

# Bee Friendly Gardening



Noelle Akin

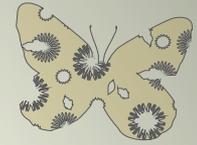
Petitti Garden Centers

# Bees are...

- ✿ Primary pollinators
- ✿ Consumers, collectors, transporters of pollen
- ✿ Plant conservationists
- ✿ Preservers of the environment



# Interesting Pollinator Facts:



- Approximately **1,400 food crops** grown world wide, 80% require pollinators!
- 1 out of every **3rd bite of food** comes to us through the work of pollinators.

<http://www.fs.fed.us/wildflowers/pollinators/whatispollination.shtml>



# Preserve, Protect & Attract by...

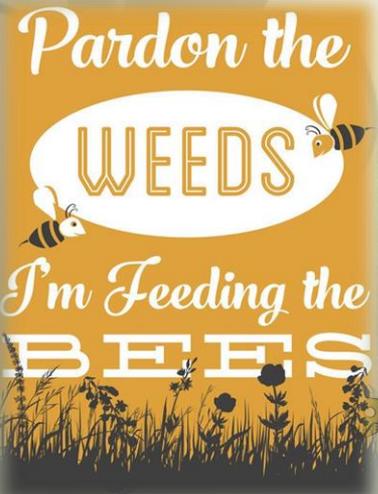


- ✿ Provide a **food source** = **Plants**
- ✿ Maintain clean **water** sources
- ✿ Build cover or provide **shelter** areas
- ✿ Install places to mate & rear young
- ✿ Use **sustainable garden practices**



# Pollinator Food

- ✿ Plants of all different shapes & sizes, **diversity** is key!
- ✿ They love weeds!
  - ✧ Pollen for protein
  - ✧ Nectar for carbohydrates and energy
- ✿ Convert the lawn into a garden
- ✿ Use and incorporate **native plants**



# Provide Water & Shelter



- ☀ Clean source of water year-round
  - \* Bird baths with heaters
  - \* Puddles & ponds
  - \* Drip irrigation
  - \* Rain gardens
- ☀ Common cover & shelter



- \* Evergreen hedgerows
- \* Nesting materials
- \* Bird, bat, butterfly & bee houses
- \* Logs, tree stumps, rocks



# Environmentally Friendly Gardening



- ✿ Limit pesticides – use IPM
- ✿ Mulch with organic matter
- ✿ Conserve water
  - ✿ Use rain barrel, soaker hoses, drip irrigation
  - ✿ Xeriscaping or rock gardens
- ✿ Removing invasives, restoring native plants



# Honeybees

- Non-native, domesticated from Europe/Asia, 24 geo races
- Social/Hive - Queen, Worker & Drone
- 33-40% ag crops/up to 80% non-ag crops
- Active 55-66 degrees
- Forage far from home, 4 miles round trip
- Honey production:
  1. Nectar collection (265# = 1 colony)
  2. Nectar to Honey – Bee digestion!
  3. Filling the beeswax comb
  4. Evaporating honey – natural fan power 80% to 15% water
  5. Capping honey with wax



## The honeybee breakdown

### Worker bee

Female bees gather nectar and pollen. They also build and protect the hive.



### Queen bee

As the matriarch of the hive, the queen bee is the only female bee capable of laying fertilized eggs.



### Drone bee

The male bees' only duty is to mate with the queen. They die afterward.



Source: Sarah Cramer  
MARIA F. CALLEJON/Missourian

# Native (Wild) Bees

- Gentle, solitary, non-stinging
- 2/3rds live underground!
- Pollinate 80% of flowering plants
- Active earlier in spring at lower temps.
- Forages close to home, 200 yard radius
- Very efficient, stays on task, keeps honeybees moving= increases pollination
- Sonication (some)– 24,000 vibrations/min
- Little affected by Varroa mites, no hybrid Africanized bee, etc.
- Weigh economic value of seed set/fruit formation vs. honey & wax production



# Native Bees

## ☀ Ground/Soil dwellers

- ☼ Bumble – semi-social, found in ground & cavity! Active all season
- ☼ Sweat- all season activity, all soil types
- ☼ Squash – avoid deep tilling
- ☼ Digger

## ☀ Wood/Cavity dwellers

- ☼ Leafcutter – legumes, alfalfa
- ☼ Orchard Mason – fruit & nuts
- ☼ Carpenter – wood, stems of raspberry, elderberry & perennials



# Bee Attraction

- Flower Color – bright white, yellow or blue, UV (cannot see red)
- Nectar Guides – Present
- Odor/Fragrance – Fresh, minty, aromatic
- Nectar - Present
- Pollen – Often sticky and scented
- Flower Shape – Shallow, tubular, have a landing platform, bilateral or radial symmetry



# Bee Plant Selection – Single Flowers

- ✿ Composite Family
- ✿ Visible pollen
- ✿ Radial symmetry



# Bee Plant Selection - Violet & Tubular

- ✿ Purple to Lavender bloom color
- ✿ Tubular flowers – for long-tongued bumble bees, etc.

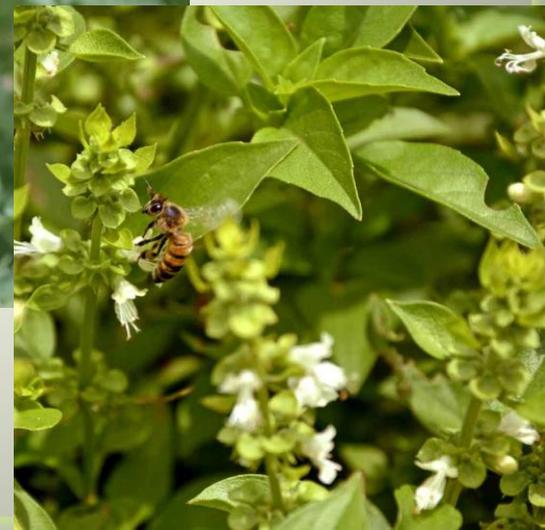
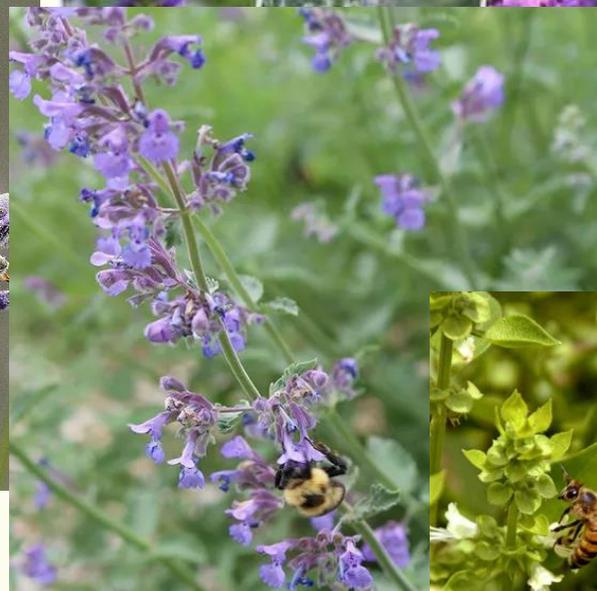


# Bee Plant Selection – Trees & Shrubs

- Fruit – Apples, Cherries, Pears, Blueberries, Chokeberry, Elderberry
- Tilia (Linden)
- Amelanchier (Serviceberry)
- Gleditsia (Honey locust)
- Hydrangea (lace cap types)
- Cotoneaster
- Hypericum (St. John's wort)
- Ligustrum (Privet)
- Spirea
- Roses – single flowering



# Bee Plant Selection – Mint Family



# More Bee Favorites



# References

- <http://www.fs.fed.us/wildflowers/pollinators/index.shtml>
- <http://www.pollinator.org/>
- “The Buzz on Native Pollinators” by Laura Tangley  
<http://www.nwf.org/NationalWildlife/article.cfm?issueID=129&articleId=1735>
- <http://www.nwf.org/gardenforwildlife/#>
- “Alternative Pollinators: Native Bees” by Lane Greer <http://attra.ncat.org/attra-pub/nativebee.html>



Happy Gardening!



[www.petittigardencenter.com](http://www.petittigardencenter.com)

