

*Alabama A&M and
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ANR-0351

ALABAMA A & M AND AUBURN UNIVERSITIES

Nectar and Pollen Producing Plants of Alabama: A Guide for Beekeepers

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. This process also reduces the moisture content of the original nectar. About 18 percent of the water remains in what becomes honey. Chemically reducing sugars and lowering the moisture content of nectar are the two processes that convert nectar to honey.

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 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 almost anywhere in Alabama 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. The numbers of plants in any given area may change considerably over a period of years due to natural events.

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 ideal location for an apiary is in an area free of hazardous insecticides, and should 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.

Some of the primary nectar plants in Alabama are yellow-poplar (also known as tulip-poplar) and various clovers, particularly crimson, arrowleaf and white. Clover honey is often used as the standard for comparison, because clovers and other legumes yield a light-colored, mild-flavored honey. Yellow-poplar nectar produces a high quality, deep amber, full flavored honey. Soybeans and cotton also yield an amber honey that has a good flavor. Both of these commonly grown crops may produce enough nectar for bees to store surplus honey, but the use of insecticides can make beekeeping near these fields quite hazardous.

When 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 (August and later, certainly by the time that goldenrod flowers) is usually suitable for wintering bees. Sumac, sourwood, and vetch are good choices for pollen producers in midseason.

Allow wild, weedy areas (e.g., meadows, fence rows) nearby for supplemental bee pasture. Keep records of dates when 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.

Some wild plants that may be useful for nectar or pollen production also have a negative side that should be noted. These plants of concern are exotic, invasive plants that crowd out native species, disrupt native ecosystem processes, and reduce biodiversity and forest productivity. These invasive plants are not native to the southeastern United States, but were introduced from other continents during the last 200 years. Chinese privet and tallowtree (or popcorn tree) are two examples of well-established, invasive plants that also provide for bee pasture. While honeybees will forage these plants, intentionally planting these is not recommended.

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 than 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 the nectar and pollen producing plants in the vicinity of their apiaries for successful honey production. This knowledge will enable them to 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.

Honey bees may be kept almost anywhere in Alabama. There are enough nectar and pollen producing plants within flight range to produce some surplus honey if the bees are correctly managed. The list of nectar and pollen producing plants in the publication is not all-inclusive. It is a list of some of the plants that may be found growing in various 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.

Table 1. Some Nectar and Pollen Producing Plants of Alabama (A-M)

Plant	Nectar/Pollen	Dates of Bloom	Section
Alder (<i>Alnus serrulata</i>)	P	February–March	E
Alfalfa (<i>Medicago sativa</i>)	N&P	April–September	C&N
Elm (<i>Ulmus</i> spp.)	P	February–March	E
American Holly (<i>Ilex opaca</i>)	N&P	April–June	E
Apple (<i>Malus</i> spp.)	N&P	April–May	C&N
Aster (<i>Aster</i> spp.)	N&P	June–November	E
Basswood (<i>Tilia americana</i>)	N&P	June	N&C
Bitterweed (<i>Helenium amarum</i>)	N&P	May–Frost	E
Blackberry (<i>Rubus</i> spp.)	N&P	March–May	E
Black Locust (<i>Robinia pseudoacacia</i>)	N&P	April–June	C&N
Blueberry (<i>Vaccinium</i> spp.)	N	February–June	E
Boneset (<i>Eupatorium</i> spp.)	N&P	June–October	E
Buckwheat (<i>Fagopyrum esculentum</i>)	N	June–Frost	E
Carolina Laurelcherry (<i>Prunus caroliniana</i>)	N&P	March–April	S&C
Chaste Tree (<i>Vitex negundo</i> and <i>V. agnus-castus</i>)	N&P	June–July	E
Clover:			
Arrowleaf (<i>Trifolium vesiculosum</i>)	N&P	April–July	E
Ball Clover (<i>Trifolium nigrescens</i>)	N&P	March–May	E
Crimson clover (<i>Trifolium incarnatum</i>)	N&P	April–June	E
Red Clover (<i>Trifolium pratense</i>)	N&P	May–September	N&C
White Clover (<i>Trifolium repens</i>)	N&P	April–September	E
Corn (<i>Zea mays</i>)	P	June–October	E
Cotton (<i>Gossypium hirsutum</i>)	N&P	July–October	E
Cottonwood (<i>Populus deltoides</i>)	P	March–April	E
Dandelion (<i>Taraxacum officinale</i> and <i>T. erythrospermum</i>)	N&P	February–June	E
Florida Pusley (Also Florida Purslane) (<i>Richardia scabra</i>)	N	June–Frost	S
Gallberry (<i>Ilex glabra</i>)	N&P	May–June	S
Goldenrod:			
Flat-topped (<i>Solidago</i> spp.)	N&P	July–October	E
Plume type (<i>Solidago</i> spp.)	N&P	July–October	E
Horsemint (<i>Monarda</i> spp.)	N&P	June–September	E
Ironweed (<i>Vernonia</i> spp.)	N&P	June–October	E

Key

N = Nectar, P = Pollen,

E = Entire State, N = North Alabama, C = Central Alabama, S = South Alabama

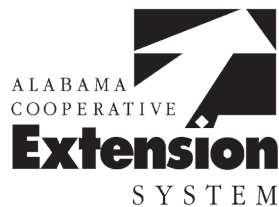
Table 2. Some Nectar and Pollen Plants of Alabama (N–Z)

Plant	Nectar/Pollen	Dates of Bloom	Section
Palmetto (<i>Sabal</i> spp.)	N&P	May–July	S
Peach (<i>Prunus persica</i>)	N&P	March–April	E
Pear (<i>Pyrus</i> spp.)	N&P	April	E
Plum (<i>Prunus</i> spp.)	N&P	March–April	E
Redbud (<i>Cercis canadensis</i>)	N&P	March–May	E
Red Maple (<i>Acer rubrum</i>)	N&P	January–March	E
Smartweed (<i>Polygonum</i> spp.)	N&P	May–November	E
Sourwood (<i>Oxydendrum arboreum</i>)	N&P	June–July	E
Soybean (<i>Glycine max</i>)	N&P	July–October	E
Sumac (<i>Rhus</i> spp.)	N&P	May–September	E
Sunflower (<i>Helianthus</i> spp.)	N&P	June–October	E
Sweetclover:			
Biennial White (<i>Melilotus alba</i>)	N&P	April–October	C&N
Biennial Yellow (<i>Melilotus officinalis</i>)	N&P	April–October	C&N
TiTi (<i>Cliftonia</i> spp.)	N&P	March–April	S
Tupelo (<i>Nyssa</i> spp.)	N&P	April–May	E
Vervain (<i>Verbena</i> spp.)	N&P	March–October	E
Vetch:			
Bigflower (<i>Vicia grandiflora</i>)	N&P	April–June	E
Hairy (<i>Vicia villosa</i>)	N&P	May–September	E
Narrowleaf (<i>Vicia angustifolia</i>)	N&P	March–June	E
Woollypod (<i>Vicia dasycarpa</i>)	N&P	May–September	E
Willow (<i>Salix</i> spp.)	N&P	April	E
Yellow-Poplar (Also Tulip-Poplar or Tuliptree)	N&P	April–June	E
(<i>Liriodendron tulipifera</i>)			

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