The prospects for beekeeping in the expanded EU

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European beekeping in the 21st Century – strengths, weaknesses, opportunities and threats

Richard Jones
IBRA, 18 North Road, Cardif CF10 3DT, Wales; E-mail: joneshr#ibra.org.uk

Man's interest in bees predates history. The hobbyist beekeeper is still important, the vast majority of European beekeepers fall into this category, and there remains strong interest in the traditional ways.

Today beekeeping is also a very serious business not a quiet rustic craft symbolic of a gentle age. It is essential and increasingly commercial activity. Its purpose is to raise revenue-earning capacity directly through hive products and indirectly through the provision of pollination services. It is this globalisation of apiculture and the fierce drive of competition that has caused many of the problems and difficulties that we face today.

There is a general paucity of reliable apicultural statistics and the veracity of those that are available is sometimes questionable. However, allowing for this, the paper endeavours to offer an overview of the current beekeeping situation in the expanded EU and the complex problems that can beset beekeepers from the hive entrance to the international export market.

Professional beekeeping in Central European conditions of the Czech Republic

Frantisek Kamler
Bee Research Institute, Dol, 252 66 Libčice nad Vltavou, Czech Republic; E-mail: kamler#beedol.cz

In the Czech Republic there are 50 000 beekeepers who own 500 000 bee colonies. The vast majority of beekeepers are hobbyists. In last four years there exist about 60 bee farms which keep 13 thousand bee colonies, i.e. 2.6 % of all bee colonies in the Czech Republic. We applied a questionnaire to determine the economics and

problems of these professional bee farms before the entry into European Union. Work costs for the bee colony management made 45 %, other costs on feeding, transport, maintenance, renewal of hives, material 55 %. Average honey yield of a colony was between 25 and 30 kg, minimal profitability limit moves between 30 and 35 kg. Many beekeepers use small operation technology and that is the reason why they are not profitable. The economics may be encouraged mainly by higher honey yields and by reduction of the time necessary for the treatment of bee colonies. Most bee farms are to be provided with new equipment and transport means for moving hives, but beekeepers because of financial reasons cannot afford it.

Economical perspectives for beekeeping in ten countries acceding to the EU

Andrzej Pidek, Krystyna Pohorecka

Research Institute of Pomology and Floriculture, Ul. Pomologiczna 18, 96-100 Skierniewice, Poland; E-mail: apidek#insad.pl, krystyna.pohorecka#man.pulawy.pl

The European Union has grown in size with accession of ten countries. The number of member states increased from 15 to 25. The changes in the ten countries acceding to EU are really deep. They range from transformations in economical and legal systems to changes in mentality and whole philosophy of life. In the way of transformation the beekeeping shouldn't retreat. The comparison of old 15 members states shows that technological level and skills of beekeepers are similar. Economical indexes like the honey production from bee colony and the number of bee colonies per km^2 are similar; the first amounts to 15 kg, the second equals to 3. The beekeeping statistics in ascending countries are very different. The honey production in EU post accession will increase from 130 thousands tons to 171 thousands tons. The volume of imported honey after accession 10 new countries will increase by 3.9 thousands tons and the volume of export will increase by 28.7 thousands tons. These values will evolve along with the unification of economical situations in all EU-countries. The EU should also unify standards in all member states. The European beekeeping has a great tradition, which contributes to the present knowledge and science. It leads to the new concepts and innovations and mirrors in the variety of new technological devices. More than 20 types of hive exist today in Europe. Given that the climate conditions are differentiated in the acceding countries, just like they are in old 25 members states, some specialization in honey production would be very reasonable for the sized-up territory of EU. Generally the future honey production in Europe should concentrate in countries with mild climate. In countries of northern Europe it should be limited. The beekeeping in new members states should be more subsidized than in the old countries, especially the investments in infrastructure leading to better quality of sold honey. That would be accomplished by a resignation from trade preferences for some African and Asian countries. The undergoing changes require appropriate actions and full coordination from all members of the EU-25.

Production and marketing of honey in expanded European Union

Róbert Chlebo
Slovak University of Agriculture, Nitra, Slovakia; E-mail: robert.chlebo#uniag.sk

Indicators of honey production, trade, export and import shows some differences between former and newly associated member countries of the EU. The main disproportions are apparent in ratios of professional beekeepers and in honey self-sufficiency. In the year 2003, professional beekeepers operated 43.7% of all European hives; in 2004, this rate is going to be cut down, as in newly associated countries is beekeeping mainly hobby occupation and rate of professionalism is usually less than 1 %. The former 15 EU members has a honey deficit and self-sufficiency is being less than 50%, while many of the new member countries have to export a big portion of its inland honey yield. Differences are visible also in supply balance, structure of output, production costs, inventory of producers and implementation of honey programmes or pre-accession measures. Nevertheless, beekeeping within EU borders does not seems to be a very attractive activity and Regulation EC No. 1221/97 is not sufficient to guarantee the profitability of bee farms. Bee diseases and pesticides threaten community beekeeping and restocking hives is difficult and expensive. There is a substantial difference between the prices of imported honeys and producer prices within the EU, which may increase further with opening up of the markets.

European and OIE legislation governing beekeeping activities

Franco Mutinelli, Alessandra Baggio, Albino Gallina
National Reference Laboratory for Beekeeping, Istituto Zooprofilattico Sperimentale delle Venezie, Viale dell'Università 10, 35020 Legnaro (Padova), Italy; E-mail of the corresponding Author: fmutinelli#izsvenezie.it

With the adoption of the new authorization system, all regulatory needs for veterinary medicinal products have been fulfilled with the European Union. This system, indeed, provides access to a continent-wide market to innovative products and facilitates access to the markets of the Member States for other products. Also medicines used for the control of *Varroa destructor* infestation of honeybee are regulated by this authorization system. The pharmaceutical legislation of the European Community, which has evolved over a 30-year period, covers both medicinal products for human and veterinary use. Harmonization of the requirements in the area of veterinary medicines began in 1981 with the adoption of the Council Directives 81/851/EEC and 81/852/EEC, laying down common requirements for manufacturing and marketing authorization, based on the evaluation of the quality, safety and efficacy of the product. Any additional measures were taken to harmonize further the procedures and the criteria for the evaluation of veterinary medicinal products, such as framework requirements and interpretative guidelines for their testing, principles and guidelines of Good Manufacturing Practice (GMP), and a community procedure for the

evaluation of high-technology products. However, granting of authorizations remained national. As a consequence, although applications were evaluated on the basis of these harmonized criteria and procedures, and in some cases in common by the authorities of the member states, there were differences in the decisions reached by the Member States on individual products. This was why the commission made proposals in 1990 for a new system for marketing authorization of medicinal products, which was adopted by the Council of Ministers in 1993 and entered into force on January 1, 1995. One of the first consequence was the creation of the European Agency for the Evaluation of Medicinal Products (EMEA) in London. Council Regulation (EEC) 2377/90 laid down a Community procedure for the establishment of Maximum Residue Limits (MRLs) of veterinary medicinal products in foodstuffs of animal origin. In essence, it bans all veterinary drug residues in honey except ones that have been approved. Since 1995, two new registration procedures for human and veterinary medicinal products have become available through the EU: the centralized and the decentralized (mutual recognition) procedures. In accordance with Council Directive 81/851/EEC, authorization is also required for manufacture of veterinary medicinal products. Close relations are maintained with the licensing authorities of the European Economic Area, where integration is developing via the implementation of common directives and guidelines of medicines for human and veterinary use. The European Pharmacopoeia co-founded, with the Japanese Pharmacopoeia and the United States Pharmacopoeia, the Pharmacopoeial Discussion Group (PDG) in 1990.

The international trade and the community exchanges of bees and bee products are a complex issue according to the their different origin and use. The trade of bees, which are the main risk for disease dissemination, is very active and remains largely unregistered. Veterinary certificates are required for bees and wax, but should be required also for the importation of honey and pollen when intended for apiculture. The country of origin and the sanitary status of the area concerning AFB, EFB, varroosis, acariosis, nosemosis and other pests should be included. The rules governing this complex issue are: Council Directive 92/65/EEC which lays down animal health requirements governing trade in and imports into the Community of bees, Council Directive 92/118/EEC which lays down animal health and public health requirements governing trade in and imports into the Community of apiculture products intended exclusively for use in apiculture, Council Directive 97/78/EC which lays down the principles governing the organisation of veterinary checks on products entering the Community from third countries, Commission Decision 2003/881/EC concerning the animal health and certification conditions for imports of bees (*Apis mellifera* and *Bombus* spp.) from certain third countries and repealing Decision 2000/462/EC, Council Regulation (EC) No 1398/2003 amending Annex A to Council Directive 92/65/EEC to include the small hive beetle (*Aethina tumida*), the *Tropilaelaps* mite (*Tropilaelaps* spp.), Ebola and monkey pox, Commission Decision 2004/216/EC amending Council Directive 82/894/EEC on the notification of animal diseases within the Community to include certain equine diseases and certain diseases

of bees to the list of notifiable diseases, and the OIE International Animal Health Code which aims to prevent the spread of animal diseases, while facilitating international trade in live animals and animal products.

Council Directive 2001/110/EC relating to honey which lays down names, product descriptions and definitions as well as composition criteria for honey and Council Regulation (EEC) 2377/90 which lays down a Community procedure for the establishment of Maximum Residue Limits (MRLs) of veterinary medicinal products in foodstuffs of animal origin completely cover the issue.

Managing honeybee health; an industry viewpoint

Max Watkins

Director, Vita (Europe) Limited, 21/23 Wote Street, Basingstoke RG21 7NE, UK; E-mail: max.watkins#vita-europe.com

Vita (Europe) Limited is a small company focused on developing and marketing products specifically for honeybee health on a world wide scale. Based in the UK, Vita has a strong policy of research and development. The strategy of Vita is to take advantage of the expertise of Universities, Institutes and beekeepers to perfect new projects. That is what we do in many of the European Member States and in other countries in developing new products for apiculture.

The rules and regulations covering registration and sale of such veterinary preparations vary from country to country, even within our "harmonised" Union of European Member States and the conditions internationally are becoming ever more stringent.

However, beekeepers want and expect a continual flow of new products; some of the obstacles encountered are described.

The direct and indirect effects of colony numbers and average of the honey production per hive on total honey production of the authoritatively country about honey production in the world

Suat Şahinler, Nuray Şahinler, Ozkan Gorgulu

Mustafa Kemal University, Agriculture Faculty, Animal Science Dept., Antakya, Hatay, Turkey; E-mail of the corresponding Author: sahinler#mku.edu.tr

In this study, what the eight authoritatively countries about honey production in the world should do to increase their total honey production in the short run was determined statistically. For this purpose, the data related to the total honey production, colony numbers and average honey yield per hive of each authoritatively country about honey production in the world between 1960 and 2002 from FAO was used and examined the direct and indirect effects of these factors on total honey

production for each country. As results, some suggestions were presented for increasing of total honey production for each country in the short run. However, honey production, colony number and average of honey yield per hive have increased for the last 40 years; the increasing effect of colony number (78.2 %) was much larger than the increasing effect of average of honey yield per hive (23.2%) on total honey production for Turkey, the greatest honey producer in Europe. Therefore, to increase the average of honey yield per hive will be more effective than to increase the colony number in the short run in Turkey.