

Nac Beekeeping Class 2025 Lesson 1

1. Honeybees' contribution to agriculture and our society; Is it only about the honey?

- ☉ Cross-Pollination of fruit trees increases fruit production
- ☉ Almonds depend on honeybee pollination 100%
- ☉ Seed farmers rely on honeybees
- ☉ Wax for cosmetics and industry
- ☉ Propolis for medicine and varnishes
- ☉ Honey as a sweetener and local allergy medicine
- ☉ Pollen as supplement
- ☉ Bee sting therapy

2. Jobs worker bees do inside the hive (hive bees) and in the field (field bees)

- ☉ Eat honey (carbs), Pollen (contains protein and fats) Royal Jelly (reserved for larva and Queen)
- ☉ Maintain steady temperature of 98 degrees around eggs and larvae summer and winter time
- ☉ Secrete wax and royal jelly
- ☉ Build and repair comb
- ☉ Process nectar and pollen and preserve it by capping each cell
- ☉ Air-condition the Hive
- ☉ Guard the entrance
- ☉ Baby sit and feed larva
- ☉ Queen attendants groom the queen, take her waste out, produce royal jelly feed it to her
- ☉ Make propolis from plant-sourced resin and wax
- ☉ Polish the inside of the hive with propolis (their remedy against pathogens)
- ☉ Cleaning any mess, and chasing invading insects out
- ☉ The above are the **hive jobs (bees age 1-20 days)** the below are the **field jobs (bees age 21-40)**
- ☉ Scouting for recourse- nectar, pollen, resin from leaf and flower buds (used as medicine and glue - propolis)
- ☉ Collecting Nectar and pollen
- ☉ Bringing in water for AC needs (swamp cooler) and diluting thick honey into thin food to feed the larvae
- ☉ Scouting for new housing
- ☉ Fighting real or perceived intruders
- ☉ Cross Pollinating crops (unintentionally, yet by God's design:) (Bee Age determines the job assignments☺)

3. Gender differentiation in honeybees

- ☉ **Queen** – Fully developed female (born out of a fertile egg and fed only royal jelly RJ)
- ☉ **Drone** – Fully Developed male (born out of unfertile egg and fed RJ at larva stage only)
- ☉ **Worker** – Underdeveloped female (born out of a fertile egg fed same as drone, has dormant ovaries) If fed royal Jelly later in life, the ovary may develop and eggs will be produced. However midge underdeveloped, sterile drone will be born out of those eggs)

4. Honeybee Lifecycle

- ☉ **Queen** – days 1,2,3 egg, days 4-9 Larva, Days 10-15 transforms into cocoon, day 16 – hatches as a fully developed queen, they mate-in-flight once in their lifetime with multiple drones and retain Drones' sperm in their abdomen to fertilize newly produced eggs or not as needed. Queen lives about 2-5 years depending on how intensive is her egg laying is. Her job is to lay eggs
- ☉ **Worker** - days 1,2,3 egg, days 4-9 Larva, days 10-20 transforms into cocoon, day 21 hatches. Worker lives 35-45 days during intense summer work season, and 4-7 month in the winter in Canada or Siberia doing little work just preserving the spark of life for the spring development
- ☉ **Drone** – days 1,2,3 egg, days 4-9 Larva, days 10-23 transforms into cocoon, day 24 hatches. Drones live a few months, do no jobs, mate-in-flight once and die. Not all drones get to mate. Many live in the hive till the bees chase them out of the hive to conserve their resources for the winter or during drought season

5. Bee Breeds

- ☉ **Italian** – Yellow/blond a very docile breed, robust colonies, make lots of honey if the honey-flow is good; a bit lazy during nectar drought. Instead of scouting for nectar far and wide they start robbing adjacent hives during nectar drought
- ☉ **German** – the original Honey bee brought to the US by the pilgrims. Moderately aggressive, good producer of honey
- ☉ **Caucasian** – From Caucus mountains, not too aggressive, hard worker, does well in cooler temps
- ☉ **Russian** – known for excessive grooming hygienic habits which helps retard their parasite infestation, good honey producers
- ☉ **Africanized** – Resulted from Crossbreeding African (a moderately aggressive but hard working breed with Italian – a docile but fairly lazy breed) the Resulting bee turned out extremely aggressive will send thousands of soldiers to fight intruders and will chase them for miles☺ (moderate aggressive colony will send out 10-50 soldiers and will chase the enemy for 10-50 yards) The crossbreeding experiment was done in 1956 in Brazil and a swarm of Africanized bees accidentally escaped the lab. They kept procreating and moving North all the way to OK and CA

6. Est Texas Strongest Sources of nectar and pollen (starting in winter progressing into late fall

- ☉ **Pollen** – Onion Flower, Elm, Maple, Dandelion, Clover, Sunflower, grasses and Wild Aster
- ☉ **Nectar** – Onion Flower, Blackberry, Blueberry, Wild Persimmon trees, Crimson Clover, Privet, Mimosa, Pepper vine, Chinese Tallow tree, Sunflower, Goldenrod, Wild Aster