

## Types of Flowers used by the Honey Bee

### Nectar source

- Depends on the type of vegetation and length of the bloom period.
- This depends on the soil texture, soil pH, soil drainage, temperatures, precipitation, growing degree days
- We are in the USDA Hardiness zone 5.
- Depends on the agricultural use of the land.
- More diverse a forage area, the better for stationary apiary.

### Spring

- Blooming Months
  - February to May
- Less than 200 lbs/hive/acre
  - Maple, Red Maple, Ohio Buckeye, Shadbush, Red Chokeberry, Black Chokeberry, Hawthorn, Honey Locust, American Holley, Apple, Crab Apple, Cherry, Pear, Plum, American Elm, Blueberry, Chives, Asparagus, Milk Vetch, Mustard, Leoparsbane, Woundwort, chickweed,

#### Greater than 200 lbs/hive/acre

- Black Locust, Raspberry, Blackberry, Willow, Pussy Willow, Oilseed Rape (Canola), White and Yellow Seat Clover, Phacelia, Tansy, Dandelion,

### Summer

- From June to September
- Less than 200 pounds of Honey/hive/acre
- Anise Hyssop, chives, garlic chives, leadwort, Butterfly Weed, Marigold, Melon, Pumpkin, Wild Carrot, Buckwheat, Basil, Lavender, Peppermint, Catnip, Russian Sage, Thyme, Common Vetch
- Greater than 200 lbs/hive/acre
- Milkweed, Aster, Borage, Canada thistle, Blue Thistle, Viper's bugloss, Blue Weed, Globe Thistle, Fireweed, Soybean, Alfalfa, Clover, White and Yellow Sweet Clover, Lemon Balm, Red Flowering Thyme, Alsike Clover, Crimson Clover, Red Clover,

### Fall

- Less than 200 lbs/hive/acre
- Tall Ironweed
- Greater than 200 lbs/hive/acre
- Sweet Autumn Clematis, Sedum Autumn Joy, Bee Tree, Heather, Goldenrod,

## Growing Degree Days

- Ambient Temperature controls growing of plants.
- If moisture is present the maturity depends on air temperature.
- Growing Degrees is defined as the number of temperature degrees above a certain base temperature.
- Plant growth is zero.

## Why Growing Degree Units?

- Estimate the growing rate of crops and weeds.

## Growing Degree Day Calculation

- T base = 30 deg F.
- Top T base is 86 deg F.

$$GDD = \frac{T_{\max} + T_{\min}}{2} - T_{\text{base}}$$

## Sample Calculations

- A day with a high of 55 °C and a low of 5 °C (and a base of 50 °C) would contribute 2.72 GDDs.

$$GDD = \frac{T_{\max} + T_{\min}}{2} - T_{\text{base}}$$

2

$$GDD = \frac{55.4 + 50}{2} - 50$$

2

$$GDD = 2.72 \text{ degree days}$$

## Practice Calculations

- Temperature base is 32 degrees
- Max temperature on Wednesday was 78 deg F
- Min Temperature on Thursday morning was 32 deg F.
- The Max Temperature on Thursday 80 deg F.
- The Min Temperature on Wednesday was 27 degrees

## Results

- Wednesday = 20.5 degree days
- Thursday = 24 degree days
- Total degree days = 44.5

What does this tell us?

- Red Maple takes 1-27 GDD to Blossom
- Horsechestnut takes 80 – 110 GDD to Blossom.
- Black locust takes 140-160 GDD to Blossom