



Botanical species giving unifloral honey in Europe

Livia Oddo, Lucia Piana, Stefan Bogdanov, Antonio Bentabol, Panagiota Gotsiou, Jacob Kerkvliet, Peter Martin, Monique Morlot, Alberto Valbuena, Kaspar Ruoff, et al.

► To cite this version:

Livia Oddo, Lucia Piana, Stefan Bogdanov, Antonio Bentabol, Panagiota Gotsiou, et al.. Botanical species giving unifloral honey in Europe. *Apidologie*, 2004, 35 (Suppl. 1), pp.S82-S93. 10.1051/apido:2004045 . hal-00891889

HAL Id: hal-00891889

<https://hal.science/hal-00891889>

Submitted on 11 May 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Botanical species giving unifloral honey in Europe

Livia PERSANO ODDO^{a*}, Lucia PIANA^a, Stefan BOGDANOV^b, Antonio BENTABOL^c,
Panagiota GOTSIOU^d, Jacob KERKVLiet^e, Peter MARTIN^f, Monique MORLOT^g,
Alberto ORTIZ VALBUENA^h, Kaspar RUOFF^b, Katharine VON DER OHEⁱ

^a Istituto Sperimentale per la Zoologia Agraria, Sezione di Apicoltura, Roma, Italy

^b Federal Dairy Research Station, Swiss Bee Research Centre, Liebefeld, Switzerland

^c Casa de la miel, Tenerife, Canarias, Spain

^d Laboratory of Analytical Chemistry, Mediterranean Agronomic Institute of Chania, Crete, Greece

^e Inspectorate for Health Protection and Veterinary Public Health, Amsterdam, The Netherlands

^f Honey International Packers Association, London, UK

^g Bernard Michaud S.A., Jurançon, France

^h Centro Regional Apícola, Guadalajara, Spain

ⁱ Niedersächsisches Landesinstitut für Bienenkunde, Celle, Germany

(Received 20 February 2004; revised 11 May 2004; accepted 17 May 2004)

unifloral honey / Europe / botanical species

In Europe more than one hundred botanical species can give unifloral honeys. Most of them have only a local importance and are thus marketed on a limited scale, but have also been described in the literature.

To complete the information relating to European unifloral honeys (Persano Oddo and Piro, 2004), the International Honey Commission (IHC) carried out an extensive survey of all these botanical species, partly collecting data from bibliographic references and partly using information directly provided by the IHC members (the authors of this study).

All the botanical species giving unifloral honeys in Europe are listed in Table I, where the scientific name is reported together with local names in 6 European languages. Information is given on their respective importance for honey production in the various European countries, following a subdivision into 3 classes: abundant, medium and rare. In some cases the information relating to a country is extended to a wider surrounding geographical area. Where possible, references are given for each botanical species, where the reader can find data on the production and properties of the respective honey types.

Honeys from different species belonging to the same botanical genus have sometimes similar characteristics, and they were considered together in the descriptive sheets (Persano Oddo and Piro, 2004). Here, as far as possible, all individual species are considered.

The honeydew honeys need special attention. Chemically they form two main groups: honey from honeydew produced by *Metalfa pruinosa* (Say) and other honeydew honeys (Persano and Piro, 2004). Actually, honeydew honeys are produced by many different aphids and insects on a big variety of plants, mostly trees (coniferous and latifoliae). The main coniferous honeydew honeys are produced from fir, spruce and pine trees. They are highly valued in different European countries and are marketed with specific denominations. Latifoliae honeydew honeys form a rather large group. Most of them, with the exception of French oak honey (Gonnet and Vache, 1998) are not characterised and are marketed in central Europe as “forest” honey, often mixed with honeydew honeys from coniferous trees. There are good overview references on their production (Kloft and Kunkel, 1985; Liebig, 1999) and properties (Maurizio, 1965; Crane and Walker, 1985; Maurizio, 1985).

* Corresponding author: livia.persano@apicoltura.org

Table 1. List of botanical species giving unifloral honeys in Europe.

Legend: A = Austria; AL = Albania; B = Belgium; BG = Bulgaria; BI = British Islands; CH = Switzerland; D = Germany; DK = Denmark; E = Spain; East-Eu = Includes: Czech Rep, Slovak Rep, Hungary, part of Romania, part of ex Yugoslavia; F = France; GR = Greece; HR = Croatia; I = Italy; L = Luxembourg; NL = Netherlands; P = Portugal; PL = Poland; Fenno-Scand = Includes: Finland, Norway and Sweden; SLO = Slovenia; South-East Eu = Includes: Bulgaria, part of Romania, part of ex Yugoslavia.

* = *Produced in the Canary islands.*

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Ailanthus altissima</i> (Miller) Swingle	Tree of heaven	Ailante	Ailanto	Götterbaum	Ailanto	Jumaltenpuu			I, E, D, F	Maurizio and Schaper, 1994; Persano Oddo et al., 2000
<i>Allium cepa</i> L.	Onion	Oignon	Cipolla	Gemeine Zwiebel	Cebolla	Sipuli			E, D, NL, CH, I, F	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Persano Oddo et al., 2000
<i>Amorpha fruticosa</i> L.	Bastard indigo		Indaco bastardo	Bastardindigo	Falso índigo	Sulkapensas			I, South-East Eu	Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000
<i>Anthyllis cytisoides</i> L.		Anthyllide faux-cyprès		Wundklee	Albaida			E		Gonnet and Vache, 1998; Sáenz Laín and Gómez Ferreras, 2000
<i>Arbutus unedo</i> L.	Strawberry tree	Arbousier	Corbezzolo	Erdbeerbaum	Madroño	Lännenmansikkapuu		I, F, AL, HR	E, GR	Ricciardelli D'Albore, 1985, 1998, 2003; Prota et al., 1997; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002
<i>Asparagus</i> spp.	Asparagus	Asperge	Asparago	Spargel	Espárrago	Parsa			I, DK, NL, D, F, CH, HR	Maurizio and Schaper, 1994; Persano Oddo et al., 2000; Ricciardelli D'Albore, 1998; 2003
<i>Asphodelus microcarpus</i> Salzm. et Viv.	Asphodel	Asphodèle	Asfodelo	Affodill	Asfodelo			I		Prota et al., 1997; Gonnet and Vache, 1998; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000
<i>Borago officinalis</i> L.	Borage	Bourrache officinale	Borragine	Borretsch	Borraja	Purasruoho			I, E, NL, F, Fenno-Scand, BI	Crane et al., 1984; Maurizio and Schaper, 1994; Quayle, 1997; Persano Oddo et al., 2000
<i>Brassica napus</i> L.	Rape	Colza	Colza	Raps	Colza	Rapsi	CH, NL, East Eu, D, B, DK, Fenno-Scand, L, BI, F	E	I, South-East Eu	Maurizio and Louveaux, 1965; Louveaux, 1970; Crane et al., 1984; Maurizio and Schaper, 1994; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Calluna vulgaris</i> (L.) Hull	Heather	Callune, Fausse bruyère	Brugo	Besenheide	Biercol	Kanerva	E, NL, D, DK, Fenno-Scand, BI, PL	F	I	Maurizio and Louveaux, 1965; Louveaux, 1970; Gonnet and Vache, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004
<i>Carlina salicifolia</i> (L. f.) Cav.					Cabezote			E		Sáenz Laín and Gómez Ferreras, 2000; Ramos et al., 2002
<i>Carlina vulgaris</i> L.	Carlina thistle	Carlina vulgaire	Carlina comune	Gewöhnliche Golddistel	Cardo	Lännekurho			E, F	Clément, 2002
<i>Carlina xeranthemoides</i> L.					Malpica			E*		
<i>Castanea sativa</i> Miller	Sweet chestnut	Châtaignier	Castagno	Edelkastanie	Castaño	Jalokastanja	AL, I, E, CH, F, East Eu	A, B, D, GR	South-East Eu, BI, DK, NL	Maurizio and Louveaux, 1965; Louveaux, 1970; Crane et al., 1984; Ricciardelli D'Albore, 1985, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004
<i>Centaurea solstitialis</i> L.	Yellow star-thistle	Centauree du solstice, Chardon doré	Spino giallo, Calcatrep- pola	Sonnenwend- Flockenblume	Cardo estrellado	Keltaorakau- nokki			I, F	Crane et al., 1984; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000
<i>Centaurea cyanus</i> L.	Blue bonnet	Bleuet, Fleurdelise	Fiordaliso	Kornblume		Ruiskaunokki			E	Crane et al., 1984; Maurizio and Schaper, 1994
<i>Ceratonia siliqua</i> L.	Carob, locust bean	Caroubier	Carrubo	Johannis brotbaum	Alagarrobo	Johanneksen- leipäpuu		E	I, GR, F	Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000
<i>Chamaecytisus proliferus</i> L.				Sprossender Zwergginster	Escobón, tagasaste			E*		
<i>Cirsium arvense</i> (L.) Scop.	Creeping thistle	Cirse des champs	Cardo campestre	Acker- Kratzdistel	Cardo negro				NL, E	Maurizio and Louveaux, 1965; Ricciardelli D'Albore, 1998
<i>Citrus</i> spp.	Citrus, orange, lemon, etc.	Agrumes	Agrumi	Zitrusfrucht	Azahar, cítricos	Sitruspuu	I, E	GR	F	Maurizio and Louveaux, 1965; Louveaux, 1970; Maurizio and Schaper, 1994; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Coriandrum sativum</i> L.	Coriander	Coriandre	Coriandolo	Koriander	Cilantro, culantro	Korianteri		South-East Eu,	D	Ivanov, 1978; Crane et al., 1984
<i>Crambe</i> spp.	Sea-kale			Meerkohl					NL	
<i>Crataegus monogyna</i> Jacq.	Hawthorn	Aubépine à un style	Biancospino	Eingriffeliger Weißdorn	Espino albar	Tylppäliuskao- rahihlaja		E	F	Maurizio and Schaper, 1994; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002
<i>Cynoglossum officinale</i> L.	Hound's-tongue	Cynoglosse officinal	Lingua di cane, Vellutina	Gebräuchliche Hundszunge	Cinoglosa	Koirankieli			NL	Maurizio and Schaper, 1994
<i>Daucus carota</i> L.	Carrot	Carotte	Carota	Möhre	Zanahoria	Porkkana			E, F, D, DK	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Sáenz Laín and Gómez Ferreras, 2000
<i>Diplotaxis erucoides</i> (Tornér) DC.	White wall rocket	Diplotaxis - fausse roquette	Ruchetta (or sanacciola)	Rukenähnlicher Doppelsame	Jaramago	Hietasinapit		E	I, F, P	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000
<i>Dorycnium pentaphyllum</i> Scop.		Dorycnium à cinq folioles	Trifogliano	Fünfblättriger Backenklee	Mijediega, boja cañamera			E	I	Sáenz Laín and Gómez Ferreras, 2000
<i>Echium brevirame</i> Sprague et Huch.				Kurzästiger Natternkopf	Tajinaste			E*		Sáenz Laín and Gómez Ferreras, 2000
<i>Echium</i> spp.	Purple viper's-bugloss	Vipérine	Erba viperina	Natternkopf	Vivorera, chupamieles sonaja	Neidonkieli		E	I, NL, F	Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998; Bocquet, 2001; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000
<i>Echium virescens</i> DC					Tajinaste			E*		
<i>Epilobium angustifolium</i> L.	Rosebay Willowherb	Epilobe à feuilles étroites	Epilobio, garofanino maggiore	Wald-Weidenröschen		Maitohorsma		Fenno-Scand		Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998
<i>Erica arborea</i> L.	Tree heath	Bruyère blanche ou arborescente	Erica arborea	Baumheide	Brezo blanco		E	I, F, HR	GR	Louveaux, 1977; Gonnet and Vache, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Ricciardelli D'Albore, 2003
<i>Erica australis</i> L.					Brezo rojo or rubio		E			Sáenz Laín and Gómez Ferreras, 2000

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Erica carnea</i> L.	Spring heather	Bruyère carnée	Erica carnea	Erika				F		Crane et al., 1984
<i>Erica cinerea</i> L.	Bell heather	Bruyère cendrée	Erica cinerea	Grauheide	Brezo nazareno, brezo gris, ceniciento	Harmaakello-kanerva	E	F, BI	P	Louveaux, 1977; Gonnet and Vache, 1998; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002
<i>Erica manipuliflora</i> Salisb.								AL, GR, HR		Ricciardelli D'Albore, 1985, 2003
<i>Erica multiflora</i> L.			Erica multiflora	Vielblütige Heide	Bruguera, cipell		E	HR	I	Louveaux, 1977; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Ricciardelli D'Albore, 2003
<i>Erica scoparia</i> L.		Bruyère à balai	Scopa		Brezo de escobas		E			Sáenz Laín and Gómez Ferreras, 2000
<i>Erica umbellata</i> L.					Quiruela, mojariza		E			Sáenz Laín and Gómez Ferreras, 2000
<i>Erica vagans</i> L.	Cornish heath	Bruyère vagabonde	Erica vagabonda	Wanderheide	Rugón		E	F		Louveaux, 1977; Sáenz Laín and Gómez Ferreras, 2000
<i>Eryngium campestre</i> L.	Field eryngo	Panicaut champêtre	Calcatrep-pola	Feld-Mannstreu	Cardo corredor			E	AL	Ricciardelli D'Albore, 1985, 1998
<i>Eryobotrya japonica</i> (Thunb.) Lindley	Loquat, Japanese medlar	Néflier du Japon	Nespolo del Giappone	Japanische Wollmispel	Níspero	Japaninmispeli			I, E	Crane et al., 1984; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000
<i>Eucalyptus</i> spp.	Gum tree	Eucalyptus	Eucalipto	Eukalyptus	Eucalipto	Eukalyptus	I, E, P		GR, F	Louveaux, 1970; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Piazza and Persano Oddo, 2004
<i>Euphorbia cyparissias</i> L.	Milk weed	Euphorbe faux cyprés	Euforbia cipressina	Zypressenblättrige Wolfsmilch		Tarhatyräkki			South-East Eu	Ricciardelli D'Albore, 1998
<i>Fagopyrum esculentum</i> Moench	Buckwheat	Sarrasin	Grano saraceno	Echter Buchweizen	Trigo sarraceno	Tattari	East Eu, PL		D, NL, A, F, Fenno-Scand	Crane et al., 1984; Bocquet, 1999b; Clément, 2002
<i>Galactites tomentosa</i> Moench			Cardo, scarlina		Cardota, cardo cuajaleches			I	E	Persano Oddo et al., 2000

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Glycine max</i> (L.) Merrill	Soya	Soja	Soia	Sojabohne	Soja	Soijapapu			I	Crane et al., 1984
<i>Gossypium hirsutum</i> L.	Cotton	Coton	Cotone	Baumwolle	Algodonero			GR	South-East Eu, E	Crane et al., 1984; Ricciardelli D'Albore, 1998
<i>Hedera helix</i> L.	Ivy	Lierre	Edera	Efeu	Hiedra	Muratti			I, E, F, HR	Maurizio and Schaper, 1994; Gonnet and Vache, 1998; Persano Oddo et al., 2000; Clément, 2002; Ricciardelli D'Albore, 2003
<i>Hedysarum coronarium</i> L.	French honeysuckle	Sainfoin à bouquets	Sulla	Süßklee	Hedísaro, sulla	Punanätkin		I, E	F	Crane et al., 1984; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000
<i>Helianthus annuus</i> L.	Sunflower	Tournesol	Girasole	Sonnenblume	Girasol	Auringon-kukka	I, E, F, East and South-East Eu	D	AL, GR, Fenno-Scand	Ricciardelli D'Albore, 1985, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004
<i>Hirschfeldia incana</i> (L.) Lagr.- F.	Hoary mustard	Hirschfeldie grisâtre	Senape cornuta	Graukohl	Relinchón			E*		
<i>Hypocoum</i> sp.			Cornacchina		Zadorija			E		Sáenz Laín and Gómez Ferreras, 2000
<i>Inula viscosa</i> (L.) Aiton	Woody fleabane	Inule visqueuse	Enula	Alant	Inula				I, E	Ricciardelli D'Albore, 1998, Persano Oddo et al., 2000
<i>Lavandula angustifolia</i> Miller	Lavender	Lavande vraie	Lavanda vera (o spigo)	Echter Lavendel	Lavanda	Laventeli	E	F		Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Persano Oddo et al., 2000
<i>L. x intermedia</i> Emeric ex Loiselieur	English lavender	Lavandin	Lavanda ibrida	Lavandin	Lavandín		F	E, HR	South-East Eu	Maurizio and Louveaux, 1965; Louveaux, 1970; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998, 2003; Persano Oddo et al., 2000; Clément, 2002; Piazza and Persano Oddo, 2004
<i>Lavandula latifolia</i> Medikus	Spike lavender	Lavande à larges feuilles	Spigo	Großer Speik	Espliego		E			Maurizio and Louveaux, 1965; Louveaux, 1970; Maurizio and Schaper, 1994; Sáenz Laín and Gómez Ferreras, 2000
<i>Lavandula stoechas</i> L.	French lavender	Lavande stechas	Lavanda selvatica	Schopf-lavendel	Cantueso		E, P		I, F	Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002

Minor unifloral honeys

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Ligustrum</i> spp.	Privet	Troène	Ligustro	Liguster	Aligustre	Likusterit			NL	Maurizio and Schaper, 1994
<i>Limonium vulgare</i> Miller	Common sea-lavender	Lavande de mer	Limonio	Strandflieder	Limonio				NL, D	
<i>Lotus</i> spp.	Lotus, bird's-foot-trefoil	Lotier	Ginestrino	Hornklee	Corazoncillo	Keltamaite		E	I, P, F, HR, Fenno-Scand	Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998, 2003; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000
<i>Malus domestica</i> Borkh.	Apple	Pommier	Melo	Apfelbaum	Manzano	Tarhaomena-puu		BI	I, E, NL, D, F, Fenno-Scand	Crane et al., 1984; Persano Oddo et al., 2000
<i>Medicago sativa</i> L.	Alfalfa, Lucerne	Luzerne	Erba medica	Saat-Luzerne	Alfalfa	Sinimailanen		I, F	E, D, Fenno-Scand	Crane et al., 1984; Ricciardelli D'Albore, 1998, Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002
<i>Mentha</i> spp.	Mint	Menthe	Menta	Minze	Menta	Mintut		E	NL, D	Maurizio and Schaper, 1994; Sáenz Laín and Gómez Ferreras, 2000
<i>Mesembryanthemum crystallinum</i> L.	Common ice-plant		Erba cristallina	Mittagsblume	Barrilla, escarchada			E*		
<i>Myosotis</i> spp.	Forget-me-not	Ne m'oubliez pas	Non ti scordar di me	Vergissmeinnicht	No me olvides	Lemmikit			B, NL, DK, BI, D, A, CH, F, I	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994
<i>Myrtus communis</i> L.	Common myrtle	Myrte	Mirto	Braut-myrtle	Mirto	Myrtti			I, F	Ricciardelli D'Albore, 1998
<i>Nicotiana tabacum</i> L.	Tobacco	Tabac	Tabacco	Tabak	Tabaco	Tupakka			South-East Eu	Crane et al., 1984; Ivanov, 1978
<i>Odontites</i> spp.	Bartsia		Perlina	Zahntrost	Odontites	Sänkiö			I	Ricciardelli D'Albore, 1998
<i>Oenothera biennis</i> L.	Common evening-primrose	Onagre bisannuelle	Enagra	Zweijährige Nachtkerze	Hierba del asno	Iltahelokki			NL	
<i>Onobrychis viciifolia</i> Scop.	Sainfoin	Esparcette, Sainfoin	Lupinella	Saat-Esparsette	Esparceta	Esparsetti		E	I, A, East and South-East Eu, L, F, D, CH, BI	Crane et al., 1984; Louveaux, 1970; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002
<i>Origanum virens</i> Hoffmanns. & Link	Marjoram	Origan	Origano	Oregano	Orégano			E*		Sáenz Laín and Gómez Ferreras, 2000; Ramos et al., 2002

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Paliurus spina-christi</i> Miller	Christ's thorn, Jerusalem thorn	Paliure épine-du-Christ	Marruca	Christdorn	Espina de cristo			HR	I, GR, South-East Eu	Crane et al., 1984; Ricciardelli D'Albore, 1998, 2003; Persano Oddo et al., 2000
<i>Persea americana</i> Mill.	Avocado	Avocat	Avocado	Avocado	Aguacate	Avocado		E		Crane et al., 1984 ; Sáenz Laín and Gómez Ferreras, 2000
<i>Phacelia tanacetifolia</i> Benth	Phacelia	Phacélie	Facelia	Büschelschön	Facelia	Aitohuna-jakukka	East Eu	D, NL, B	F, Fenno-Scand	Crane et al., 1984 ; Gonnet, Vache 1998; Persano Oddo et al., 2000
<i>Phlomis</i> sp.	Sage		Salvione	Brandkraut	Candilera	Paloyrtit			GR	
<i>Pimpinella anisum</i> L.	Anise, aniseed	Anis vert	Anice	Anis	Anís	Anis			GR	Ricciardelli D'Albore, 1998
<i>Prunus avium</i> L.	Cherry	Cerisier	Ciliegio	Kirsche	Cerezo	Kirsikka			I, F	Persano Oddo et al., 2000; Clément, 2002
<i>Prunus dulcis</i> (Miller) D.A. Webb	Almond	Amandier	Mandorlo	Mandelbaum	Almendro	Manteli		E	D	Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000
<i>Prunus mahaleb</i> L.	St. Lucie cherry	Cerisier de Ste Lucie, Faux merisier	Ciliegio canino, marasca	Felsen-kirsche	Cerezo de mahoma	Veikselinkirsikka			I	Persano Oddo et al., 2000
<i>Prunus</i> spp.	Fruit-trees	Arbres fruitiers	Fruttiferi	Steinobst		Tuomet			EU	Crane et al. 1984; Maurizio and Schaper, 1994
<i>Reseda luteola</i> L.	Weld	Réséda des teinturiers	Reseda	Färber-Reseda	Gualda	Värireseda		E	D	Ricciardelli D'Albore, 1998; Sáenz Laín and Gómez Ferreras, 2000
<i>Retama sphaerocarpa</i> L.				Retamastrauch	Retama			E		
<i>Rhamnus frangula</i> L.	Alder buckthorn	Neprum bourdaine	Frangola	Faulbaum	Avellanillo	Paatsama		F	Fenno-Scand	Maurizio and Louveaux, 1965; Bocquet, 1999a ; Clément, 2002
<i>Rhododendron</i> spp.	Rhododendron	Rhododendron	Rhododendro	Alpenrose	Rhododendro	Alppiruusu		I, F, A	E, CH, D	Maurizio and Louveaux, 1965; Louveaux, 1970; Crane et al., 1984; Maurizio and Schaper, 1994; Persano Oddo et al., 2000; Clément, 2002; Piazza and Persano Oddo, 2004
<i>Robinia pseudacacia</i> L.	Black locust, false-acacia	Acacia, Robinier faux acacia	Acacia, Robinia	Robinie	Falsa acacia	Valeakaasia	East, South-East Eu, I, D, A	E, F	CH, B	Louveaux, 1970; Crane et al., 1984; Maurizio and Schaper, 1998; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Rosmarinus officinalis</i> L.	Rosemary	Romarin	Rosmarino	Rosmarin	Romero	Rosmariini	E	I, F, HR		Louveaux, 1970; Crane et al., 1984; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998, 2003; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004
<i>Rubus</i> spp.	Blackberry	Ronces	Rovo	Himbeere	Zarza, zarzamora	Vatukka	Fenno-Scand	E, P	AL, I, NL, D, CH, BI, F	Crane et al., 1984; Ricciardelli D'Albore, 1985, 1998; Maurizio and Schaper, 1994; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002
<i>Salix</i> spp.	Willow	Saules	Salice	Weide	Sauce	Paju		E, HR, Fenno-Scand	NL, CH, D, F	Crane et al., 1984; Maurizio and Schaper, 1994; Persano Oddo et al., 2000; Clément, 2002; Ricciardelli D'Albore, 2003
<i>Salvia officinalis</i> L.	Sage	Sauge	Salvia	Salbei	Salvia	Ryytisalvia		HR	GR	Crane et al., 1984; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998, 2003
<i>Satureja montana</i> L.	Winter savory	Sariette des montagnes	Santoreggia montana	Winter-Bohnenkraut	Ajedrea	Talvikynteli		E	I, F, HR	Crane et al., 1984; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998, 2003; Persano Oddo et al., 2000
<i>Sideritis montana</i> L.		Crapaudine des montagnes	Stregonia montana	Berg-Gliedkraut					F	
<i>Sideritis syriaca</i> L.			Stregonia		Sideritide				I, E, GR	Persano Oddo et al., 2000
<i>Sinapis arvensis</i> L.	Charlock	Moutarde des champs	Senape	Acker - Senf		Rikkasinppi				Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994
<i>Solidago virgaurea</i> L.	Golden rod	Solidage, verge d'or	Verga d'oro	Gewöhnliche Goldrute	Vara de oro	Kultapiisku			I, E, F	Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998, Persano Oddo et al., 2000
<i>Sorbus aucuparia</i> L.	Rowan	Sorbier des oiseleurs	Sorbo degli uccellatori	Eberesche	Serval de los cazadores	Kotipihlaja			Fenno-Scand	
<i>Spartocytisus supranubius</i> [L.] Webb & Berth					Retama del teide			E*		
<i>Stachys annua</i> L.	Annual yellow-woundwort	Epiaire annuelle	Erba uggia, erba strega	Einjähriger Ziest	Estachis	Keltapähkämö			I, E	Maurizio and Schaper, 1994; Persano Oddo et al., 2000

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Taraxacum officinale</i> group	Dandelion	Pissenlit	Tarassaco	Löwenzahn	Diente de león	Voikukka		I, CH, B, D, F, A, Fenno-Scand	E	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004
<i>Teucrium marum</i> L.	Germander		Maro	Katzenkraut	Teucro				I	Persano Oddo et al., 2000
<i>Teucrium</i> spp.	Germander	Germandrée	Maro	Gamander					D	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994
<i>Thymus capitatus</i> (L.) Hofm. et Lk.	Thyme	Thym	Timo arbustivo	Thymian	Tomillo cabezudo		GR	AL, I, HR	E	Maurizio and Louveaux, 1965; Louveaux, 1970; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1985, 1998, 2003; Persano Oddo et al., 2000; Piazza and Persano Oddo, 2004
<i>Thymus serpyllum</i> (sensu lato)	Breckland thyme	Thym serpolet	Timo serpillio		Tomillo serpol	Kangasaju-ruoho			E, I, F	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000; Clément, 2002
<i>Thymus vulgaris</i> L.	Garden thyme	Thym vulgaire	Timo maggiore	Thymian	Tomillo vulgar	Timjami	E		F	Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002
<i>Tilia</i> spp.	Lime	Tilleul	Tiglio	Linde	Tilo	Lehmus	D, NL, PL, East, South-East Eu	I, E, F	CH, B, Fenno-Scand	Louveaux, 1970; Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002; Piazza and Persano Oddo, 2004
<i>Trifolium alexandrinum</i> L.	Egyptian clover	Trèfle d'Alexandrie	Trifoglio alessandrino	Alexandriner-Klee	Trébol	Egyptinapila			I	Persano Oddo et al., 2000
<i>Trifolium incarnatum</i> L.	Crimson clover	Trèfle incarnat	Trifoglio incarnato	Inkarnat-klee	Trébol encarnado	Veriapila			I, F, East Eu	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998; Persano Oddo et al., 2000
<i>Trifolium pratense</i> L.	Red clover	Trèfle des prés	Trifoglio violetto	Rotklee	Trébol de los prados	Puna-apila		E	I, DK, D, GR, F, Fenno-Scand	Maurizio and Louveaux, 1965; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998

Minor unifloral honeys

S91

Latin name	English	French	Italian	German	Spanish	Finnish	Abundant	Medium	Rare	References
<i>Trifolium repens</i> L.	White clover	Trèfle blanc	Trifoglio bianco	Weissklee	Trébol blanco	Valkoapila		E, F, D, HR, Fenno-Scand, DK, PL, NL, B, L, BI	I, GR	Louveau, 1970; Maurizio and Louveau, 1965; Maurizio and Schaper, 1994; Ricciardelli D'Albore, 1998, 2003; Persano Oddo et al., 2000; Sáenz Laín and Gómez Ferreras, 2000; Clément, 2002
<i>Vaccinium vitis-idaea</i> L.	Cowberry	Airelle rouge	Mirtillo rosso	Preiselbeere	Arándano rojo	Puolukka			Fenno-Scand	Maurizio and Louveau, 1965
<i>Vicia</i> spp.	Bean	Vesce	Veccia	Wicke	Veza			BI	I	Maurizio and Louveau, 1965
Honeydew from <i>Abies alba</i> Miller	European silver-fir	Sapin pectiné	Abete bianco	Tanne	Abeto blanco	Saksanpihta (mesikaste)	CH, D, A, DK	I, F, HR	Fenno-Scand	Maurizio, 1985; Louveau, 1970; Persano Oddo et al., 2000; Clément, 2002; Ricciardelli D'Albore, 2003
Honeydew from <i>Abies cephalonica</i> Link.	Greek fir				Abeto	Kreikanpihta (mesikaste)	GR			Karabournioti and Drimjias, 1997
Honeydew from <i>Picea abies</i> subsp. <i>abies</i> (L.) Karst.	Spruce	Epicéa élevé	Abete rosso	Fichte	Picea	Euroopankuusi (mesikaste)	A, D	I, F	Fenno-Scand	Maurizio, 1985; Persano Oddo et al., 2000
Honeydew from <i>Pinus</i> spp.	Pine	Pin	Pino	Kiefer	Pino	Mänty (mesikaste)	GR	F	AL, E	Karabournioti and Drimjias, 1997
Honeydew from <i>latifoliae</i> (mainly <i>Quercus</i> spp.)	Oak	Chêne	Quercia	Eiche	Encina, roble	Lehtipuiden mesikaste	B, D, E, NL	rest of Eu	GR, Fenno-Scand, East Eu	Maurizio, 1985; Gonnet and Vache, 1998; Persano Oddo et al., 2000; Clément, 2002
Honeydew from <i>Metcalfa pruinosa</i> (Say)		Metcalfa	Metcalfa			Metcalfan mesikaste	I	F, SLO		Persano Oddo et al., 2000; Clément, 2002; Piazza and Persano Oddo, 2004

REFERENCES

- Bocquet M. (1999a) Le miel de bourdaine. Nature et composition, principales caractéristiques organoleptiques, *Bull. Tech. Apic.* 26, 91–92.
- Bocquet M. (1999b) Le miel de sarrasin. Nature et composition. Principales caractéristiques organoleptiques, *Bull. Tech. Apic.* 26, 143–144.
- Bocquet M. (2001) Le miel de vipérine : nature et composition, principales caractéristiques organoleptiques, *Bull. Tech. Apic.* 28, 96–97.
- Clément H. (ed.) (2002) *Le traité Rustica de l'apiculture*, Rustica Ed., Paris.
- Crane E., Walker P. (1985) Important honeydew sources and their honeys, *Bee World* 66, 105–112.
- Crane E., Walker P., Day R. (1984) Directory of important world honey sources. Nectar plants, International Bee Research Association, London.
- Gonnet M., Vache G. (1998) Analyse sensorielle descriptive de quelques miels monofloraux de France et d'Europe, Syndicat National d'Apiculture, Paris.
- Ivanov T. (1978) Composition and properties of Bulgarian honey. Dissertation, Ministry of Food and Agriculture, Bee Research Station, Sofia, Bulgaria (in Bulgarian).
- Karabournioti S., Drimjias N. (1997) Some physico-chemical characteristics of Greek monofloral honeys, *Apiacta* 32, 44–50.
- Kloft W., Kunkel H. (1985) *Waldtracht und Waldhonig in der Imkerei*, Ehrenwirth Verlag, München.
- Liebig G. (1999) *Die Waldtracht. Entstehung – Beobachtung - Prognose*, G. Liebig, Stuttgart.
- Louveaux J. (1970) Annexes microphotographiques aux méthodes officielles d'analyse. Tome III, Atlas photographique d'analyse pollinique des miels, Service de la répression des fraudes et du contrôle de la qualité, Paris.
- Louveaux J. (1977) Les bruyères et leur miel, *Bull. Tech. Apic.* 4, 31–36.
- Maurizio A. (1965) *Honigtau-Honigtau-honig, Waldhonigbuch* Ehrenwirth, München.
- Maurizio A. (1985) *Honigtau-Honigtau-honig*, in: Kloft W., Kunkel H. (Eds.), *Waldtracht und Waldhonig in der Imkerei*, Ehrenwirth, München, pp. 268–295.
- Maurizio A., Louveaux J. (1965) Pollens de plantes mellifères d'Europe, Union des Groupements Apicoles Français, Paris.
- Maurizio A., Schaper F. (1994) *Das Trachtpflanzenbuch. Nektar und Pollen – die wichtigsten Nahrungsquellen der Honigbiene*, Ehrenwirth, München.
- Persano Oddo L., Piro R. (2004) Main European unifloral honeys: descriptive sheets, *Apidologie* 35 (Suppl. 1), S38–S81.
- Persano Oddo L., Sabatini A.G., Accorti M., Colombo R., Marcazzan G.L., Piana M.L., Piazza M.G., Pulcini P. (2000) I mieli uniflorali italiani. Nuove schede di caratterizzazione, Istituto Sperimentale per la Zoologia Agraria, Ministero delle Politiche Agricole e Forestali, Roma.
- Piazza M.G., Persano Oddo L. (2004) Bibliographical review of the main European unifloral honeys, *Apidologie* 35 (Suppl. 1), S94–S111.
- Prota R., Floris I., Papoff C.M. (1997) Comparazione delle caratteristiche chimico-fisiche di mieli della Sardegna e della Corsica, *Apic. Mod.* 88, 51–59.
- Quayle L. (1997) Honeybee forage – borage: its cultivation, uses and value to bees, *Beekeep. Q.*, 22–24.
- Ramos I.L.S., Perez B.M., Ferreras C.G. (2002) Pollen spectra of different unifloral honeys from La Palma (Canary Islands, Spain), *Grana* 41, 48–57.
- Ricciardelli D'Albore G. (1985) Lo spettro pollinico dei mieli di Albania, *Apicoltura* 1, 1–33.
- Ricciardelli D'Albore G. (1998) Mediterranean melissopalynology, Institute of Agricultural Entomology, University of Perugia.
- Ricciardelli D'Albore G. (2003) Conosciamo meglio i mieli della Croazia, *Apitalia* XXX, 13–14.
- Sáenz Laín C., Gómez Ferreras C. (2000) *Mieles Españolas*, Ed. Mundi-Prensa.