Ohio State University Extension Factsheet

OARDC/Entomology, Honey Bee Lab

1680 Madison Ave., Wooster, OH 44691-4096

Some Ohio Nectar and Pollen Producing Plants

Both Major and Minor Sources

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Dr. James E. Tew

Honey bees and plants have a special relationship. Each benefits the other. Flowering plants provide food for honey bees; in turn, bees provide pollination for many plants, enabling them to reproduce.

Honey bees visit flowers to collect pollen and nectar for food. Pollen is essential to bees because it is their only natural source of protein. Without it, colonies would be unable to produce new bees and would eventually die. Nectar is the carbohydrate portion of the honey bee's food and is the raw material of honey. Bees convert nectar into honey by adding an enzyme which breaks down the complex sugars into simple sugars. During this time bees reduce the moisture content of nectar to less than 18 percent by fanning air through the hive. Honey bees also require water in addition to pollen and nectar for their survival.

To produce honey successfully, you must have your honey bee colonies at peak strength when the major nectar producing plants in your area begin to bloom. To properly manage honey bee colonies so that their populations will increase and peak at the correct time, you must have a working knowledge of the nectar and pollen producing plants in the vicinity of your apiaries. This knowledge will enable you to determine when to stimulate brood production, add supers, use swarm control measures, harvest honey, requeen, prepare colonies for winter, and locate the most profitable apiary sites. If left on their own, most honey bee colonies don't begin increasing their populations rapidly until the major nectar flow starts. As a result, the nectar flow is usually over before the colonies are strong enough to produce a surplus of honey.

Honey bees may be kept anywhere in Ohio because there are enough nectar and pollen producing plants within flight range to produce some surplus honey. However, apiaries only a few miles apart are often found to produce honey crops varying considerably in size. Therefore, greater production and profit may result if you give more attention to kinds and numbers of nectar and pollen producing plants in any given area may change considerably over a period of years. These changes may be brought about by changes in agricultural crops and practices, rainfall levels, flood control projects and urban development.

Beginners in beekeeping frequently ask questions about growing crops or plants specifically for honey production. In general, it is not economically practical to grow a crop for the honey bees alone. Beekeepers are largely dependent on cultivated crops grown for other purposes or on wild plants. However, under certain conditions, it may be advantageous for beekeepers to use certain nectar and pollen producing plants in landscaping their home grounds and to plant certain crops on idle land. Either case would require selection of specific plants or crops adapted to, and suitable for, specific locations and situations.

The Apiary Location

The ideal location for your apiary would be an area free of hazardous insecticides, and would contain an abundance of nectar and pollen producing plants blooming in succession through the spring, summer, and fall. Honey color and flavor are determined by the plant or plants from which the bees collect nectar. To produce honey for your table or the market, your bees must have access to an abundance of plants yielding large amounts of nectar that will make a high quality, table grade honey.

Nectar production and secretion are affected by many factors, such as fertility, soil moisture and acidity, altitude, latitude, length of day, the number of hours of sunlight per day, and weather.

Where bees gather nectar from several sources, including a variety of wildflowers, honey is usually dark with a strong flavor. This is generally the case with the fall nectar flow, which usually yields a dark, strong flavored honey that is not preferred by most consumers. However, this honey is usually suitable for wintering bees. Golden rod and asters are two fall-blooming plants that may yield such honey.

There are many other minor plants which are excellent for nectar and are good sources of pollen. These may be an important factor in the success of beekeeping in a particular area. Table 1 provides a list of some major nectar and pollen producing plants of Ohio.

Observe your bees closely to learn the plants from which they collect nectar and pollen. Keep records of dates when these plants bloom, because there is variation in the dates from one section of the state to another and also some variation from year to year. After a few years you will know when to expect your greatest surplus honey storage and what quality of honey to expect from various nectar sources.

Honeydew

Various kinds of insects, especially certain aphids, suck large quantities of sap from trees and other plants in order to obtain sufficient food nutrients. In so doing, they often obtain far more sugar and liquid that they can possibly use and they discharge the excess from their bodies. This sweet fluid is known as honeydew. Sometimes the insects are so numerous that the honeydew falls to the ground like a fine mist of rain. When nectar producing plants are scarce, honey bees often collect this honeydew and carry it to the hive where it is converted into honey. Honeydew honey is usually dark and poorly flavored and has a limited sales value. Most honeydew honey is suitable for brood rearing in the spring and summer but contains too much indigestible material to be good for wintering bees.

Summary

Beekeepers must have a working knowledge of both major and minor nectar and pollen producing plants in the vicinity of their apiaries for successful honey production. This knowledge will enable beekeepers determine when to carry out various management practices, such as stimulating brood production, adding supers, using swarm control measures, harvesting honey, requeening, preparing colonies for winter and locating profitable apiary sites.

The list of nectar and pollen producing plants in this publication is not all-inclusive and all listings may not produce in all sections of the state. Beekeepers should observe their bees closely to learn the plants from which they collect nectar and pollen. Keep simple records of the dates when these plants bloom because there is a variation in dates from one section of the state to another, and also some variation from year to year. This information will enable beekeepers to manage honey bees for maximum production.

Some Pollen and Nectar Sources in Ohio

P = Pollen Source
N = Nectar Source
SA = Secrest Arboretum, OARDC, Wooster, Ohio
OSUW = OSU Bee Laboratory Flower Garden, Wooster, Ohio
MAJOR = Major Ohio source of either pollen or nectar

Plant	Nectar/Pollen	Bloom Dates
Alder (SA) (*Alnus incana*)	P	Feb - Apr
Alfalfa (*Medicago sativa*) (Good honey plant)	N & P	Jul - Aug
Alsike Clover (*Trifolium hybridum*) (Excellent honey plant) (Major)	N & P	May - Jul
Alyssum (OSUW) (*Lobularia maritime*)	P	Jun - Sep
American Mountainash (SA) (*Sorbus americana*)	P	May - Jun
Anise hyssop (OSUW) (*Agstache foeniculum*)	N	Jul-Frost
Apple (*Malus* spp.) (Major)	N & P	Apr - May
Asparagus (*Asparagus officinalis*)	P	May - Jun
Aster alpinus (OSUW) (*Aster alpinus*)	N & P	June
Aster	N & P	Sep-Frost

(*Aster* spp.) (Extremely large group) (Not all are good nectar sources) (Major)		
Autumn Joy (OSUW) (*Sedum spectabile*)	N & P	Aug - Sep
Azalea (SA) (*Rhododendron* spp.) (Over 900 species) (some types reported to produce poisonous nectar)	N	Jun - Aug
Basswood (SA) (*Tilia americana*) (Good honey plant) (Short bloom) (Major)	N & P	Jun - Jul
Birdsfoot trefoil (*Lotus corniculatus* L.)	N	Jun - Aug
Black Locust (SA) (*Robinia pseudo-acacia*) (mainly nectar) (short bloom period)	N & P	May - Jun
Black Chokeberry (SA) (*Aronia Melanocarpa*)	N	May - Jun
Blackberry (SA) (*Rubus* spp.) (Major)	N & P	May - Jun
Black Haw (*Viburnum prunifolium*)	N	May - Jun
Blue Vervain (*Verbena hastata* L.)	N	Jul - Aug
Blue Weed (*Echium vulgare*) (Also Viper's Bugloss)	N	Jun - Aug
Blueberry (*Vaccinium corymbosum*)	N	May - Jun
Boneset (*Eupatorium* spp.) (Also White Snakeroot, Joe-Pye weed)	N & P	Aug - Sep
Borage (OSUW) (*Borago officinalis*)	N & P	Jun-Frost
Bronze Bugle (OSUW) (*Ajuga reptans*)	N & P	May
Buckwheat (*Fagopyrum esculentum*) (Unique and strongly flavored honey)	N & P	Jul - Aug

(Rarely planted now)		
Butterfly Weed (OSUW) (*Asclepias tuberosa*)	N	Jul - Aug
Candytuft (OSUW) (*Iberis sempervirens*)	N	May
Canola (*Brassica napus* L.) (Granulates quickly)	N & P	May - Jun
Cat-Tail (SA) (*Typha latifolia*)	P	Jun - Jul
Catalpa (SA) (*Catalpa speciosa*) (Also Indian Bean)	N & P	Jun - Jul
Catmint (OSUW) (*Nepeta grandiflora*) (Also Catnip)	N	Jun - Sep
Cherry (Cultivated) (*Prunus cerasus*)	N & P	Apr - May
Chestnut (SA) (*Castanea dentata*)	P	May - Jun
Chick Weed (*Stellaria Media*)	N & P	Apr - Jul
Chives (OSUW) (*Allium schoenoprasum*)	N & P	May - Sep
Clethra Summersweet (SA) (*Clethra alnifolia*)	N	Jul - Aug
Common Vetch (*Vicia cracca* L.)	N & P	Jul - Aug
Common Hackberry (SA) (*Celtis occidentalis*)	N & P	Apr - May
Corneliancherry Dogwood (SA) (*Cornus mas*)	N & P	Mar - Apr
Cotoneaster (SA) (*Cotoneaster* spp.)	N & P	May - Jun
Crab Apple (SA) (*Malus* spp.)	N & P	Mar - Jun
Crocus (OSUW) (*Crocus vernus*)	P	April
Cucumber (*Cucumis sativus*) (Require pollination, but rarely provide surplus honey)	N & P	Jun - Jul
Dandelion (*Taraxicum officinale*) (secondary bloom through frost) (Major)	N & P	Apr - May
Devils-walkingstick (SA)	N	Jul - Aug

(*Aralia spinosa*) (Also Hercules-club) (Good producer-minor source)		
Elderberry (SA) (*Sambucus canadensis*) (Also American Elder)	P	Jun - Jul
Elm (SA) (*Ulmus americana*)	P & Honey Dew	Feb - Apr
Garlic Chives (OSUW) (*Allium tuberosa*)	N & P	Aug - Sep
Germander (OSUW) (*Teucrium chamaedrys*)	N & P	Jul - Aug
Gill-Over-The-Ground (*Nepeta glechoma*) (Also Ground Ivy)	N & P	Apr - Jul
Globe Thistle (OSUW) (*Echniops ritro*)	N	August
Golden Rod (*Solidago* spp.) (Good fall nectar plant) (Honey has strong odor) (Major)	N & P	Sep - Oct
Hairy Vetch (*Vicia villosa*)	N & P	Jun - Jul
Hawthorn (SA) (*Corylus americana*) (Marginal pollen producer) (*Crataegus* spp.)	N & P	Apr - May
Hazelnut (*Corylus americana*) (Marginal pollen producer)	P	Mar - Apr
Heartsease (*Polygonum* spp.) (Also Smartweed) (Mainly honey plant)	N & P	Aug - Sep
Hickory (*Hicoria* spp.) (Erratic producer) (Low quality honey) (SA)	Honey Dew	Jun - Sep
Holly (SA) (*Ilex opaca*)	N & P	Apr - Jun
Honey Locust (SA) (*Gleditsia triancanthos*) (Also Thorny Locust) (Rarely surplus)	N & P	May - Jun
Hop Clover (*Trifolium procumbens*) (marginal nectar & pollen plant)	N & P	Jun - Jul

Hop-Tree (SA) (*Ptelea trifoliata*)	N	Jun - Jul
Horehound (OSUW) (*Marrubium vulgare*)	N	July
Hungarian Speedwell (OSUW) (*Veronica latifolium*) (Snapdragon Family)	N	June
Korean evoidia (*Evodia daniellii*)	N	Aug - Sep
Lambs Ears (OSUW) (*Stachys byzantina*)	N	May
Land-In-Blue (OSUW) (*Aster* x *dumosus*)	N & P	Aug - Sep
Lavender (OSUW) (*Lavendula augustifolia*)	N	Jun - Sep
Leadwort (SA) (*Amorpha fruticosa*) (Also Indigobush Amorpha, Bastard Indigo) (Good producer, minor source)	N & P	Jun - Jul
Leopards Bane (OSUW) (*Doronicum cordatum*)	N & P	Apr - May
Lungwort (OSUW) (*Pulmonaria* spp.)	N	May
Mallow (OSUW) (*Malva alcea ³Fastigiata²*)	P	Jun - Sep
Maple (SA) (*Acer* spp.) (Rarely honey) (Major)	N & P	Feb - Apr
Mauve Catmint (OSUW) (*Nepeta mussinii*) (Also Persian Catmint, Catnip)	N	Jun - Sep
Melons (Cantalope) (*Cucumis melo*) (Require pollination, but rarely provide surplus honey)	N & P	Jun-Frost
Milk Vetch (*Astragalus* spp.)	N	May - Jun
Milkweed (*Asclepias* spp.) (mainly nectar plant)	N & P	Jul - Aug
Mountain Bluet (*Centaurea montana*) (OSUW)	N	May
Mountain Mint (OSUW) (*Pycnanthemum flexuosum*)	N	Aug-Frost

Mountain Laurel (SA) (*Kalmia latifolia* L.) (Credited with producing poisonous honey)	N	Apr - Jun
Mustard (*Brassica arvenisi* (L.)) (Low quality honey, granulates quickly)	N & P	Apr - May
Oak (SA) (*Quercus*) (Low quality honey crop)	Honey Dew & P	May - Sep
Ohio Buckeye (SA) (*Aesculus glabra*) (Also Horse Chestnut) (Minor nectar producer)	N	Apr - May
Oregano (OSUW) (*Origanum vulgare*)	N	Jun - Sep
Pear (*Pyrus communis*) (Poor nectar producer)	N & P	Apr - May
Persimmon (SA) (*Diospyros virginiana*)	N	May - Jun
Pine (SA) (*Pinsu* spp.) (Honey Dew crop rarely)	Honey Dew	Jun - Sep
Plum (*Prunus* spp.)	N & P	Apr - May
Pot Marigold (OSUW) (*Calendula officinalis*)	N & P	Jun - Sep
Pumpkin (*Cucurbita pepto*)	N & P	Jun-Frost
Pussy Willow (*Salix discolor*)	N & P	Mar - Apr
Raspberry (SA) (*Rubus* spp.) (Also Thimbleberry) (Major)	N	May - Jun
Red Cedar (SA) (*Juniperus virginiana*) (Honey dew crop rarely)	Honey Dew	Jun - Sep
Red Chokeberry (SA) (*Aronia arbutifolia*)	N	May - Jun
Red Clover (*Trifolium pratense* L.)	N	Jun - Jul
Red Bud (SA) (*Cercis canadensis*) (Also Judas Tree)	N & P	Apr - May
Red-Flowering Thyme (OSUW)	N	Jun - Jul

(*Thymus praecox arcticus coccineus*)		
Rose (SA) (*Rosa* spp.)	P	Jun - Sep
Russian Sage (OSUW) (*Perovskia atriplicifolia*)	N	Jul - Sep
Sassafras (SA) (*Sassafras officinale*)	N & P	Apr - May
Scrophularia (OSUW) (*Scrophularia* spp.) (Maybe called Figwort)	N	July
Self-Heal (*Prunella vulgaris*)	N	Jul - Aug
Common Buckthorn (*Rhamnus cathartica*)	N	May - Jun
Shadbush (SA) (*Amelanchier arborea*) (Also Juneberry, Servicetree)	N	Apr - May
Silver Thyme (OSUW) (*Teucrium chamaedrys*)	N	Jun - Jul
Soybean (*Glycine soja*) (Erratic nectar producer) (No surplus in Ohio)	N	Jul - Oct
Spanish Needles (*Bidens* spp.) (Marginal honey plant)	N & P	Aug - Sep
Speedwell (OSUW) (*Veronica spicata*) (Snapdragon Family)	N	June
Spring Vetch (*Vicia sativa* L.)	N & P	Jul - Aug
Strawberry (*Fragaria* spp.) (Marginal nectar and pollen plant)	N & P	May - Jun
Sumac (SA) (*Rhus glabra*) (Occasionally, good crops)	N & P	Jun - Jul
Sunflower (Common) (*Helianthus annuus* L.) (Good pollen but rarely surplus honey)	N & P	Jun - Sep
Sweet Corn (*Zea mays*) (Sometimes field corn)	P	Jun - Jul
Sycamore (SA) (*Platanus occidentalis*)	P	Apr - May

Tall Ironweed (*Vernonia altissima*)	N	Aug - Sep
Thistle (*Centaurea* spp.)	N & P	Jul - Sep
Thyme (OSUW) (*Thymus pulegioides*)	N	Jun - Jul
Walnut (SA) (*Juglans* spp.)	P	Apr - May
Wheat (*Triticum* L.) (sap from cut stubble, does not result in stored crop)	Sap	May - Jun
White Sweet Clover (*Melilotus alba*) (Major)	N & P	May - Aug
White Ash (SA) (*Fraxinus americana* L.)	P	Apr - May
White Dutch Clover (*Trifolium repens*) (Good honey plant) (Major)	N & P	Jun - Jul
Wild Cherry (SA) (*Prunus serotina* Ehrh.) (occasional honey crop red and bitter)	N & P	Apr - May
Wild Carrot (*Daucus carota*) (Also Queen Anne's Lace, bird's nest plant, devil's plague, lace flower) (minimal nectar producer)	N	Aug - Sep
Willow (SA) (*Salix* spp.) (Major)	N & P	Feb - Apr
Yellow Wood (SA) (*Cladrastis lutea*) (rare in Ohio)	N	May - Jun
Yellow Poplar (SA) (*Lirodendron tulipifera*) (Also Tulip-Poplar, Tulip Tree) (Good nectar source)	N & P	May - Jun
Yellow Sweet Clover (*Melilotus officinalis*)	N & P	May - Aug

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NOTE: Disclaimer - This publication may contain pesticide recommendations that are subject to change at any time. These recommendations are provided only as a guide. It is always the pesticide

applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registrations, some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The author and Ohio State University Extension assume no liability resulting from the use of these recommendations.

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TDD # 1 (800) 589-8292 (Ohio only) or (614) 292-1868
