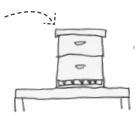
ALTERNATIVE BEE HIVE CASE STUDY:
SHALLOW HIVE

The standard hive in Nebraska is a traditional Langstroth. The Center for Rural Affairs conducted a research project with outside beekeepers, designed to compare and highlight four alternative hive structures: Nuc, Shallow, Top Bar, and Long Langstroth. Each beekeeper was required to keep an alternative hive, as well as two traditional Langstroth hives to use as controls.



This is real-life feedback over the course of three years from two seasoned beekeepers. To learn more about our work with beginning farmers and beekeepers, visit cfra.org/farmers.

BEEKEEPER A:

- Five years experience
- Seward County, Nebraska

Hive location details:

Windbreak – Windbreak to the north

Sunlight amount – Oriented to south and east; in the sun 95% of the day

Water access – Creeks and ponds on property; cattle tanks

Floral resources – Neighbor has monarch butterfly plantings and 700 acres of cover crops; variety of wildflowers, alfalfa, fruit trees in area; added sunflowers and tomatoes in year three

BEEKEEPER B:

- Three years experience
- Jefferson County, Nebraska

Hive location details:

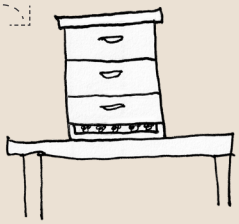
Windbreak – Windbreak to the north

Sunlight amount – Full sun all day; mid- to late-afternoon shade

Water access – Water dish for cats and chickens and condensation from air conditioning units

Floral resources – Weeds, field crops, pasture nearby, trees flowering in spring, vegetable garden throughout the summer and fall

alternative hive details



- A type of honey super (upper-story hive box).
- About half as tall as a traditional Langstroth deep box.
- Traditionally, shallows go on top of traditional Langstroths for honey production, but can also be used as the main hive.
- Each shallow can weigh between 30 and 40 pounds. Weight varies between honey storage and brood storage. Brood is lighter than honey.

PROS

BEEKEEPER A:

- Perfect for cut honeycomb
- Light and easy to handle

BEEKEEPER B:

- All the same size boxes and frames; don't have to keep track of two different sizes

CONS

BEEKEEPER A:

- A lot of hardware required because more frames are needed
- Storage space required; sometimes bees will fill in three days
- Bees don't like to jump up to the next box because of gaps between shallow boxes, which can create problems

BEEKEEPER B:

- Frame feeders span two boxes versus the normal one box
- End up with twice as many frames as normal to complete the hive

TIMELINE AND EXPERIENCE

BEEKEEPER A:

YEAR ONE - 2020

- Happy and healthy bees arrived in April.
- Fed sugar water in the spring.
- Colony was well throughout the year.
- No honey was harvested.
- Preventive treatment for mites in the fall with oxalic acid.
- Fed sugar water in the fall.
- Tar paper used for overwintering.
- A lot of heavy snowfall in the winter.
- One hive survived the winter.

YEAR TWO - 2021

- Bees arrived in April.
- Wet spring; nectar was diluted, pollen was wet, too much water, not a lot of sunshine.
- Bees were fed in the spring.
- Preventive treatment for mites in the spring with oxalic acid.
- Hot and dry summer, no goldenrod present due to drought.
- Harvested about 1.5 gallons of honey from 10 frames.
- No fall feeding.
- Preventive treatment for mites in the fall with oxalic acid.
- Tar paper used for overwintering.
- No hives survived winter.

YEAR THREE - 2022

- All bees were replaced in April after a hard winter.
- Spring was cold, windy, and unpredictable.
- Wind affected the quality of replacement bees; they were weak and not as many as usual.
- Fed sugar water in the spring.
- Summer was hot with little rain.
- No honey harvested.

BEEKEEPER B:

YEAR ONE - 2020

- Bees arrived in April.
- Used in-frame feeders, which spanned two shallow boxes.
- Had difficulty setting up the wireless Broodminder scale and app.
- Fed bees in the spring.
- Had issues with the queen bee early in the spring.
- Preventive treatment for mites in the fall with oxalic acid.
- No honey harvested.
- Bees fed in the fall.
- Tar paper used for overwintering.
- One hive survived the harsh winter.

YEAR TWO - 2021

- Bees arrived in April; one shallow hive replaced.
- Fed the replaced hive in the spring.
- Harvested approximately nine gallons of honey.
- Bees fed in the fall.
- Noticed significant population decline later in the fall.
- Bees died late fall.
- Preventive treatment for mites in the fall with oxalic acid.
- No hives survived the mild winter.

YEAR THREE - 2022

- Both hives were replaced. Bees arrived in April.
- Replacement bees showed up dead.
- New bees had a head start on frames that had honeycomb built the previous year.
- Treated for mites in the spring with oxalic acid.
- Drought conditions throughout the summer.
- Harvested about seven gallons of honey.

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