

European Honeydew Honeys

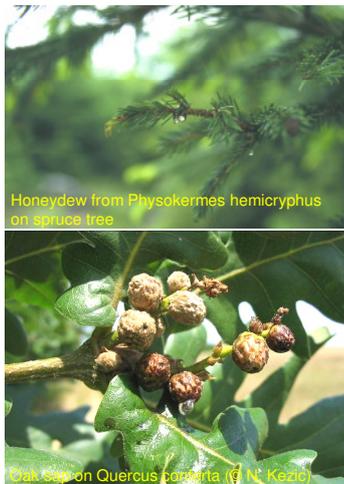
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Honeydew honeys are well-known in European countries. Especially in Germany they can achieve quite high prices. Honeydew is an excretion of plant sucking insects with a high sugar content. Contrary to most nectar honeys honeydew honeys have red brown to dark brown colour, a strong, herb-malty aroma, high electrical conductivity, lower amount of fructose and glucose, significant higher amounts of oligosaccharides as well as microscopic visible honeydew elements.

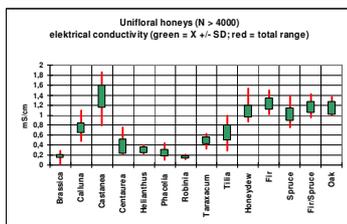


Honeydew producers
Most honeydew producers belong to the insect group of Hemiptera. Especially Coccinea, Aphidina, as well as Auchenorrhyncha are important in European countries.

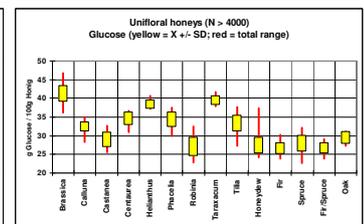
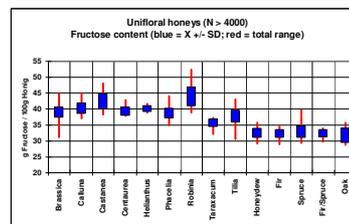


Honeydew production

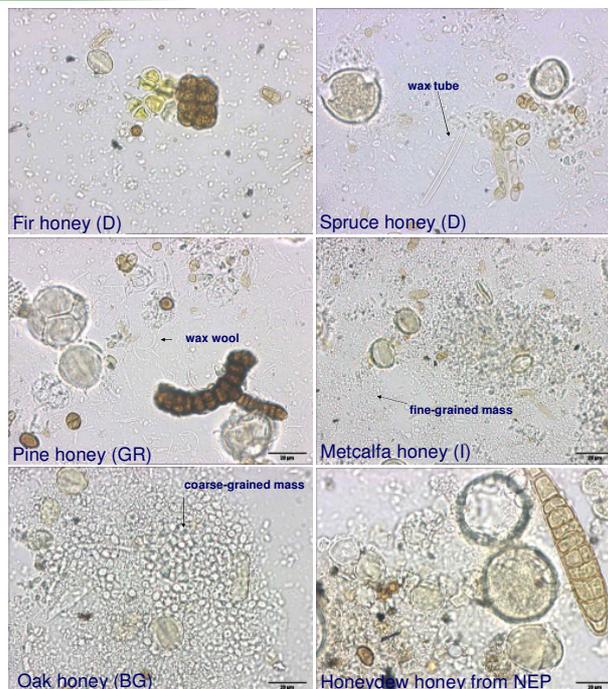
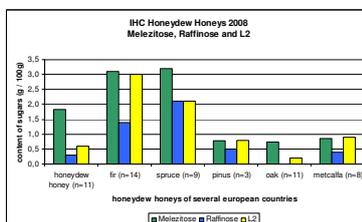
Beside floral and extrafloral nectar honeydew is an other source used by bees to produce honey. With their mouthparts honeydew producing insects stick into the phloem and suck the phloem sap. They need especially the higher molecules which are in a lower concentration in the phloem sap. Smaller molecules like water and sugars are in some aphids filtered through membranes just after intake and transported directly to the end of the digestive tract. Bigger molecules like peptides etc. will be digested in the midgut supported by bacteria. Phloem sap will be transferred to honeydew by enzymes of aphids and their endosymbionts during digestion. Honeydew can occur as a drop at the anus of the insects (e.g. *Physokermes hemicyphus*) or will be squirt off (egg *Eucallipterus tiliace*).



Honey analyses: Honeydew honeys can be distinguished from nectar honeys. In some cases there are also subtle distinctions between honeydew honeys from different honeydew producers and plants. The differences you can see mainly in electrical conductivity, aroma, colour, sugar spectra as well as microscopic visible honeydew elements. The following graphs are extracts of our honey data bank with more than 4000 data sets of unifloral honeys.



Different origin: In cooperation with members of International Honey Commission (IHC) we got 70 honeydew honeys from different countries which are specific for these countries. Due to the parameters sensory analyses, sugar spectra (e.g. Melezitose, Raffinose und L2) and honeydew elements you can distinguish between some honeydew honeys like spruce, fir, pine oak and metcalfa. Conspicuous is that special honeydew honeys from different countries have the same characteristics



Definition "Honeydew Honey"

Due to EU directive for honey (2001/110/EG) a botanical origin can be pointed out "if the product comes wholly or mainly from the indicated source and possesses the organoleptic, physico-chemical and microscopic characteristics of the source". Honeydew honeys should be "mainly from excretions of plant sucking insects on the living part of plants or secretions of living parts of plants".

European data bank

The next step will be to collect data sets of honeydew honeys from different European labs. These data will be analyzed and discussed within IHC and later on should be published, like "Unifloral honeys" in Apidologie in 2004.