

Apimondia 1999

A beekeeping magazine  
presenting beekeeping and  
products in:

Denmark  
Finland  
Norway  
Sweden

# Nordic beekeeping



Free issue



Asger Søgaard Jørgensen  
 Secretary general of the Danish  
 Beekeepers Association  
 Vice-president of APIMONDIA

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## Co-operation is the key word

Nordic Beekeepers' Associations have been working together for many years. The Nordic Bee council has contributed to co-operation between the beekeepers' associations in Denmark, Finland, Norway and Sweden. Together with the scientists we have run seminars, workshops and research projects across the borders. We have created networks between beekeepers and scientists.

Members of one association have benefits from sister associations in the other countries. Beekeepers can subscribe to the other countries' beekeeping journals at a rate reduced by 50%.

The sister associations help in arranging study tours, and find employment for trainees from the other countries.

Until a few years ago we mainly spoke our own languages when we met: Swedish, Norwegian and Danish are similar. With good-will we can understand each other. Finnish is a completely different language. But some Finns understand Swedish.

That has changed recently. Representatives of the beekeepers of the Baltic countries are now invited to participate in our annual meeting. So we have to speak English now. We want to extend the close co-operation to include the small Baltic countries as well. Somehow they are of the same family.

Close co-operation within the family without excluding the world.

The Nordic Beekeepers' Associations have had close connection with the rest of the world. We are of course members and supporters of APIMONDIA. We want to support the co-operation between beekeepers and scientists around the world.

With this leaflet we want to introduce ourselves to You and give You a view of beekeeping activities in Nordic countries.



# Nordic beekeeping in figures



## Beekeeping in Norway

The Norwegian Beekeepers' Association. Founded 1884  
(Norges Birøkterlag)

Number of beekeepers approximately	4.000
Number of bee colonies app.	80.000
Average yield per colony	30 kg
Honey production app.	2.400 tons
Imports, net	200 tons
Consumption	2.600 tons
Consumption per person/year app.	0.65 kg

Number of members 3.300

Journal: Birøkteren  
Circulation 3.600 ex. Monthly since 1885

Number of commercial beekeepers 100  
Number of sideline beekeepers 1.500



## Beekeeping in Denmark

The Danish Beekeepers' Association. Founded 1866. (Danmarks Biavlforening)

Number of beekeepers approximately	5.500
Number of bee colonies app.	100.000
Average yield per colony	35 kg
Honey production app.	3.500 tons
Imports, net	1.500 tons
Consumption	5.000 tons
Consumption per person/year app.	1 kg

Number of members 4.500  
Journal: Tidsskrift for Biavl  
Circulation 5000 ex. Monthly since 1866

Homepage (english) [www.biavl.dk](http://www.biavl.dk)

Number of commercial beekeepers 150  
Number of sideline beekeepers 1.000



## Beekeeping in Finland

The Finnish Beekeepers' Association  
(Suomen Mehiläishoitajain Liitto r.y.)

Number of beekeepers approximately	4.100
Number of bee colonies app.	47.300
Average yield per colony	37 kg
Honey production app.	1.750 tons
Imports, net	830 tons
Consumption per person/year app.	0,56 kg

Number of members 2.900  
Journal: Mehiläinen

Circulation 3.300, 7 issues,  
16th volume in the format.

Homepage (english) [www.sci.fi/~sml](http://www.sci.fi/~sml)

Number of commercial beekeepers 80  
Number of sideline beekeepers 650



## Beekeeping in Sweden

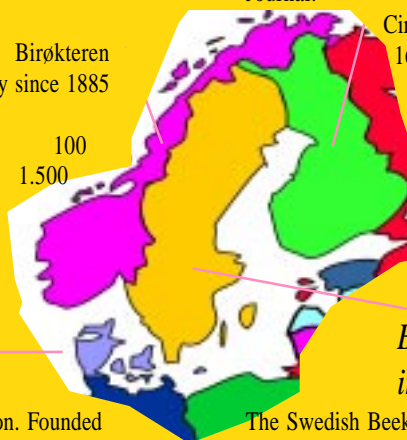
The Swedish Beekeepers' Association Funded 1897  
(Sveriges Biodlares Riksförbund)

Number of beekeepers approximately	15.000
Number of bee colonies app.	100.000
Average yield per colony	30 kg
Honey production app.	3000 tons
Imports, net	3000 tons
Consumption	6000 tons
Consumption per person/year app.	0,7 kg

Number of members: 12.000  
Journal: Bitidningen  
Circulation 15 000 ex. Monthly since 1902

Homepage: [www.biodlarna.se](http://www.biodlarna.se)

Number of commercial beekeepers 50  
Number of sideline beekeepers 200







*Asger Søgaard Jørgensen.*  
 Secretary general of the Danish  
 Beekeepers' Association

## *Meet one Danish beekeeper*

*Erling Bech is not a typical Danish beekeeper, in the sense that the variability between the beekeepers is so great. You cannot speak of a typical beekeeper.*

But he is a well-known and highly respected beekeeper. He lives in the eastern part of Denmark, in an agricultural area, with some forests.

He is 59 years old, and has been a beekeeper for nearly 40 years.

He used to keep more than 200 colonies in the traditional Danish Troughhive. Now he has reduced the number of hives and switched over to modern hives made out of polyurethane, but still he has 130 hives.

The reason for the change was mainly the higher workload of looking after the bees in the old hives.

### *Seasonal management*

Early in the spring (March) the bee hives are weighed to ensure adequate stores. Those with insufficient stores are

fed with sugar. At the same time they are checked for Nosema, mainly to avoid breeding of bees susceptible to Nosema.

The bottom boards are checked for dead Varroa mites. If there are too many mites the colony is sprayed with lactic acid.

In late April, early May, the time has come for the first super. But the bees must have filled the brood box totally before this extension is added. Frames from the brood box are lifted up into the super, and new frames with foundation are placed in the brood box. The super is filled with frames with combs or foundation. During the season the whole brood nest is changed so that the bees are wintered on clean, new combs. The old combs are melted.

In spring the bees are forced to build drone brood. Er-



Photo Bech

*Erling is one of our full-time beekeepers - with very good success.*





ling removes drone brood regularly during the spring period to fight Varroa.

The colonies build up foraging on spring flowers: willows are important.

The first flow is in May: winter rape-seed, dandelion, and fruit trees.

The honey from the rape-seed has to be harvested soon after the flow or it might crystallise.

After the first flow there is a pause until the summer flow in June - July when we have the spring rape-seed, white clover and lime trees. By the middle of July the flow has ended in the eastern parts of Denmark.

### ***Queen production***

The breeding and production of queen bees is an integral part of Erling's beekeeping. Previously he had Italian Bees, but some years ago he switched over to Buckfast Bees. According to his own tests they produce 10% more honey. They are gentle, but some lines have problems with chalk brood.

He mainly produces queens for his own demand. But this is high: in his producer colonies he changes 80% of the queens each year.

### ***Bee diseases, Varroa control***

Traditionally we do not use drugs to treat diseases.

There has been much focus on Varroa in recent years. Erling found his first Varroa in 1994.

To keep his product clean he decided to use „Green methods“ for the control of Varroa: drone brood removal, formic acid vapour, and lactic acid spraying, and recently

*Normally we can have 3 honeyflows, orchards in the spring, rape in the summer and the very delicious heather honey in the fall.*

dripping with oxalic acid.

Erling has participated in trial work together with the Danish Beekeepers' Association and the Research Group for Beekeeping, and thus he has himself helped to develop the methods.

The reason is that Erling has always tried to produce honey of very high quality. That means totally free from any pesticide residues. Until last year, when we found 1 sample with measurable Fluvalinate residue, no pesticide residues have been found in any Danish honey.

American foulbrood is not a major problem. It occurs. The treatment is something special.

You can kill the colony and clean the hive and the equipment carefully, and then use the hive again. But you can also treat the colony by transferring them to a box where they are fed to stimulate comb building. After 4 days you put the colony back into the hive (that has been very thoroughly cleaned and washed), on to new foundation. The old brood combs are burnt and the empty combs are melted. It works: the frequency of American foulbrood is no greater than in other countries.

Chalk brood has caused some concern in recent years, mainly in some lines of the Buckfast bee.





Photo Bech

*The main-part of Danish bees are buckfast and Italians. Queens are bred for at god temper and resistance to diseases.*

### ***Honey production and marketing***

Erling is not a typical beekeeper. He is one of the best, with a very high production from his bees. His average production during the last 10 years is 65 kg per colony. One year he made 25 tons of honey from his 200 colonies. The average for Denmark is about 35 kg per colony.

Erling packs part of the honey and sells it directly to consumers and shops in the nearby town. The main part he sells to honey packers.

The Danish market is highly influenced by imported honey, especially prices.

Prices for bulk honey vary but the average price is

about 20 DKr (3 US dollars) per kg. So we succeed in getting higher prices for Danish honey than imported honey. We think it is because of higher quality.

### ***Education and development***

Erling is a typical Danish beekeeper in the sense that he has always tried to develop his beekeeping. He has participated in several courses run by the Danish Beekeepers' Association, and he has close co-operation with the advisory service. It is unclear who benefits most, Erling or the advisors. He has visited The APIMONDIA Congresses several times. But only when it is abroad. He is working so much with his bees during the season that participation in an APIMONDIA Congress must fulfil his demand for a holiday, as well as giving him new knowledge.

*In the springtime the bees are used for pollination in the apple-orchards.*



Photo Flemming Vejstnes







*The Danish varroa strategy is biological  
No drugs are used for varroa-control. We mainly follow a strategy using  
different treatments over the whole season.*

**Springtime:**

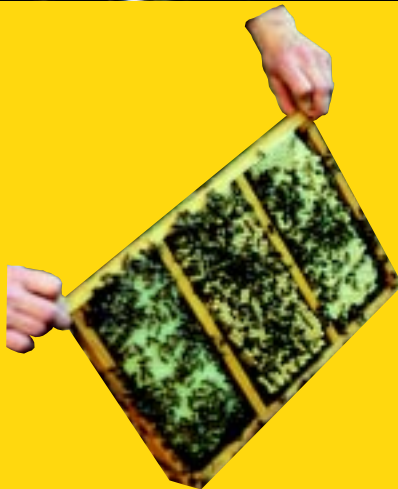
*Varroa-mites prefer drone brood for breeding, therefore in the beginning of the beekeeping-season, drone brood removal is used. Drone brood removal is very efficient, and easy. 4-8 sections of drone brood is removed.*

**After honey harvest (August)**

*Formic acid is used right after the honey harvest. Different applications are used, kråmerboards, free formic acid, nassenheider. Formic acid is a natural part of honey. Formic acid not only kills mites on the bees, but also in the sealed brood.*

**Fall (October-September)**

*Lactic acid is used as a late treatment, to control a reinvasion of varroa mites. Lactic acid is very efficient. Therefore Danish honey and wax do not contain residues of pesticides.*





**Bernhard Swienty**  
Director and founder of Swienty A/S  
Beekeeper and electronic engineer

## Swienty A/S:

Swienty A/S is one of Europe's leading manufacturers of professional beekeeping equipment.

Swienty A/S was founded in 1981 by an engineer, one of Denmark's most outstanding beekeepers Bernhard Swienty, and his wife Anna Marie. Today, Swienty A/S is an incorporated company and works out of modern offices with over 1000 square meters of retail and warehouse facilities.

In Denmark, Swienty A/S is by far the largest wholesaler of beekeeping equipment and distributes most of its products via 20 independent dealerships, who provide direct customer contact, on site services and advice to local

beekeepers.

The 1999 theme of the APIMONDIA in Vancouver, Canada, "beekeeping in the new millennium" fits well into the innovative strategy of Swienty A/S.

Innovative product development and superior craftsmanship are Swienty's key concepts to growth in the European beekeeping industry. Our Filling Machines, Insemination Apparatus, DANA api MATIC and DANA api THERMA are well known products and among the most sold products in their class.

Swienty products are exported to over 60 countries and renowned worldwide for quality and efficiency.

*Swienty A/S - Administration and warehouse facilities.*







### Filling Machines

Swienty's award winning filling machines are able to accommodate all sizes of filling operations. Our filling machines are both used by beekeepers and professional bottlers. The largest filling operation, constructed by Swienty, is able to fill up to 12.5 million jars annually.

The success of Swienty filling machines is due to their flexibility, low need of maintenance, easy operation and



superior workmanship. All machines can be expanded in a flexible manner with original Swienty lidfitters, jarfeeders, turning tables, labelling machines etc.

### Queen Breeding and Artificial Insemination Equipment



The Swienty Insemination Apparatus won the silver medal at the 1987 Apimondia in Warsaw, Poland. Due to the simple operation and high precision, this device is used by many leading research



institutes world wide. The special feature of the Swienty insemination apparatus is the utilization of micro manipulators, that reduce hand movement by a factor of 1:10. This ensures a fast and secure queen insemination. Swienty carries a complete line of insemination equipment, accessories and produces many devices used by queen breeders. Among other queen breeding devices, Swienty produces Queen Incubators, Queen Mating Hives, Queen Insertion and Shipping Cages and more.

### Other products produced by SWIENTY

Other renowned products produced by Swienty A/S are honey straining systems, honey liquefactors and extractor heaters. Furthermore, Swienty A/S produces nylon honey strainers in all sizes, honey filters, cappings, wax melters, steam-wax melters, polystyrene hives and clothing. The common denominator for all our products is: High quality.

### Worldwide distribution network

Swienty A/S maintains a world wide distribution network. Swienty A/S is dealing with all major beekeeping equipment retailers in Europe and is thus able to generate a powerful push for new products. Additionally, partnerships in North and South America ensures a continuing distribution of Swienty A/S products on the American continent.

For more information about Swienty A/S we maintain a website [www.swienty.com](http://www.swienty.com) in three different languages.



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## Buckfast Denmark

Keld Brandstrup is the biggest Buckfast queen breeder in Europe.

Strong connections with Br. Adam - have given outstanding Buckfast queens.

### **Why good queens make good colonies**

A colony is only as good as its queen. The Buckfast strain combines a number of desired characteristics, such as *hardiness, low swarming, gentleness, ease of handling, resistance to disease* and *honey gathering* ability, in a single bee. That's why it really does pay to acquire genuine pedigree Buckfast queens.

### **How to select breeder queens**

Anyone can select a queen for breeding purposes. But like most professionals we require statistical evidence to back up our judgement, so our extensive breeding records and detailed evaluation system helps us to spot the queen that is suitable for use as a breeder.

### **Starting right**

The Buckfast bee in Denmark is derived from original breeding material imported from Buckfast Abbey, England, over a period of many years. The purity of our stock has been maintained because both the male and female parentage of each queen is known with 100% accuracy.



### **Introducing Keld Brandstrup**

*He has kept bees since 1980. He is the leading Buckfast breeder in Denmark and runs over 400 colonies (all with island mated queens) for honey production. A Bee*

*Disease Inspector himself, previously serving the Board of the Danish Commercial Beekeepers' Association and the Board of the Danish Beekeepers' Association. He lectures in Europe and North America, mainly about the breeding of the Buckfast bee.*

### **Line evaluation**

A large number of different breeding lines are kept at all times. To obtain reliable statistical data, colonies headed by sister queens are evaluated as units, to see if a particular line performs well throughout the entire beekeeping season under all field conditions.

### **Colony evaluation**

Every time a colony is examined it is given grades on a **scale** of 1 (low) to 5 (high) *based upon fixed criteria* for the characteristics of *temper, behaviour on the comb, and inclination to swarm*. At the end of the season they are collected and computer analysed. Note is also taken on *honey production, Nosema resistance* and *hygienic behaviour*.

### **Potential Breeders**

In this way, lists of potential breeder queens are gradually obtained, and the choice between one sister queen and another is often finely balanced because it is rare for two queens of the same line to be used as breeders in the same year. So, ultimately, the beekeeper's experience, knowledge and judgement are required if the correct selection is to be made.

### **Age and performance**

Most queens are two years old when they are used as breeders. Because they remain in their colonies throughout their working life, their performance can be monitored long after their daughters have been raised and mated, giving further valuable information about their character and behaviour.

### **Br. Adam's legacy**

*Br. Adam Kehrie* was in charge of Buckfast Abbey's bees from 1919 to 1992. He founded the Buckfast strain and introduced a method of queen breeding based upon purity of stock, controlled mating, precise records and judicious selection. Br Adam never sought to keep the Buckfast bee for himself, and that's why we are pleased to carry on his work today. Moreover Buckfast Denmark is authorised by Buckfast Abbey as an official supplier of Buckfast queens,



to maintain the good name of Br. Adam and the celebrated strain the he created.

### ***Island mating***

The small island of Nexelø lies two miles from Havnsø harbour on the west coast of Sjælland, a short drive away from Reerslev. It is free of feral colonies and the islanders do not keep bees, so it is a safe location for isolated matings. Ten strong colonies headed by identical sister queens are used to produce the necessary drones, which ensures that the queen is mated with males of known parentage. Colonies remain on Nexelø for three weeks, and then are returned to a temporary apiary where the queen is checked and her brood is examined prior to despatch.



### ***Artificial insemination***

Since 1992, pedigree Buckfasts have also been raised at Reerslev using award-winning artificial insemination equipment, partly because the queen rearing season in Denmark is so short, and partly because artificial insemination offers the chance of trying out new genetic combinations. Every artificially inseminated queen is introduced into a mating hive for testing before despatch.

### ***Pedigree Buckfast Queens of proven value***

Arguably the most important aspect of hive management concerns the nature of the queen. That's why the acquisition of a genuine pedigree Buckfast queen can make beekeeping more enjoyable and more profitable at the end of the day.

### ***Stock improvement***

Buckfast Denmark queens are identical sisters of the queens we use in our own colonies, and come with an authentic pedigree certificate as proof of purchase. Moreover, Buckfast Denmark is authorised as an official supplier of Buckfast queens, to maintain the good name of both Br. Adam and the celebrated strain that he created.

The Buckfast bee is a hybrid that requires the periodic introduction of new blood to prevent inbreeding and to accentuate certain genetic attributes, such as mite tolerance. Consequently, new combinations are always being tested for possible future incorporation into the strain.

### ***Europe and beyond***

Beekeepers in almost every European country, have taken advantage of the opportunity to obtain Buckfast Denmark queens. In addition, multiple mating stations in Europe

have been supplied with drone breeders.

### ***Choose from these queens***

- \* **Breeders**  
Due to high demand, prior agreement is usually required for the supply of suitable breeder queens.
- \* **Artificially insemination**  
Available from early August to mid September. Limited numbers, so please order early to avoid disappointment.
- \* **Island mated**  
Ready for despatch from July 1<sup>st</sup>. until September 30<sup>th</sup>. Suitable for the production of F1 colonies.
- \* **Random mated**  
Supplied during July, August and September. Mated in areas of secure drones. Ideal queens in good honey regions.
- \* **Unmated**  
Available from the beginning of June until the end of August. Despatched within 24 hours of emergence.

### ***Satisfaction guaranteed***

All Buckfast Denmark queens are mailed by first class postage and come with an authentic pedigree certificate as proof of purchase, a Danish Health Certificate that is valid in all EU countries, and a 100% money-back guarantee.

### ***Special service to queen rearers***

For queen rearers wishing to graft larvae of Buckfast Denmark breeder queens, frames of eggs (12 to 24 hours old) may be ordered one month in advance of collection.



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## Valonen Honey Farm

The chairman of both the Finnish Beekeepers' Association and the European Commission's Standing Group on Beekeeping also runs a professional beefarm.



*Average yield is 55-60 kg*

### **Basic techniques**

Kari's father was a dairy farmer, but started sideline beekeeping in 1952. Kari began beekeeping in 1985. Today their 25 bee yards are located on a twenty kilometer radius from the farm. There is no migration management and the bees are overwintered mainly in two boxes in the permanent yards. The frames are standard Langstroth and Kari uses polystyrene boxes. The average yields per hive vary a great deal, but the long time average is about 55-60 kilograms.

The old dairy barn has been renewed for beekeeping. Extracting room, honey packing and a small honey shop consider altogether 150 m<sup>2</sup> warm room. Another 90 m<sup>2</sup> unheated room is for storing equipment. A normal van is used for transportation.

The honey is harvested with a bee blower. The boxes are brought on pallets to a warm room next to the extracting room. Uncapping is done with an automatic uncapping machine. Rail from the uncapping machine leads the frames to the 64-frame horizontal-axle extractor. Then the honey is pumped to clearing tanks overnight and after that to the storage containers to wait for packing.

*Kari Valonen - the president of the Finnish Beekeepers' Association and the chairman of the European Commission's Standing Group on Beekeeping - is one of the nearly one hundred professional beekeepers in Finland. Kari, his wife Kathy, who is originally from Madison, Wisconsin and their four sons (Jussi 11, Matti 10, Esa 8 and Pekka 4 years old) live on a farm in Lahdenpohja village near the town of Lahti in Southern Finland.*

*Just now the Valonen Honey Farm has about 300 beehives. There are also 44 hectares of fields, where they cultivate mainly oats, barley and rape seed and 56 hectares of forest. Two thirds of the Valonen family's income comes from beekeeping and one third from agriculture and forestry.*





Marketing adviser  
Anneli Kankare

## Using Honey for skincare in the Sauna

Sauna honey has become quite a popular cosmetic in Finland. Special Sauna Honeys are produced for the skin and are used in warm sauna. The original product is honey which is quite roughly crystallized to give a slight defoliating effect. Many varieties contain a bit of etherical oils for healing and scent. After bathing the skin feels really fresh and also the muscles and mind recover from stress and pressures.

### *How to Use Honey in the Sauna*

The sauna should not be too hot. Mild temperatures between 60 and 80 degrees centigrade will do fine. Before entering the sauna people usually take a shower. It is a good idea to dry the skin before using sauna honey or to go straight in to the warm room with dry skin.

At first no water is thrown on the hot stones. You can just spread the honey with your finger tips on your hands,

shoulders, neck and chest. Then slightly massage your face and the area around your eyes with Sauna Honey.

You can feel, how the first honey drops disappear into your skin in five or ten minutes. If you have tension in the nape of your neck or on your shoulders, you can slightly massage them with Sauna Honey. After giving a good Sauna Honey treatment all over the body you can throw a little water on the hot stones. Taking a nice shower after the steam will make you feel really relaxed and your skin feels smooth and clean.

### *The Structure of Sauna Honeys*

Originally the sauna honey was used straight from the Sauna Honey jar. Now there are several types of tubes which make the honey easier to dispense. Sauna honey is usually kept outside the hot room and taken inside only during the bath.

Usually the crystallisation in the honey is quite rough to give a defoliating effect to the skin. Also liquid honeys are used in Sauna. Etherical oils like pine (*Pinus*) oil or juniper (*Juniperus*) oil are used to give a pleasant scent. Some aromatherapeutic effects are also suggested with different herbal oils. Caution: one should really know what to do with herbal oils because some of them have really strong effects on skin. Pure honey was the first version used in the Sauna and is still very popular among Finnish people.

More information. Anneli Kankare, Finnish Beekeepers' Association

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Engineer  
Pekka Karoniemi  
Editor  
Lauri Ruottinen

## Bears and beekeeping

There are about 1000 bears (*Ursus Arctos Arctos*) in Finland, 800 in Sweden and bears are commonly found in Norway. Overlapping with beekeeping is natural. The number of bears and damage to bee hives rose linearly in Finland until protecting hives against bears with electrical fences began in the early ninety's.

Pekka Karoniemi in Finland has been working for more than 10 years to develop suitable equipment for bear control in bee yards. Pekka has his 60 beehives in Äitsaari in South - Eastern Finland. In the area where Pekka lives - 75 km<sup>2</sup> peninsula - there has been annual count of six to twelve bears.

### Using GIS - geographic information system - to mapping and recognise bears and prevent bear damages

Pekka Karoniemi has prepared a large geographical information system and a database of bears, beehives and summarised bear damage in Finland. Comparing the information the officers in the Ministry of Agriculture can make decisions whether the beehives can be economically protected or there is need for other procedures like elimination of bears. In densely occupied professional beekeeping areas mainly in South - Western Finland the latter possibility is often necessary especially if the bears become tame. In the eastern part of Finland, where the bee density is not so great, the bee yards are usually protected by electrical fences. None of the 82 bears which were shot in Finland in 1998 were shot for damaging to beehives. The



*Bears dig under the wires towards a bait hive*

other sad aspects are the first bear shot in Finland 80 years was killed by a bear in Finland, and also one injured shot in 1998.

In 1998 there were 200 FIM (50 000 \$) damage to beehives caused by bears. Altogether 350 apiaries were protected with electrical fences. The Finnish State usually compensates for both the damage and fences.

Only about 2 - 3 % of the damage is caused by bears. The bears and bees can live for years side by side without damage. When bears stay a long time in the same region they find 90 % of beehives along their passages. So called „honey“ bears can also enter beekeeping equipment houses or extracting rooms if the buildings are too weak to keep them out.

### Protecting bee yards against bears

Protected bee yards are also interesting to bears. They usually dig and try to go under the wires. The position of the hives inside the fence is planned so that there are no hives in the corners. Then the digging bear would not tear down the corner bar of the fence. One of the hives inside the fence is situated as bait for the digging bear. The hive should not be closer than 0,7 m to the wires. The bear nearly always digs towards the bait hive and gets a permanent lesson from an electrical shock, and escapes.

The normal battery gives about 8.000 V voltage to the wire. So it is quite a bit stronger than normal cattle wire. The battery must be replaced twice a month. The latest inventions for the fences are loud repellents. The current to the wires is connected only when somebody touches the wire and 110 dB horns goes off. In this system one battery is enough for summer (400 days). There are also sophisticated solar loading systems available for the batteries.

Many beekeepers also think that the electrical bear fence is a kind of safety quarantine for them -selves when they are working in the bee yard. The honey bears closely watch their “haul” and see the beekeeper as a competitor.

More information Pekka Karoniemi  
Email [pekka.karoniemi@saimaanet.inet.fi](mailto:pekka.karoniemi@saimaanet.inet.fi)





Uncapping wax with honey is handled in a wax extractor. Total annual production is normally about 15-18 tons. All the honey is packed with a semiautomatic packing machine, mainly in 500 g plastic jars. From -92 there has been also a "Valonen Honey Farm" label in use. Honey is sold mainly to twenty retailers around the city of Lahti.

### ***Varroa's resistance against fluvalinate caused serious damage in 1998***

The first detected Varroa's resistance against fluvalinate in Finland and in fact in the whole of Northern Europe was found from Valonen Honey Farm in autumn 1998. Apistan had been used for six years to control Varroa. Suddenly the Apistan treatment had no effect at all on certain yards. In resistance tests in the Agricultural Research Center mites in those hives were found strongly resistant against fluvalinate. During winter 1998 - 99 the total losses were about 20 % of the hives. Normally winter losses are less than 5 %. Afterwards the same kind of resistance has been found in several places mainly in the South-Western part of Finland. The origin of resistance is supposed to be from imported Italian queens since 1994.

### ***Kari is the president of the Finnish Beekeepers' Association and the chairman of the European Commission's Standing Group on Beekeeping***

As a chairman Kari says that beekeeping seems to have a bright future in Finland. Honey consumption has roughly doubled every decade during the last thirty years and is now about 550 g/capita. But we still have a way to go! says Kari because the average consumption is 200 g more in other countries in the EU. Finland imports annually nearly 30% of the total consumption (2700 tons). A national quality control system has been recently developed by the Beekeepers' Association and the consumers can rely on the high quality of Finnish honey.

One threat to production is the age

*Kari Valonen Lahdenpohjantie 53,  
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distribution of beekeepers. Average age among beekeepers in Finland is now 58 years. Another, also international, threat is the „falsified“ honey which has been detected on the world market.

The European Commission's Standing Group on Beekeeping is an opportunity for the producers, industry, traders and consumers to give their views to the commission and discuss current matters in beekeeping and honeymarkets. Currently the European Unions honey directive is under a simplification process. Also the rules for organic honey production are under construction.

*„The world around us is getting smaller and the pace of life is getting faster all the time. Many things are changing rapidly. We have to be alert and well prepared. International co-operation of beekeepers is getting more and more important all the time. If we all do our job well, beekeeping does have a great future in the new millennium“* says Kari.

### ***Extracting honey with the 64-frame horizontal-axle extractor***





By  
Aapo Savo

## OY HUNAJAYHTYMÄ -

HONUNGSKONCERNEN AB - FULL SERVICE HOUSE FOR BEEKEEPERS

Oy Hunajayhtymä -Honungskoncernen AB has been working in the honey and beekeeping business for 30 years and has become the most important company in the field in Finland. HY has a brand new honey packaging area and it has improved its status as a honey packager, of both high quality Finnish and imported honey.

HY was founded in 1969 by beekeepers and since that it has been one of the basic elements of Finnish beekeeping. HY has been successful in pricing honey at a steady level. It has also been able to keep a buffer store of honey between good and bad honey seasons in Finland. Storing has levelled honey prices, which are normally greatly affected by various production and

marketing activities.

The company packages over one third of the Finnish honey crop. In addition it imports and packages imported honey. The total annual amount of honey it packs averages 1000 tons. Its clientele include the biggest wholesalers in Finland. HY is the most versatile and biggest beekeeping store in Finland. HY's status as a leading honey packager has involved sizeable renovations in packaging materials. HY has a large selection of beekeeping materials and it serves both professional and amateur beekeepers. The old packaging area is developing into a wax-foundry and this improves the service.

HY also has a very unique service. The company sells crystallized and liquid sugar syrup for wintering feeding, which in itself is nothing unique. HY does this all over Finland with its own cargo vehicle. This service has been around for about ten years and it has been greatly appreciated by beekeepers. This service has saved a lot of their money and time for beekeepers.



*The chief of HY Erkki Ruuhonen in front of the entrance of the brand new packaging building.*

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# HUNAJAYHTYMÄ - EVERYTHING FOR PROFESSIONAL AND HOBBY BEEKEEPING



## Plastic beehive, model Neopac

- including three magazine, board with net, cover and feeder
- Langstroth size, (we have also Farrar-magazines)

## Vertical honey extractor for 64 frames

- stainless steel
- possibilities to create a perfect line of honey handling with uncapping machine and wax extractor



## High quality protection clothes made by Hunajayhtymä

We have co-operation in other countries with next companies:

**Italy:** Lega  
Alberto and Sergio Giordan  
Carlo Bartoletti

**Germany:** Graze  
Carl Fritz  
Hobby Kreation

**Denmark:** Swienty

**Sweden:** Oscar Gustafsson & Co

**Austria:** Wolfgang Singer

**England:** Vita Europe Ltd.

**Norway:** Honningcentaralen A/L



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## A NORWEGIAN IN HARMONY WITH NATURE

Ingar Lie is fond of nature and enjoys life in the country. He is very involved with biology and technology and he feels it is a privilege to harvest from nature without exhausting its resources.

Ingar Lie (51) from Tønsberg in Norway has been a professional beekeeper for five years. I fear problems in connection with varroa, he says. Till now I have used formic acid after feeding in the autumn and I have been cutting

capped drone brood in early summer. It is not enough, and we have some faith that treatment with oxalic acid will help even if the temperature is low. But Norwegian honey is the best in the world! Nothing in the whole world can beat the pure quality of the honey that we collect from the Norwegian heather, he smiles.

He started up ten years ago with a single hive in the garden. One winter's day it was overturned by heavy snow and young Lie had to scoop the freezing bees back into the hive with a plastic spoon. The bees tolerate a lot, - it is fascinating, he laughs.

He is fond of nature and enjoys life in the country. He is very involved with biology and technology and he feels it is a privilege to harvest from nature without exhausting its resources.

Gradually his business expanded with more and more hives. Since 1994 he has been a professional beekeeper. He has 200 producing hives, so every autumn he has to prepare about 240 colonies for the winter. In Norway 200 hives are a full time job. You won't find many Norwegian beekeepers with more than 250 hives.

Only a few earn their major income from beekeeping. Most of Norway's 4000 registered beekeepers have only a few hives and are subsequently not economically dependent on the honey harvest. Mr. Lie is not trying to hide the fact that it is difficult to establish a favourable

*Long time before the snow has melted Ingar Lie looks into the hives to judge the conditions. But he has to work quick, the weather is still very cold.*





economy by selling his honey alone. In 1998 Norwegian beekeepers produced only one third of the amount of an average year. This meant that Ingar Lie delivered only 3 tons of honey. He sold all of it to a co-operative called the "Honningcentralen" (The Honey Central, HC) in Oslo, the capital of Norway. Together with about 3000 other beekeepers he owns shares. Therefore he is guaranteed to deliver all his honey even if there is an overproduction for several years in a row. The HC has to guarantee a stable supply to the few chain stores in Norway. When there is a shortage of Norwegian honey in stock the price may rise considerably in order to slow down consumption, and in this way ensure the honey supply until next autumn when the beekeepers start extracting their honey again. Last year's honey price was very good indeed. Ingar Lie received US\$ 5.50,- pr kilo honey delivered. He takes care of the extraction and sieving,- the rest of the processing and handling is taken care of by the HC. The buckets he delivers contain approx. 20 kilos and he receives the main part of his pay immediately after delivery.

### ***The Carnica Bee - a Norwegian Favourite***

Ingar Lie breeds all the 50 to 60 Carnica queens he will need during the season himself. They are brought together at a Carnica mating station some miles away. Mr. Lie takes part in testing the queens in a project initiated by The

*It is important to find areas with a heavy nectar flow. The summer is short and the natural vegetation is the main source.*

Norwegian Beekeepers' Association. This testing gives Ingar access to the very best Carnica queens in the country. In addition there are breeding programs for the Nordic Brown bee. Others stick to the Buckfast bee.

However, most beekeepers have mixed queens bred at home by accident (swarming). These are often aggressive and according to Ingar Lie this is why so many beginners lose their enthusiasm. Good tempered quality bees are essential to be able to enjoy beekeeping and to efficient management.

### ***A Short and Explosive Spring***

Ingar Lie lives on the coast some 100 kilometers south of the capital, Oslo, and the bee season starts around first of April. Last winter the bees were clustering during the winter season for almost 6 months.

In Norway spring explodes. Yellow fandens (cloven foot) and downy willows are important pollen resources, but blueberries and white anemones also contribute to the stimulation of egg laying and brood rearing before the hectic summer season. The important thing now is to increase the strength of the colony from somewhat less than 20.000







*Heather (Calluna vulgaris) is the main nectar source in Norway. The heather is becoming overgrown by other plants due to lack of grazing.*

Norwegians are on holiday. Now the sun is shining 24 hours a day in the north of Norway and even here in the south at Ingar's the sun is shining from 3am until 11pm.

Ingar Lie will now start harvesting his summer honey, which will be of a very light colour and a mild taste. He has between 10 and 15 hives on each of his 16 apiaries. Some are placed in the woods while others are placed on cultivated land. He is on the outlook for sites that offer good diversity. Cultivated land with brooks and thickets is nice, but woodlands will also yield excellent honey. Compared to many other countries Norway has only small scale agriculture. Every little nook has been cultivated and made good use of. The result of lower production prices is that many have left their farms and the pastures are deteriorating. It is sad to see that we can no longer afford to farm the land when people are starving in other parts of the world, he reflects.

The summer flow yields approximately 30 kilos per hive in average.

weary winter bees to hopefully more than 60.000 industrious summer bees.

### ***Summertime – Make The Most Of It***

Everything is concentrated on making the bee colony strong enough to benefit from the most important plant of the summer, wild raspberries. They usually bloom from the beginning of June until July.

During the short and light Norwegian summer Ingar Lie works practically around the clock. He maintains that each hive should be treated individually. Beekeeping is no industry, but a craft, Mr. Lie says.

The main summer flow lasts for 2 –3 weeks only, therefore it is essential that the sun is shining and that there are no cold and dry northern winds. While his family is vacationing in their caravan by the sea a few miles away, Ingar toils over his beehives.

All Norwegian beekeepers use the same frame size. This is rather extraordinary for Europe and means that anyone can easily buy used equipment from others and mix it with their own.

In the middle of July almost all

*Heather honey has a strong and aromatic taste. It is exported from Norway to different countries.*





*Due to the short and hectic season it is vital to inspect the hives carefully. Ingar thinks beekeeping is a handcraft rather than an industry. Each hive is treated individually.*

## ***The Purple Fall***

Between 15 – 25 July Ingar loads the harvested hives on to his lorry and trailer and travels 200-300 km inland in a northern direction to harvest from the magnificent heather. During August each bee colony collects about 20 kilos of aromatic heather honey. I am quite certain that heather honey is the best in the world, Ingar Lie laughs. All surplus heather honey we cannot sell in Norway will be exported to other countries in Europe. Heather honey is loved by those who knows how to appreciate life, he adds. Heather honey from Norway is a delicacy like Russian caviar, but not so expensive.

September is the busiest month of the year. During those short, cold and crystal clear days all the hives must be harvested, thoroughly checked and fed. In any case he has to be finished with feeding and two weeks' treatment with formic acid to fight off the varroa before the frost comes in the middle of October.

Heather honey is very thick and jelly-like and Ingar Lie has to use an ingenious device with hundreds of needles which penetrate each cell in order to loosen the honey. The honey loosener is a Norwegian invention which is sold in many places around the world. All Norwegian beekeepers working with heather have one.

## ***A Protected Country***

In Norway the conditions for beekeeping are very good. Norwegian nature is relatively clean and can boast of great diversity. There is a good market for honey among the 4,4 million inhabitants. However, Norway is a divided country. The eastern parts around Oslo have struggled with varroa for 5-6 years, while the west and northern country so far have been spared due to the high mountains in between. There are strict rules as to where you may move beehives, hopefully to prevent spreading the mite.

The tracheal mite is not found, American foul brood is very rare and other diseases are almost not found or are a very small problem so far in Norway. These days our veterinary regulations are being harmonized with those of the European Market of which Norway is **not** a member. This will mean an opportunity to a much more liberal import of bees and bee products. Ingar is afraid this may cause increasing problems with diseases all over the country. The



European Market has been established to promote trade and nothing else, he maintains.

The average age of beekeepers is rather high and it is difficult to recruit new ones. Many quit because of varroa, he says thoughtfully.

## ***Winter Bees – What Are They?***

There has been a lot of discussion lately about the difference between summer bees and winter bees. The Norwegian winter can last for six months and have weeks of temperatures 20 – 30 degrees below zero and therefore it is important that the winter bees are well prepared with adequate protein reserves. Ingar Lie is of the firm opinion that the heather flow enables the queen to produce eggs right to the end of August. Each colony is being fed with something like 15 – 20 kilos of sugar mixed with water, but all the same the bee colony will need added food in the early spring in order not to starve. Many colonies have a critical period when the winter bees are replaced by new bees at the beginning of May.

## ***Clean Products From Nature***

In Norway the use of pesticides is not recommended. You fight the varroa by cutting away half a frame with drone brood every ten days in the spring and early summer in addition to the two weeks' treatment with formic acid after



feeding in the autumn. Mr. Lie was taking part in a project trying out oxalic acid last autumn. Formic acid works, he says, but it works only during relatively warm days. My hope is that oxalic acid will work better on the cooler days.

I hate mites but pesticides are absolutely the last resort, he says firmly. It is bad enough that it is permitted to use glyfosat for spraying in the woods here. We must respect the fact that human beings are part of nature. My credo is: By nature, for nature and with nature, he says.

### ***Norway is a Rich Country***

Norway is a wealthy oil producing country. Unemployment is low and on the whole people earn enough to meet their needs. A factory worker makes about US\$ 25,000 a year. With 200 producing hives and an average honey output Ingar Lie will make US\$ 25,000 – US\$ 32,000.

The sugar he uses costs about 1 \$- per kilo and he needs 15 – 20 kilos per hive. The price of sugar is steadily rising while there is a downward pressure on the price by honey imported from Argentina to half the price.

But Ingar thinks there is a great difference between

***Ingar Lie uses Formic acid after honey harvest and Dronebrood removal during springtime to fight Varroa. No pesticides!***



Norwegian and imported honey- so great that the difference in price is fair.

### ***State Contributions***

The state transfers a lot of money to Norwegian agriculture. In different ways public authorities want to stimulate food production in this long and unproductive country. Ingar Lie has no farm which means that he actually has to argue with the Ministry of Agriculture to make them understand that beekeeping is a farming industry.

Ingar receives US\$ 0,40 per kilo as a production subsidy and US\$ 0,50 for the first 15 kilos of sugar he needs. In addition he can apply for money for works building and finding new ways of selling his honey.

The most important thing, however, is that if the honey season fails he will get compensation. Then Ingar must provide documentation on how much honey he has sold for the last five years. He estimates an average and the authorities will pay 73% of the difference between this year's output and the average output. In Norway this assurance is a necessary condition for staking everything on beekeeping as a full time occupation. Anyhow, it is a very risky business. Two years out of five I have had to rely on these regulations, Mr. Lie says.

### ***The Magic Winter***

Ingar ends the autumn with long walks in foggy spruce forests hunting for hare. Now he has changed from bee veil into heavy woollen clothes. His hobby is breeding dogs for hunting hares. Hunting in the woods means open fires and good stories as well. It is considered a disgrace if you are unable to light a fire in the open air with one match only - whether it is snowing or raining. Later in the winter he works as a lumberjack with two friends. They bring out the lumber by horse power, and Ingar always brings along his Norwegian horse called "Blackie".

In the middle of the winter the snow might very well be more than one meter deep and the temperature 20 Centigrades below zero. There is no daylight before 9am and by 3.30pm "Blackie" must be ready to return. Norwegian nature is resting and the bee colonies are asleep in their hives under a cover of the purest snow.

In the evenings you may see a yellow light from the windows of Ingar's work room. Take a peep and you will see him extracting golden heather honey. In this room the temperature is are 27° C plus with lots of happy memories of long walks in the woods.





Arnulf Moe  
Director of Honningcentralen

## THIS IS THE HONNINGCENTRALEN A/L

Honningcentralen A/L was established in 1927 and is owned by 3.000 beekeepers. During all these years high quality has been a top priority, and this has resulted in exquisite honey with an international reputation.

From year to year, our main task is to regulate the fluctuating and weather dependant production, to make sure that the beekeepers have a steady market and that the consumers have a steady supply of Norwegian honey.

The Honningcentralen has one of Europe's most modern production plants with a capacity of more than 1.000 tons of honey per year. At present our main products for the consumer market are a light coloured, mild tasting multiflora summer honey, a pure heather honey rich in taste and colour, and a balanced mixture of the two which is a traditional favourite in Norway. Norwegian heather honey is exported to Denmark and Germany. In addition to supplying the grocery business we also deliver our honey to food and pharmaceutical industry.

The Honningcentralen receives and disposes of beeswax, and supplies the beekeepers with all the necessary equipment for their beekeeping activities.

In addition to the marketing of Norwegian honey The Honningcentralen is responsible for approx. 50% of the import of honey on the international market which we process

and pack for the Norwegian market. Honey consumption in Norway is constantly growing, demand which indicates a promising future demand for honey.

### *The stat of the market*

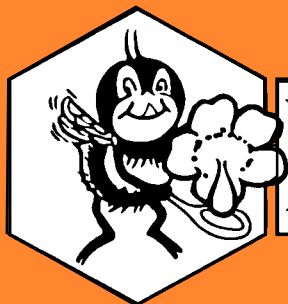
Trade in general and the grocery business especially are constantly demanding better quality and guarantees of delivery as well as knowledge of proprietary articles of today. Through The Honningcentralen the Norwegian beekeepers have been able to establish their own honey brand and trade mark as the sole market leader in all the Norwegian stores. To maintain and preferably increase our position it is of growing importance to work together to obtain a higher producer price and more stable terms of deliveries for the retailers, as well as marketing and sales of recognized trade marks to the consumers.

*Honning Centralen*

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*N-0661 Oslo - Norway*

*Ph. 00 47 - 22 65 85 00 Fax 0047 - 22 63 00 28*



**HONNING**

*Centralen a/l*





# NORWEGIAN HEATHER HONEY

## CALLUNA VULGARIS

Short and hectic summers with clean air, light nights and a special flora give the delicious heather honey which is so well known to Norwegians. A few weeks in late summer when the *Calluna vulgaris* is flowering the beekeepers move their beehives up to the mountains to

harvest the heather honey.

Norwegian heather honey is always in particularly great demand because of its characteristic quality, colour and purity that guarantee healthy food and a good supplement to domestic medicine and nutrition.



# SJOLI'S HONEY LOOSENER

The Norwegian honey loosener is well known by beekeepers who produce heather honey.

## ***How to use the honey loosener:***

Place the honey frame between the sets of needles and pull the handle to the right.

When the operating bar is worked downwards the needles enter the honey cells.

If a needle encounters the wall of a cell the needle will either stop or bend to one side. When the bar is lifted up again it will make the handle move one step to the left, which also means that the needles move half the width of a cell to the left. As there are one-third as many needles as there are cells in the frame the

needles will have penetrated each cell in the frame twice when the bar has been operated down and up six times, and the handle has then moved as far as the cogs permit. The bar must not be worked too vigorously as this might cause the handle to jump two steps instead of one.

One can adjust the handle to move two steps instead of one by changing the position of the arm. It is not necessary to uncap the combs before loosening and extracting other honey than heather, but uncapping can save time when straining heather-honey.







Erik Österlund  
Editor and Beekeeper

## Sweden is fantastic!

Sweden is not only blue and yellow, but also green and full of explosive growth power.

I live in Sweden and I love this country. It's not only blue and yellow, but also green and full of explosive growth power. In spring, trees, flowers and bees develop explosively. It makes the country green and fresh and full of colours. The hard ice melts and the 100.000 blue lakes become free again after the winter. Not only lakes, but many rivers help water the country.

Sweden is a 450.000 km<sup>2</sup> small country high up in the north with 9 million people. A Tanzanian beekeeper visited a couple of years ago and was amazed at how few people



Photo: Erik Björklund.

*A typical red Swedish wooden house with white corners. A couple of old type of house-like beehives are placed among the cherry trees. They need to be pollinated by the bees, to get a good crop of berries.*

Map: Art Erik Österlund





Photos: Bo Lundberg



*Important plants for the honey crop, wild Raspberry above, Rape Seed to the left and White Clover.*

there were here.

– You have trees instead of people, he said.

Yes, that's an impression you can get. And the Europeans more to the south have discovered this and come to refresh themselves in our environment. Some have even bought houses here and started keeping bees.

### ***The Gulf Stream***

Even if Sweden is placed very high in the north we are blessed with the warm Gulf Stream from the Sargasso Sea running along the coast of Norway. This usually gives us in Scandinavia a favourable climate comparable to countries much more to the south in other parts of the world.

The differences between the seasons are usually big and summer is often short and intense. Nature is working hard to compensate for the short summer and gives a lot of nectar from flowers and trees.

### ***Bees, beekeepers and honey***

In older times most people lived in the countryside and every second house had a few straw skeps with bees. Today the situation is different. People live mostly in towns and villages. Most of them don't know anything about bees and their important role in the ecological system, but many like honey. Therefore we have to import the same amount as we produce so that people can consume their 700g per person a year.

The 3.000 tons of honey produced here comes from about 100.000 bee colonies, which tells us they average about 30 kg a year. The 13.000 beekeepers in Sweden have on average 7-8 hives with bees. Most of the beekeepers are hobbyists that have learnt and understood the importance of their small friends. It is not difficult to keep just a few hives and get a couple of buckets of honey per year. But the bees are of vital importance for the environment, for pollination







*Keeping bees gives you lots of opportunities, not only will you get to know one of the most fascinating insects in this world, but also many interesting fellow humans on this planet. As seen here around a beehive during coffee break.*

of commercial and wild plants.

### ***Honey plants***

The most important plants that give you a crop are wild Raspberry, White Clover, Rape Seed (Canola), Fireweed, Heather and honeydew. In spring different Salix species are important, like Dandelion and Maple, and of course trees like Apple and Pear. In the south there are quite big orchards that need commercial pollination.

### ***The beekeeper lives a rich life***

When you keep bees it gives you lots of opportunities to meet other people, other beekeepers and men and women interested in nature and natural, healthy products. You gather together in local associations and club meetings and activities. You simply get a richer life in many ways. So if you are not yet a beekeeper, don't resist it any more. Join us! You will not be disappointed.

### ***A lot of possibilities***

Now, beekeeping is an occupation with a lot of possibilities, even in Sweden, there are some that make their living from it. Maybe ten. But many more are so called „sideliners“. Also with as few colonies as 50, you can make a substantial contribution to your living. If you keep the costs low and don't invest in all the paraphernalia available. A fork can for example be economical for uncapping up to a few hundred hives. It is also important that you place your apiaries in the right place in the landscape, with www, way, water and wind protection. It is also good for you to put them in the right part of Sweden for maximum output, somewhere between Stockholm and Gothenburg, maybe a little closer to Stockholm. A special area in Sweden which still only a few beekeepers make use of, is moving their bees to the big areas of heather in late summer. But like in many other similar places in the world the bear problem is growing in these areas.

### ***Breeding and selection***

In the big lakes, which are not few, and in the archipelago around the coasts of Sweden, you find many islands. These islands give you the necessary distance to the mainland to create an isolated area, perfect for mating stations for virgin bee queens. This provides great possibilities for a successful breeding and selection work with bees. Also in



remote areas on the mainland you find suitable areas than can be and are used for this purpose. With these mating stations you control the heritage of the drones, you are not restricted to using selection only when you choose the mother colony of your new honey bee queens. You can choose from which colonies the drones come, and which will mate with your virgin queens. If you use these opportunities well you can be very successful in making a better bee. Also you find that many islands are used this way. They are used for making better Buckfast bees, Carniolans, Italians and Brown bees (*Apis mellifera mellifera*).

### ***What about pests***

What about pests and mites then? Well, American Foul Brood is present, but not a big problem, even though no chemicals are used against it. Nosema is not talked about these days and no drugs used. Chalk brood you find now and then and sometimes it can give some problems. The tracheal mite is not found in Sweden, though it is present in neighbouring countries. The varroa mite is expanding its

area steadily. Apistan is used but we try in Sweden to use biotechnical methods such as using organic acids and cut drone brood. Also we hope that so called „varroa tolerant“ bees one day will be normal in beekeeping so we don't need any kind of drugs.

### ***We work together***

If you come from a hobbyist background it can sometimes be difficult to get rid of many unnecessary habits, which as a hobbyist you get on with for fun and maybe more for your own well being than your bees. You can say that we are on our way building up good commercial traditions in Scandinavia. In this we are also well aware of the importance to work together, both hobbyists, sideliners and commercial beekeepers, for keeping and building up a good market for different bee products and to make bees, their importance and bee products, well known among ordinary people and the authorities.

*Breeding and selection can give you bees that are easy to handle, disease tolerant and provide big honey crops. The honey bee queen is the most important individual. Marked, she is easy to find, which sometimes is needed.*



Photos: Erik Osterlund.







Aulis Syväjärvi  
department of media at the  
Restaurant Academy  
Beekeeper

## Grythyttan

– a place for culinary experiences and recreation for the the soul.

In the picturesque village of Grythyttan you meet the charismatic landlord Carl Jan Granqvist. Here in a colourful way he describes the surroundings and the development of the village into a culinary center in Sweden.

“When I first came to Grythyttan 25 years ago I was overwhelmed by the beauty and poetry of the scenery. I saw a mosaic of glittering lakes and small rivers surrounded by high wooded hills and a few small farms. It became a great challenge for me to restore and develop Grythyttan Inn. This inn stretch its history back to 1640. In this work I have had a lot of help from committed and competent forces from the local association for preservation of local history and traditions.

The geographical area with its 400 lakes and small rivers is pretty close to the densely populated lowland to the capital, Stockholm, about 240 km away. This means that our guests from the middle of Sweden can reach a beautiful northern type of environment in a couple of



Photo: Aulis

*Grythyttan is a picturesque village in the middle of Sweden with a lot of lakes and streams in the neighbourhood.*



*The Landlord for Grythyttan Inn, Carl Jan Granqvist. Photo: Aulis Syväjärvi*





*Grythyttan Inn has developed into a gastronomical center under the management of Carl Jan Granqvist.*

*There's a lot of possibilities for experiences close to nature.*



hours drive. At the same time they can get culinary arrangement with food, wine and music at Grythyttan. My experience tells me that to get a good basis for a business you have to establish it firmly during a long time with high and maintained quality. At Grythyttan we try to combine creative and interactive activities with experiences full of feeling, which stimulate many different senses. With this concept we get faithful guests who come back many times. By the way, I believe in the idea to develop interactive workshops connected to honeybees and honey. I am sure that you also can develop the beverages in connection with this.

Grythyttan has become a tourist attraction during the last 25 years. That's fascinating, but a coincidence I have

not thought about it during the creative process. It's now afterwards when you think about the development that you clearly can see the result, and then you're glad for it."

### ***Måltidens Hus in Scandinavia***

This building is in fact the ex-Swedish pavilion at the 1992 World Exhibition in Seville. Its architecture and interior are a source of inspiration to everyone caring about the aesthetics of culinary art! Måltidens Hus offers a Restaurant Academy with the purpose to improve the quality and expertise in the Swedish restaurant trade and also to lay a foundation for research. The Culinary Art Knowledge programme is centered around a total perspective of the *meal*, with five part-themes in focus; *the atmosphere, the manage*





*Måltidens Hus in Scandinavia.*

*ment system, the setting, the meeting and the product.*

Jesper Johansson is Chief cook and teacher for the 120 students. “Unfortunately I know very little about beekeeping, but I use honey regularly in cooking. Besides as a sweetening agent, honey is excellent for grilling and barbecuing and in different kinds of desserts. I like the plans for establishing a small beekeeping business at Måltidens Hus. When we have our own honey I can start to develop new products and recipes. I like to develop new creations in cooking. Our giftshop at Måltidens Hus will also in this way get an enlarged set of products.

### ***Active cooking***

For our guests in groups larger than ten people we have an interesting workshop called “Active cooking”. Your group prepares the food in our beautiful Gastronomic Theatre which has five complete display kitchens and all necessary equipment. After folding the napkins and laying the table, the meal itself becomes the high point of the evening.

### ***The Kitchengarden***

Simon Irvine is the landscape-gardener for the Kitchengarden at Måltidens Hus.

“To me as a gardener it is important to know that the vegetables which I grow with great care also will be prepared in the right way so that the aromatic taste of the fresh vegetables will come forward during the meal. Therefore it is especially satisfying to be able to offer a

beautiful kitchengarden at Grythyttan for our visitors and students. At the same time the Chief cook can offer fresh and tasty vegetables on the menu.

My relationship with honeybees is warm and loving. Bees are daily visitors and it is interesting to follow the rhythm of the garden and the work of the bees during different times of the day. I always try to plant plants for the bees in connection to my kitchengardens. Previously I have been in charge of kitchengardens at Läckö Castle and Tyrösö Castle. At Läckö I arranged an exhibition-garden named “Plants for honeybees”, which I enjoyed a lot. There you could discover the sophisticated rhythm of the day in the garden. I had planted Reseda- flowers and saw how the bees returned to these flowers during certain times of the day.



*Simon Irvine, the landscape-gardener.*





Honeybees are a good example of how you can discover the rhythm of the garden. At Grythyttan Måltidens Hus is planning to keep bees in connection with the kitchengarden. The hives will have a design of their own so they will keep the harmony with the rest of outdoor room.

Our kitchengarden will be a pedagogical outdoor room

where you can discuss many subjects, for example about food, gardening, health, qualities in life or flowers and bees.

You are welcome!





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## Joint efforts in Nordic bee research

Photo Finn Christensen



Beekeeping in the Nordic countries, Sweden, Denmark, Finland and Norway has a long tradition of small scale beekeeping, but limited experience from the large scale commercial operations we know from the Americas and Australia. With no industry able to support research efforts in this field, resources for bee research have gradually been reduced for decades in all the Nordic countries, as governments increasingly expect private interests to support activities where there may be a company benefit. The fact that you can import food, but not pollination, and that benefits of beekeeping reach beyond the honey producers have, nevertheless, secured some government funding for bee related topics.

Because of the limited resources in the respective countries, efforts have been made to develop programs where the national capacity may be limited, but where joint efforts can produce results that reach beyond those that individual institutes could produce.

Since 1986 collaborative research on bees has been organized between The Swedish University of Agricultural Sciences, The Norwegian Agricultural University, The Agricultural Research Center of Finland and The Danish Institute of Agricultural Sciences under the roof of The Nordic Joint Committee for Agricultural Research (NKJ). This Committee has no funding capacity, but accepts applications and suggests the national funding agencies to approach to support collaborative research where it is obvious that national resources are not sufficient. This report does not deal with Nordic bee research in general, but briefly describes the 3 projects developed within NKJ since 1986.

### Varroa mite population dynamics - NKJ project # 64

As the varroa mite was spreading with devastating effects throughout Europe in the early 80's it became clear that we needed to prepare ourselves up north for what we expected would come. At that time we were quite optimistic about the impact of varroa on honey bees, because we knew the mite could only breed on honey bee brood, and this period becomes more limited the further north

you go. A group consisting of Ingemar Fries, Sweden, Aasne Aarhus, Norway, Henrik Hansen, Denmark and Seppo Korpela, Finland discussed this matter in 1985 and received support from NKJ from 1986 for a 4 year project to study the population dynamics of varroa in a Nordic climate. Since Finland was the only Nordic country where the varroa mite was found at that time, the practical field research was to be located there.

Seppo Korpela managed to locate a large island, Partalansaari in Mikkeli county in eastern Finland, where there were no honey bees, but in an area officially considered infested by varroa mites. With due permission from the proper authorities, we transported 36 mite free colonies in hives equipped for varroa monitoring (screen bottoms) onto this island. All colonies received an inoculum of 5 to 8 adult varroa females collected from the mainland and the mites were introduced directly onto the bees.

During the active bee season, and with three weeks intervals after the introduction of mites, these colonies were then sampled for 1.) mites in the debris (natural mortality) 2.) adult bees (bee infestation rate) 3.) brood (brood infestation rate) 4.) amount of brood 5.) amount of bees. During the winter, samples of dead bees and mites in the debris, were collected every 6 weeks. Although the bees were located on a remote island in eastern Finland, the fact that four groups took turns in the sampling, the project became manageable.

Because of winter losses of bees the first winter we added another 20 colonies to a separate apiary on the island the following year, now adding 100 female mites per colony. These new colonies were sampled as the originally introduced colonies. Four years after the first introduction of 5-8 mites and three years after the introduction of 100 female mites, colonies started to break down in the fall and most colonies died during the fourth winter of the experiment.

The studies in Finland clearly demonstrated that in spite of the long broodless period, with brood rearing recorded from late April to late September each year, the mite population build up is



Photo: Preben Kristiansen





surprisingly fast and makes effective mite control imperative. The Nordic climate may delay colony break down compared to warmer climates with extended brood rearing, but nothing more. Through the collected data in the project we could also demonstrate how effective debris investigations could be for detection of early mite infestations and how mite populations may increase in a limited population of bees, without outside infestation pressure. Results from the project have been published (Fries

et al., 1991a; Fries et al., 1991b; Korpela et al., 1993) and data from the project has also been used in building mathematical models of the mite population dynamics (Fries et al., 1994; Calis et al., 1999).

### ***Virus infections in varroa infested honey bee colonies - NKJ project # 86***

A second joint NKJ project was initiated in 1993 where the basic idea was to establish a number of varroa infested bee colonies and continuously take samples of bees for virus analysis as the mite infestations eventually resulted in colony break down. Because of the information available at that time on the mite-virus issue, Sanna Nordström, in Uppsala, started the project by isolating virus from diseased bees and developed an immunological method (ELISA) for detection of APV (acute paralysis virus). As samples were being processed, it became evident that APV was not easy to find, not even in heavily mite infested colonies close to colony break down. Without resources to develop tools for detection of other viruses, Brenda Ball at Rothamsted kindly offered Sanna to work in her laboratory in England to analyse the project samples.

To make a long story short, results from surveys of Nordic bees and experiments with virus transmission in Sweden, Sanna Nordström's work demonstrates that another virus, DWV (deformed wing virus) probably is much more important in explaining damages and break down of varroa infested colonies, compared to APV. The joint Nordic project on the association between varroa and viruses has added new understanding for this complex relationship. It has also resulted in transfer of a complete ELISA method to all the Nordic bee disease laboratories, including antibodies and purified virus, for detection of APV.

The results from NKJ project # 86 is presently being processed for publication.

### **Coordination of the project "Ecological" methods for control of varroa mites - NKJ project # 97**

A third joint NKJ project was launched in 1996 and is still running until the end of 1999. The objective of this project is to coordinate the studies made in the Nordic countries, on mite control so that results are comparable and efforts made in one country can be used in another, when planning new trials. With this new NKJ project we have Stig Omholt from Norway as the Norwegian

counterpart and it has also been possible to include Jurgis Racys from Lithuania.

Through NKJ project # 97 we have all benefited from exchange of plans and non published information, in making mite control experiments in the respective countries. The best example of this is perhaps the coordinated trials conducted to develop proper protocols for dripping oxalic acid in bee colonies for varroa control. By replicating experiments in the different countries, where concentration of the acid and where different sugar solutions or water was used to dissolve the acid, we could use several hundred colonies for result comparisons. The experimental design was actually developed in collaboration with Antonio Nanetti in Italy, to make the trials compatible with trials of the same kind all over Europe.

We know from the first round of coordinated oxalic acid trials that sugar should be used in the liquid for optimal results, and that the highest dose (4.2% oxalic acid) is very effective in broodless colonies and works well in southern Europe, but is not so well tolerated by the bees in more northern climates. These trials will continue during 1999 to find concentrations that have acceptable effect on the mites and where the bees suffer no negative consequences.

A positive side of NKJ project # 97 is also that national bee disease advisors have been linked to the information exchange and



discussions. This may result in more down to earth approaches from the research side, and perhaps more understanding of the research needs from the practice. Bee research in the Nordic countries has developed considerably during the last decade. Undoubtedly the collaborative efforts in NKJ has a large part in that development.

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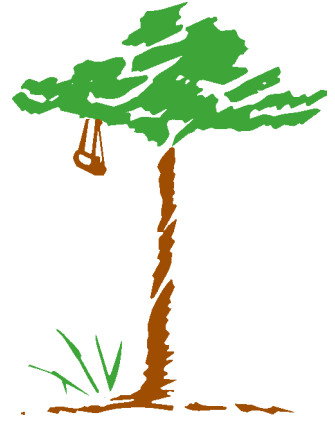
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