanitation.

The natural composition of propolis is: flavonoids, phenolic compounds, aromatic aldehydes, coumarins, vitamins and minerals, which give the product excellent properties that ensure proper maintenance of body functions.

It has the following properties: antioxidant, anti-inflammatory, antimicrobial, healing, and local anesthetics.

It is a cure-for internal use (diabetes, cancer, rheumatism, heart disease, lung and liver), for external use (skin problems, burns, wounds and so on).

Its lack of harm attracted the interest of specialists in nutrition and therapeutics and therefore it is now considered one of the most interesting and promising natural resources of the future.

Royal jelly

It is the glandular secretion of young bees intended for feeding queens, for the first phase of growth of juveniles.

It is a viscous-looking, white-creamy product that contains essential elements, such as: amino acids, proteins, lipids (superior unsaturated fatty acids, phospholipids). It can be considered a true cocktail of vitamins (B complex especially), minerals, substances with antibiotic effect, hormone precursors, and growth factors.

It may be used against fatigue, it can improve physical strength, physical and mental balance-recovery, prevention and treatment of many diseases.

Bee venom

It is secreted by specialized glands of worker bees and queens. The workers use it to defend the hive against intruders and the queens to kill and eliminate their rivals.

It contains a variety of substances: biogenic amines, peptides, enzymes that, despite the unpleasant connotation associated with the designation of "poison" are very important for the human body.

Its effects are known from ancient times, which is why the product has been used in traditional medicine. Latest treatment methods consist of injections, application of bee venom therapy, acupuncture centres.

In order to avoid pain associated with classic treatment with bee stings or injections, the venom is used as the active component of topical ointments or bee-phytotherapy techniques.

The main disorders that the bee venom is proving its efficacy are rheumatism, neuralgia, multiple sclerosis but also as a stimulant of the immune system.

Beeswax

It is a homogeneous mixture and a complex of organic chemicals, providing clearly defined and ultimately resulting in extraordinary properties, making it an invaluable product, irreplaceable in a number of areas.

It is used for a wide variety of products: poultices, ointments, beauty creams.

In the pharmaceutical industry it is used in ointments, tablets or adhesive filming.

Apilarnil

It is obtained from drone larvae at the age of 7 days and from the content of drone cells and it is used in preparations with therapeutic role

Apilarnil has a very complex composition, similar to royal jelly. First of all the apilarnil is a natural product rich in nutrients, vitamins and sex hormones; in order to prevent potential diseases, many people use apilarnil in a preventively manner (prophylactic).

Given the importance of bee products the role of bees is great and can be shown not only by the products directly harvested from human hives, but especially through value-added agricultural products that are obtained from plants cultivated and wild, through pollination.

The pollination improves product quality, increases the biological value and increases seed germination.

The agricultural plants that can be pollinated are: - sunflower, mustard, rapeseed, etc. - fodder plants seed as: clover, alfalfa - fruit trees and shrubs;

The importance in Entomophile plants pollination: bees start this action in early spring and do not finish it not even during winter, when used for the same purpose, in greenhouses.

It is estimated that production increases and qualitative increases due to bee pollination outrun at least 20 times the direct bee products obtained from bee families.

Annually, from each family of more than 50 kg honey can be obtained in honey and other bee products.

Bee products have a significant economic value, but also a great importance in food and medicines for humans.

By managing bee colonies, beekeepers bring an ecological service of prime importance, ensuring a sustainable model for rural production: "bee pastures", various land for certain agricultural crops provides consistent feeding to bees - necessary to maintain in good condition and have a healthy immune system;

For beekeepers who own a small number of families, beekeeping is established as a recreation or leisure in nature activity.
It represents a significant share of the labour force in scientific research, education, manufacturing and industrial beekeeping sectors of recovery, health and others.
The social role derived from the energy and medical value for food of honey and other products obtained and used in bee-therapy can not be neglected.

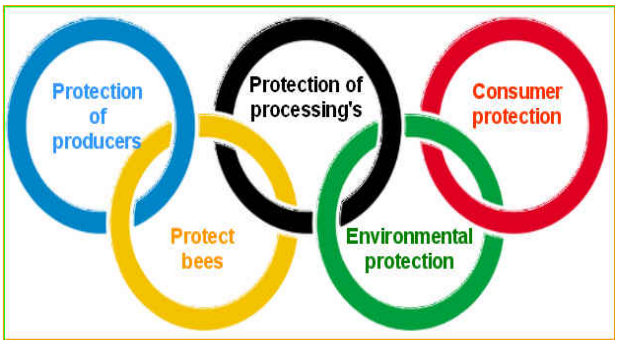

Figure 1 Integrated protection in beekeeping (authors)

Figure 1 is the concept of integrated protection in beekeeping.
To protect producers and processors in beekeeping is required:
- Uniform identification and registration of national bee hives, with yearly reviews and updates (OM119/2011);
- Development of national surveillance systems in close cooperation with associations of beekeepers and develop concord EU standards to allow comparisons;
- Informing all owners of bee hives by the agricultural producers using treatments to combat diseases and pests in plantations;
- Support research on bee health;
- Strengthening relations between beekeepers and beekeeping organizations;
- Compensation for eventual losses that beekeepers might have in bee populations;
Consumer protection in regard to bee products is required to:
Establish clear legal definitions for all bee products, including honey varieties,
Define key parameters for quality of honey:
- proline and sucrose content,
- Low level of moisture,
- pollen spectrum,
- flavor and sugar content of honey;
Development of research in finding effective methods to detect forgery of the honey;
The implementation of EU systems of indicating origin labels (PDO and PGI) on apiculture products by beekeepers and representative organizations;
Measures for the increasing consumption of honey and bee products originating in Romania, including by promoting honeys with properties characteristic to a certain variety or geographical areas;

4. CONCLUSIONS

Specialists in nutrition and therapeutics currently considered that hive products are natural resources of the future.
Bee-therapeutics products are needed to maintain the health of humans.
In addition to the natural advantages that beekeeping has, it also offers an opportunity for leisure in nature.
Natural resource represented by flower nectar and pollen accumulated in the absence of bees would be lost because currently there is no effective method of collecting and processing it.
It is necessary to develop an awareness and information measures in order to promote a higher level of awareness and responsibility among authorities and producers on bee diseases and the measures available to prevent and treat them;
Need for additional financing of agri-environmental programs that encourage biodiversity, such as those which supply of plants to attract bees honey;
Implementation of Directive 2009/128/EC on sustainable use of pesticides, reducing the risks and impacts of pesticide used on the environment, including bees;
Promoting measures to encourage biodiversity, given the fact that bee health is enhanced by access to a mixture of pollen from different plants;
Compliance Guide for bees and hygiene practices, taking into account the specificities of beekeeping and the diversity of stakeholders;
Necessity to respect the main socio-economic aspects as well as the fact that beekeeping sector should remain competitive in the global market.

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