



MEDI-BEEB

State of the Art on Beekeeping and Bee Products in ITALY

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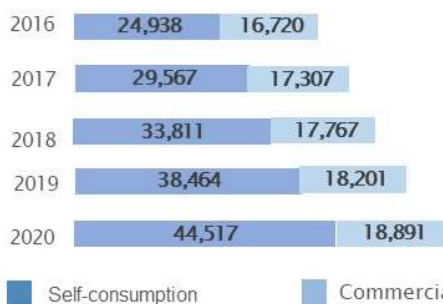
1. General beekeeping information

Italy is the **fourth country in the European Union for the number of hives** (1.4 million), after Spain (2.9 million hives), Romania and Poland (1.8 and 1.6 million hives respectively).

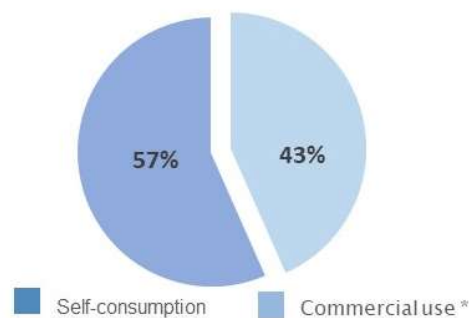
- The number of hives registered in Italy in 2018 increased by 7% compared to 2017.
- The Italian production of honey recorded by ISTAT is just under 8 thousand tons for a value of over 61 million euros, but it must be considered that ISTAT takes into consideration beekeeping only on the occasion of the general agricultural censuses that, not being conceived to establish the consistency of beekeeping farms, they only detect part of the farms structured in the agricultural sector, where these coincide with the availability of land. Therefore, the numerous beekeepers are excluded, who regardless of their professional connotation, do not associate beekeeping with an agricultural activity but who also, in keeping the bee alive, in the most disparate natural or agricultural environments, in fact ensure an indispensable and capillary pollination by placing their hives on other people's land.
- The actual Italian production of honey, according to estimates by the National Honey Observatory¹, would amount to over 23.3 thousand tons, about three times that estimated by ISTAT.
- Production is guaranteed by over 1.4 million beehives, of which around 390,000 are permanent and 556,000 are nomads, while the rest are beehives for hobby production and self-consumption.
- Geographically, production is widespread in all regions of the country. The most productive region is **Piedmont**, with over 5,000 tons estimated in 2018, followed by **Tuscany** with over 3,000 tons and **Emilia Romagna** with over 2,000 tons.
- The average production data by region showed an average yield per hive, for professional companies practicing nomadism, of about **33 kg/hive** for the Northwest and Northeast regions, **35 kg/hive** for the Central regions and **22 kg/hive** for the regions of the South and the Islands, which results in an **average national yield of about 30 kg / hive**.
- From the data of the **National Beekeeping Database** (1 June 2019), it emerges that there are 51,578 beekeepers in Italy of which about 33,800 producing for self-consumption (65%) and 17,767 are beekeepers with VAT number who produce for the market (35%).
- Italian beekeepers had a total of **1,473,665 hives** and **252,848 swarms** on December 31st 2019.
- **78% of the total hives (984,422)** are managed by **commercial beekeepers** who raise bees by profession. The great prevalence of hives held by beekeepers with VAT number underlines the high professionalism of the sector and the importance of the sector in the agro-economic context.
- In 2018, over **173,000 hives** produce **organic honey**, while **1.3 million hives** produce **conventional honey**.
- The most recent data show that the number of **beekeepers** is constantly growing in Italy in 2020 there were **63,408**, 52% more than in 2016, while the **apiaries** present on the national territory in 2020 are **153,309** (+ 80% compared to 2016), of which 57% with a commercial destination.

(Graph 1 and 2)

Number of activities by production destination



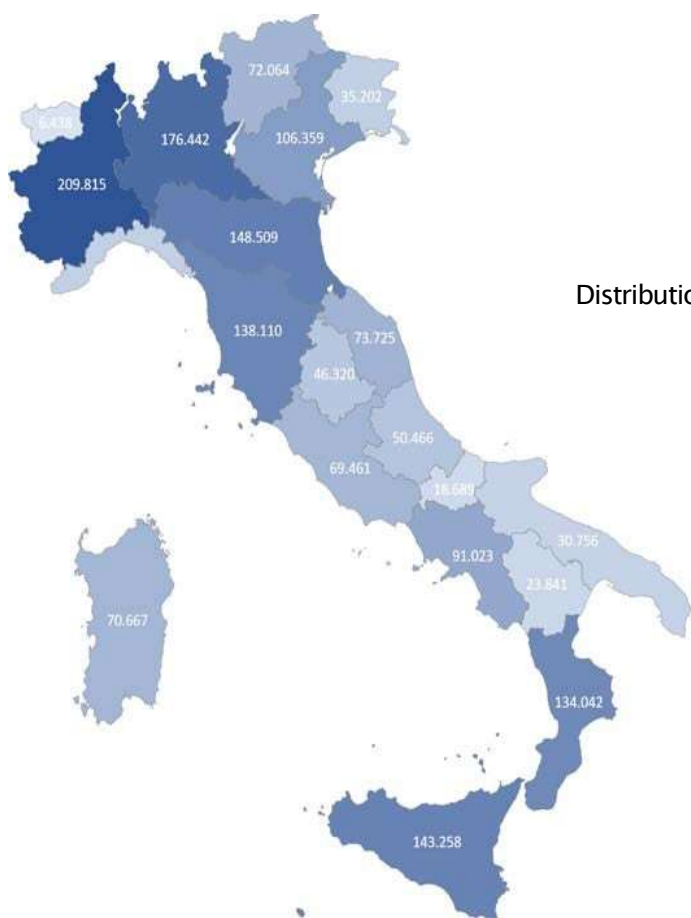
Distribution of apiaries by production destination (31/12/2020)



* Down by Law 24 Dec. 2004, N. 313

Continuously updated data are shown on the website <https://www.informamiele.it/>

- In 2020, **1,678,487 hives** and **270,235 swarms** were registered.
- The region with the highest number of hives is Piedmont (12% of hives and 20% of swarms) while Valle d'Aosta and Molise are the regions with the lowest number of registered hives (1.1% and 0 respectively, 4% of the national total).



Distribution of hives per region (31/12/2020)

Source BDN Anagrafe Zootechnica Nazionale

2. Beekeeping products

- The **national production of honey** in 2020 is estimated at around **18,500 tons**, with a growth of 23% compared to 2019 due in part to the increase in hives (+ 6% compared to 2019), but above all to the fact that the 2019 vintage has been among the worst in recent years with production losses of 100% for some single-flowered honeys.



Source Osservatorio Nazionale Miele

Honey prices in Italy depend on kinds of honey plant origin and are constantly growing in the last years.

The **Table 1** below shows the prices at the end of 2021.

Kinds of honey	€/Kg	2021-12
Wildflower honey	€/Kg	6,35
Chestnut honey	€/Kg	6,05
Eucalyptus honey	€/Kg	6,50
Sulla honey	€/Kg	6,50
Linden honey	€/Kg	7,15
Acacia honey	€/Kg	10,25
Cirtus honey	€/Kg	6,03
Honeydew honey	€/Kg	7,15

The **Table 2** below shows the honey medium prices in different regions (December 2021).

Region	€/Kg	2021-12
Lombardy	€/Kg	6,69
Piedmont	€/Kg	7,33
Veneto	€/Kg	6,02
Umbria	€/Kg	7,50
Sicily	€/Kg	6,25

About the honey consumption in Italy, the fact sheets are as here below:



➤ of the nearly **20 thousand tons of honey produced annually**, about 40% (equal to 8 thousand tons) is destined for the food or cosmetic industry, 60% (about 12 thousand tons) is destined for internal Italian market.



➤ a **per capita consumption of 500 g** is estimated; the average European consumption is estimated at 600 gr. with Germany in first place with 1.5 kg per capita.



➤ as for direct national consumption, **half** (6 thousand tons) represents consumption linked to the **use of honey in the kitchen**, the other 6 thousand tons refer to honey **consumed as food**: in breakfast, snack or in combination with cheeses.



➤ The **Italian production of honey** covers just **50% of the national consumption**.

➤ The passion for bees is growing in **2020** there were over **63,000 beekeepers** (+ 53% vs 2016) and over **153,000 apiaries** (+ 80% vs 2016) with almost **1.7 million hives**.



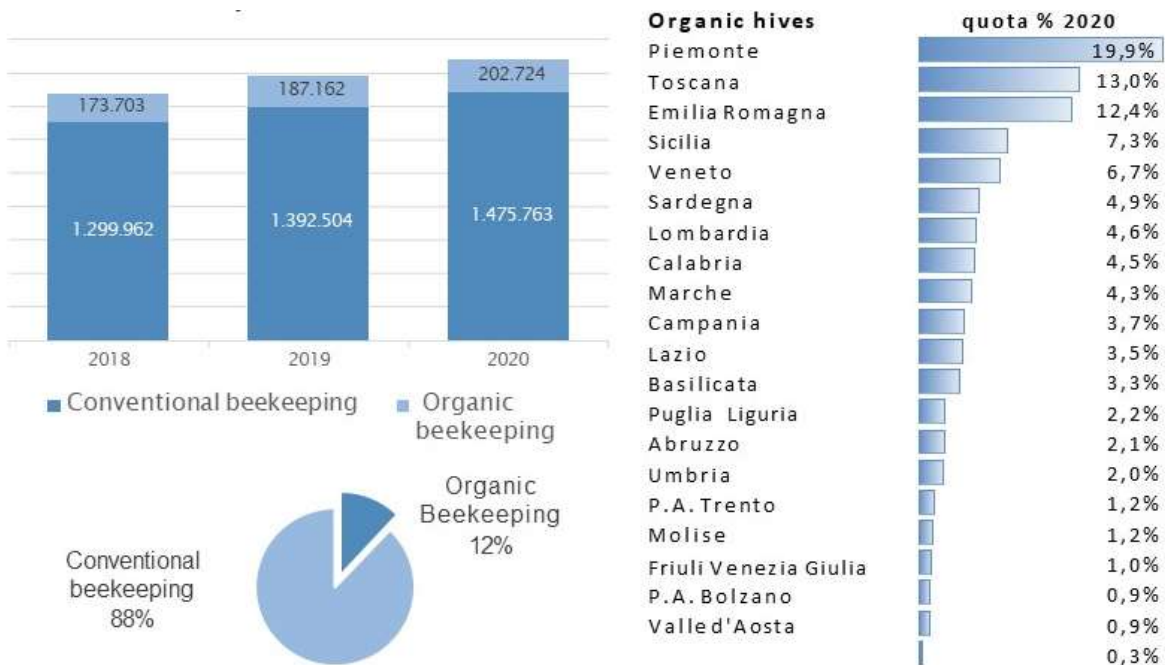
➤ Very high level of associations: **in 2020 there are 119 Associations, 12 at the national level and 107 at the local level.**

About organic beekeeping:

➤ In 2020, more than **202,000 hives produce organic honey**, equal to **12% of the total**, with a constant increase (over 15,000 more organic hives in 2020).

- **Piedmont, Tuscany and Emilia Romagna** are the regions with the highest concentration of organic hives.

Number of hives/production method



Source Anagrafe Zootecnica Nazionale

3. Production of apitherapy products

Historical approach. Apitherapy has no specific roots and experiences in Italy, neither in human medicine nor in the veterinarian sector.

The **Italian Association of Apitherapy** was established on **January 20th 2015**, with the task of disclosing the apitherapy through meetings, courses and events. Another goal of the association was to create a network of doctors, beekeepers, researchers, operators of the welfare and people interested at the development and practices of apitherapy, with the aim to connect the existing experiences and competences also favouring exchange and sharing of best practices with other international associations.

Apitherapy was in the very last years boosted by some initiatives and particularly the organization of the **6th Apimedita International Symposium** on the theme **New Perspective for Apitherapy among Integrated Therapies. Hive products and their Application in Human Medicine.**

The law December 24th 2004, nr.2013, Discipline of Apiculture, has no specific reference to the use in human medicine of hive products while is focused on respect of beekeeping good practices.

Apitherapy products. There are **some Italian firms producing natural medicines**, particularly in the sector of phytotherapy and use of medicinal herbs, also having in their production **apitherapy products**, mostly from **propolis, pollen and royal jelly**, recommended as use associated to

conventional medicines. Very few companies are producing **bee venom** for the **pharmaceutical or cosmetic industry**.

The use of those **natural ingredients** is regulated by the **Directive 2004/24/EC** on traditional medicine, based on natural pharmaceutical products officially used since at least 30 years, of which at least 15 years in the European Union and with sufficient data proving that they are not dangerous for health and effective vs demonstrated experience and use

Also concerned is the European Community Catalogue on **medicines for human use** by **Directive 2001/83/CE**, in which the medicine for humans is defined as:

i) any substance or combination of substances presented as having curative or prophylactic properties against human disease; ii) any substance or combination of substances that can be used by humans administered to humans for the purpose of restoring, correcting or modifying physiological functions, exercising an immunological or metabolic pharmacological action, or to establish a medical diagnosis (see picture below).

Regulatory pathway	Main requirements on safety and efficacy	Where to apply
Traditional use registration (Article 16a(1) of Directive 2001/83/EC ↗)	<ul style="list-style-type: none"> ▶ No clinical tests and trials on safety and efficacy are required as long as sufficient safety data and plausible efficacy are demonstrated ▶ Involves assessment of mostly bibliographic safety and efficacy data ▶ Must have been used for at least 30 years, including at least 15 years within the EU ▶ Are intended to be used without the supervision of a medical practitioner and are not administered by injection 	<ul style="list-style-type: none"> ▶ National competent authority of a Member State for national, mutual recognition and decentralised procedures
Well-established use marketing authorisation (Article 10a of Directive 2001/83/EC ↗)	<ul style="list-style-type: none"> ▶ Scientific literature establishing that the active substances of the medicinal products have been in well-established medicinal use within the EU for at least ten years, with recognised efficacy and an acceptable level of safety ▶ Involves assessment of mostly bibliographic safety and efficacy data 	<ul style="list-style-type: none"> ▶ National competent authority of a Member State for national, mutual recognition and decentralised procedures ▶ EMA if centralised procedure applies
Stand-alone or mixed application (Article 8(3) of Directive 2001/83/EC ↗)	<ul style="list-style-type: none"> ▶ Safety and efficacy data from the company's own development or a combination of own studies and bibliographic data 	<ul style="list-style-type: none"> ▶ National competent authority of a Member State for national, mutual recognition and decentralised procedures ▶ EMA if centralised procedure applies

Based on the Directive 2004/24/EC has been created a Community list of natural substances with use in the medicinal field for a sufficiently long period to be considered harmless under normal conditions of use

Community monographs have been released relating to traditional medicines that contain the scientific opinion of the Committee based on the evaluation of available scientific data (well established use) or on the historical use of the product in the European Community.

130 monographs are currently available on the website of EMA with publication of summary of recommendations in a clear and simple language for the public.

In Italy, on **article 27** of the **legislative decree 219/2006** the information to be given on the label is duly described.

The **use of medicinal products from beekeeping in veterinary medicine** is at initial stage as there is a lack of scientific studies.

The main reason is that beehive products have as potential sources many flower species, and therefore they have extremely variable characteristics, and it is necessary to determine the overall quality of each product and/or its therapeutic properties to create a quality mark and a certification of this products.

In the treatment of **skin lesions** with honey it is possible to combine propolis or phytotherapy principles (e.g. essential oils) to deter animal's licking, to repel flies and to enhance the healing effect. Veterinarians recommend organizing practical training courses to form specialized veterinarians on this issue and creating a working group of veterinarians specialized in apitherapy, to share skills and updates on the theme.

Doses and application protocols should be moreover defined for their topical and oral use in veterinary for the different animal species. A datasheet model for the description of the clinical cases and the collection of national experiences should be implemented to create a database.

Perspectives are considered very good, so scientific research projects in collaboration with universities, laboratories and other public institutions are foreseen be developed.

Bee-related products are in general considered very safe and allergic reactions are the most common few side effects. Bee products must be avoided in **patients with known allergies** to bees or bee products to avoid hypersensitivity reactions.

Symptoms of an allergic reaction in animals must be put under control:

- breathing problems (wheezing, asthma);
- gastroenteric distress (vomiting or diarrhea);
- widespread swelling;
- extreme vocalization;
- seizures;
- loss of consciousness;
- anaphylactic shock.

About **diet for animals**, it is suggested to integrate honey, pollen, propolis and royal jelly a little at a time in the animal diet or applied with a small amount topically the first time, to avoid the risk of adverse reactions and even anaphylactic shock.

About the **venom therapy** it should start with the determination of whether the patient is allergic by administering a small amount of venom intradermally. If there are no adverse reactions, then it is possible to increase gradually over several weeks until the maintenance dose is achieved.

The **bee wax**, deriving from the glandular secretion of bees, is for the most part reused in the same production cycle beekeeping, to produce wax sheets. However, the wax is used in numerous fields: as a waterproofing and protective material, in the precision engineering industry, for paints and for some products of the house, for wood and leather processing, in art, in medicine, in some pharmaceutical preparations, cosmetic and candle making industries.

Even larger than in medicine, for humans or for animals, is the **use of natural compounds from beekeeping in the food sector**, that has been established under several European Regulations.

- EC Regulation 178/2002: Foods
- Directive 2002/46 / EC: Food supplements

- EU Regulation 2015/2283: New foods
- EC Regulation 1924/2006: nutrition and health claims (claims) proposed on food labels and/or advertising
- EC Regulation 1170/2009: lists of vitamins and minerals and their forms that can be added to foods, including dietary supplements
- EC Regulation 353/2008: implementation rules for applications authorizing the health claims provided for in Article 15
- EC Regulation 1169/2009: amending regulation 353/2008
- EC Regulation 116/2010: amending Regulation (EC) No. 1924/2006 as regards the list of nutrition claims
- EU Regulation 1169/2011: food labeling
- EU Regulation 432/2012: list of authorized health claims,
- Regulation 609/2013: infant formula, for special medical purposes, whole food ration
- EU Regulation 907/2013: rules relating to questions concerning the use of generic descriptors, names traditionally used to indicate the peculiarity of a category of food or drink, produced with at least 20 years of use within the European Union.
- EU Regulation 828/2014: information absence or reduced presence of gluten.

National organizations of beekeepers in Italy are:

Unaapi – Unione nazionale associazioni apicoltori italiani

<https://unaapi.it>

Aapi – Associazione Apicoltori Professionisti Italiani

<http://www.aapi.it>

ANAI – Associazione Nazionale Apicoltori Italiani

<https://a-n-a-i.webnode.it>

AIAAR – Associazione italiana allevatori api regine

<https://aiaar.it>

FAI – Federazione apicoltori italiani

<http://www.federapi.biz>

In every region there are also beekeepers' associations.

In **Umbria** there are two main beekeepers' organizations:

Apau – Associazione produttori apistici umbri

Località Case Sparse 112 – 06063 Magione (PG)

Tel. +39 075 – 84 72 085

<http://apau.it>

Consorzio Apistico Provinciale

C/O Istituto Zootecnico Gen. Borgo XX Giugno 74 06121 Perugia

Tel. +39 075/5856260 – 338/9573357 gardi@agr.unipg.it

In Umbria an interesting case study is Azienda Apistica Montecorona developing organic processes vs parasites, such as Varroa, and producing, besides various kinds honey, propolis, royal jelly, pollen, bee wax, queen bees and swarms. See <https://www.youtube.com/watch?v=PP2EEU2Kcqc> .

The thermic technique used against Varroa is provided by a company, also located in Umbria, Bee Ethic <https://www.beeethic.com/en/> . The Bee Ethic system kills Varroa by heating the hive at 42° C (108 F). Bees are treated directly during the reproduction phase, within the bee brood, thus stopping the Varro reproduction cycle. As Varroa is also a virus carrier, Bee Ethic helps to block viral transmission.

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- APITHERAPY Symposium - Lukovica and Maribor, Slovenia, 23rd-24th October 2015 – Book of abstracts
- Associazione Italiana Apiterapia <http://www.apiterapiaitalia.com/>
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