

Beekeeping



A “New-bee” Perspective



What's the Buzz?



- ❧ Funny Honey Bee facts
- ❧ All About Honey Bees
- ❧ What Can Go Wrong?
- ❧ What Do I Need?
- ❧ Now What?
- ❧ Liquid Gold
- ❧ Resources

Funny Honey Bee Facts



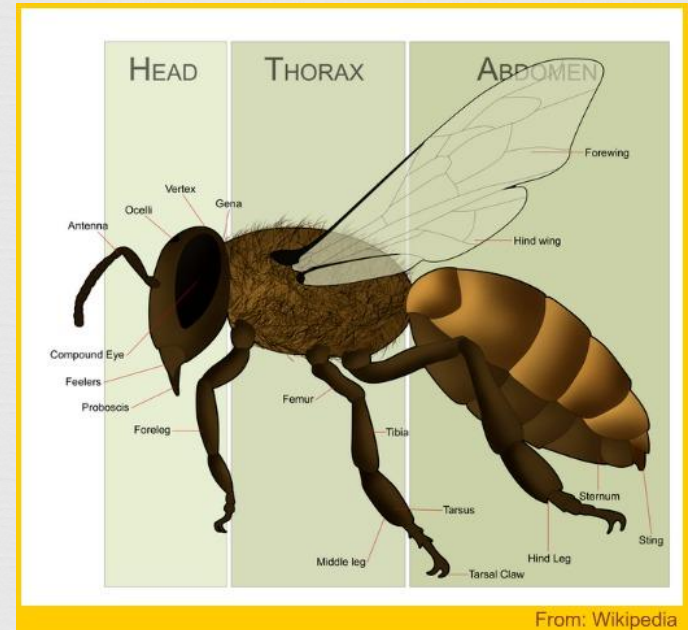
- ❧ You can thank bees for every third bite of your food.
- ❧ Bees have been around for millions of years
- ❧ Pure honey does not spoil
- ❧ Forage on of the same kind of bloom as long as lasts
- ❧ Bees live longer in the winter than in the summer
- ❧ Bees perform multiple jobs during their lifetime
- ❧ Honeybees are the only insect which produce food eaten by man
- ❧ 6-8 lbs of honey is needed for 1 lb of beeswax
- ❧ Honeybee's wings stroke about 200 beats per second
- ❧ Bees stingers only stick in mammals

All About Honey Bees



Body Parts

- ☞ Skeleton – insect so it's outside the body (exoskeleton)
- ☞ Head – brain & sensory organs, glands
- ☞ Thorax – middle part, wings & 6 legs
- ☞ Abdomen – digestive, wax, scent & stinger



Who Lives In A Colony?



Queen

There is just one queen in the hive. Her job is to lay eggs and preside over the hive.



Worker

All worker bees are female. Their role is to collect food and water, care for the larvae and guard the hive.



Drone

Drones are the only males in the hive. Unlike the queen and the workers, drones do not have stingers.

Types of Bees - Queen



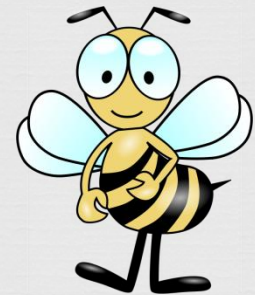
- ❧ Only one per hive
- ❧ Largest bee in colony
- ❧ Two purposes
 - ❧ 1) Produces the pheromone that unites the hive
 - ❧ 2) Lay eggs - 2,000 per day
- ❧ Can live up to 5 years
- ❧ Workers care for every need, feeding, grooming
- ❧ Never leaves the hive



Types of Bees - Drone



- ❧ Male bee
- ❧ About 15 % of a hives population
- ❧ Has no Stinger
- ❧ Does no work
- ❧ Only job is to mate with virgin queens
- ❧ Thrown out of the hive when cooler weather starts



Types of Bees - Worker



- ❧ All workers are female
- ❧ Life span 6 wks in summer and 4-8 mo. in winter
- ❧ Housekeeper : days 1-3
 - ❧ Eats and then cleans empty cells
- ❧ Undertaker: days 3-16
 - ❧ Removes dead or diseased bees, invaders
- ❧ Nurse days 4-12
 - ❧ Feed & care for larva
- ❧ Attendant: days 7-12
 - ❧ Tend to the queen



Worker – Still working



- ❧ Collector: days 12-18
 - ❧ Collects pollen and nectar brought into hive
- ❧ HVAC tech: days 12-18
 - ❧ Control temperature in the hive, 90° – 95° F
- ❧ Master Builder: days 12-35
 - ❧ Produce wax to build comb and cap
- ❧ Guard: days 18 to 21
 - ❧ Permit only hive members in
 - ❧ Drive off predators
- ❧ Free at Last: days 22-42
 - ❧ Forage for pollen and nectar
 - ❧ Visit 5 million flowers to produce 1 pint of honey
 - ❧ Travel up to three miles for food



Honey Bee Life Cycle



- ❧ Egg - day 1-3 worker/drone/queen
 - ❧ laid in cleaned cells
 - ❧ Standard size for workers, larger for drones
- ❧ Larva - day 4-8 worker & queen (4-10 drone)
 - ❧ Fed royal jelly then honey & pollen
 - ❧ Eat 1,300 times a day
 - ❧ Cell is sealed after 5 days and larva cocoons
- ❧ Pupa - day 9-21 worker, (9-16 queen), (9-24 drone)
 - ❧ Develops into a bee
 - ❧ After 12 days - eats through the cap and emerges

Hive Products



❧ Royal Jelly

- ❧ Sole food of queen larvae
- ❧ Young nurse bees glandular secretions
- ❧ Collected for cosmetics, lotions, dietary supplements



❧ Propolis

- ❧ Gums & resins collected by foragers, mixed with beeswax
- ❧ Used to seal cracks in a hive, embalm foreigners

❧ Pollen

- ❧ Protein rich powder produced by male parts of flowers



Hive Products



☞ Bee Bread

☞ Pollen + bee secretions = bee food

☞ Beeswax

☞ Secreted, chewed on and used to build hexagonal cells

☞ Store pollen, bee bread, water, nectar, eggs, larvae, honey

☞ 50 lbs. of honey = 10 lbs. of beeswax

☞ Honey

☞ Bee spit? Nectar mixed with enzymes and bacteria, evaporating 80% of water

What Can Go Wrong?



- ❧ Bees swarm
 - ❧ Weak queen
 - ❧ Overcrowding
 - ❧ Because they want to
- ❧ Infestation
 - ❧ Varroa Mite
 - ❧ Tracheal Mite
 - ❧ Wax Moth
 - ❧ Hive Beetles
- ❧ Critters
- ❧ American Foulbrood– this is a bad one!
- ❧ Bees don't read the Bee Handbook

What do I need?

To be an Awesome Beekeeper



- ❧ Knowledge
 - ❧ Take a class
 - ❧ Join a Beekeepers association
 - ❧ Don't be afraid of bees; You will be stung
- ❧ A place to put them
 - ❧ Live in the city (ordinances) or in the country
 - ❧ Forage
- ❧ Equipment
 - ❧ It ain't cheap!!
- ❧ Honey Bees

Forage



☞ Trees & Shrubs

☞ Vitex, Maples, Alders, Sycamore, Redbud, Fruit trees, Sumac, Plum, Lilac, Viburnum, Cottoneaster

☞ Flowers & Wild Flowers

☞ Cornflower, Coneflower, Blanket flower, Paintbrush, Clover, Sedum, Salvia, Goldenrod, Poppy

☞ Herbs

☞ Anise Hyssop, Mint, Oregano, Lavender, Lemon Balm, Sage, Borage, Rosemary, Thyme

Equipment



- ❧ Hive
- ❧ Gear
- ❧ Bees
- ❧ Beekeeping supply houses
 - ❧ Mann-Lake
 - ❧ Kelley Bees
 - ❧ Dadant
 - ❧ Other internet sites
- ❧ Local beekeepers

Hive



- ❧ Bottom Board
- ❧ Hive body
 - ❧ 10-frame or 8-frame
 - ❧ Deep ($9 \frac{9}{16}$), medium ($6 \frac{5}{8}$), shallow ($5 \frac{3}{4}$)
- ❧ Inner Cover
- ❧ Top Cover
- ❧ Entrance reducer
- ❧ Frame
- ❧ Foundation, plastic or wax



Gear

Must Have's



☞ Must Haves

☞ Hive tool

☞ Smoker

☞ Protective clothing – mesh suit for TX heat



Gear

Nice To Have's



- ❧ Nice to Have
 - ❧ Frame rest
 - ❧ Frame grip
 - ❧ Blow torch & propane tank
 - ❧ Feeder
 - ❧ Hive Beetle traps
 - ❧ Hive stand
 - ❧ Beeswax

Bees



- ❧ Nucleus a.k.a. Nuc
 - ❧ 3-5 frame hive box
 - ❧ Laying queen with eggs and brood, bees, stored honey
- ❧ Package bees
 - ❧ Box of bees
 - ❧ 3 lbs. of bees + laying queen
- ❧ Split established hive
- ❧ Retrieve wild colony
- ❧ Bee swarm



So How Much Is It?



Item	Approx. Cost
Basic Hive	\$75 - \$150
Tools (hive tool, smoker)	\$35 - \$50
Protective Clothing	\$20 - \$150
Supers + frames + foundation	\$35 - \$50
Nucs (5 frames bees + laying queen)	\$150- \$175
	\$315-\$575



Now What?



- Assemble hives – paint any color but stay light tones
 - Bees will recognize their hive by color
- Assemble frames, foundation
- Place in sunny, protected location, facing south
- Fill with bees



What Else?



☞ Check on Bees



What Else?



☞ Feed Bees

- ☞ Sugar water
- ☞ Pollen patties
- ☞ Fresh water

☞ Collect Honey!

☞ Manage apiary



Liquid Gold

Harvesting Honey



☞ Honey Flow

☞ That time of year that bees are busy storing honey

☞ End July - August in East TX

☞ Remove bees from super

☞ Brush off

☞ Blow off

☞ Bee escape boards

☞ Fume boards



Extracting



- ❧ Quickly take covered supers to “honey house”
 - ❧ Sanitary room, bee tight
- ❧ Remove wax cappings
 - ❧ Electric knife
 - ❧ Serrated knife
 - ❧ Scratch Combs
 - ❧ Punch Roller



Extracting



- ☞ Place frames in extractor
- ☞ Centrifugal force slings honey to sides
- ☞ Filter out bee parts, wax
- ☞ Bottle HONEY!



Marketing Honey



- ❧ 100% pure, local honey is in high demand
- ❧ Does not spoil
- ❧ Most honey in supermarkets is processed
 - ❧ Retards crystallization
- ❧ Sold by the pound
- ❧ Farmers Market, Facebook, Craigslist, Feed Stores, Garden Centers

The Law



- ❧ Must be labeled properly
- ❧ Chapter 131 of the Texas Agriculture Code
- ❧ U.S. Department of Health and Human Services
Food and Drug Administration
Center for Food Safety and Applied Nutrition

Resources



- ❧ Northeast TX Beekeepers Association
 - ❧ Meets 2nd Monday at Crossroads Church, Hwy 19 at 6:30 pm
 - ❧ Other local groups
 - ❧ East Texas Beekeepers Association
 - ❧ Henderson County Beekeepers Association
 - ❧ Wood County Beekeepers Association
- ❧ Texas Beekeepers Association
 - ❧ www.texasbeekeepers.org
- ❧ Books
- ❧ Internet



Questions?