

CONSTRUCTION DESIGNS FOR ALFALFA LEAFCUTTER BEE SHELTERS

The size of an alfalfa leafcutter bee shelter is governed by an economic use of construction materials, by portability on and off the seed fields and between fields, and by the volume of the overwinter storage space. Shelters protect the bee hives (made of either pine wood or polystyrene nesting material) and the nesting bees from adverse environmental conditions. Being large and visibly obvious, shelters assist the bees in returning to their hives.

Shelters previously tested and made of compressed particle board have proven unsatisfactory. They did not withstand several years use. In comparison, shelters made of standard fir plywood sheets and spruce studs were more durable, reusable, and withstood high winds and rain. Also these materials are inexpensive and readily available. Shelters painted with solid color stain have required less care than those painted with an exterior latex. Previous shelter designs were of solid construction and awkward to transport in utility or on flat bed trailers.

The two take-apart, or collapsible, shelter designs described here use a minimum of construction materials, are highly portable, occupy little storage space, and are easily constructed (see plans). Either wood or polystyrene nesting materials can be used in both designs.

DOUBLE-DECKED SHELTER

This design reduces the drift of bees within or out of the seed fields and increases bee populations in hives within shelters. Their size makes a large silhouette that aids the leafcutter bees in orienting back to the hives or tunnels. These shelters hold 12 hives on the back wall in two sets of six, one above the other, and an additional four hives on each side wall. The top and both pieces of the back are bolted to the sides. The incubation trays are placed immediately beneath the top. Guy wires must be used to anchor this shelter as its height increases its chances of being blown over in winds.

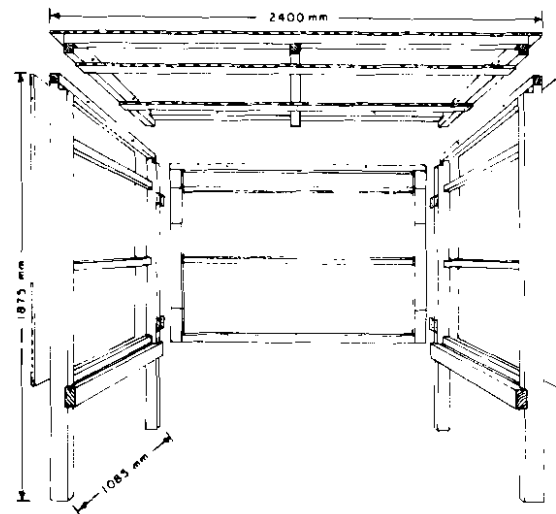


Fig. 1 — Standard alfalfa leafcutter bee shelter.

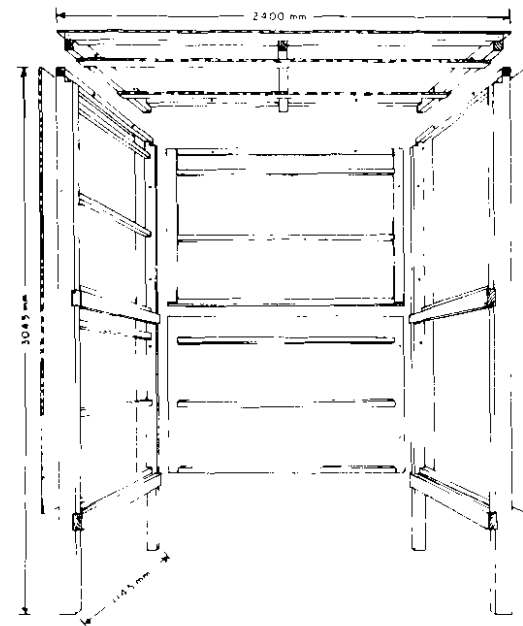


Fig. 2 — Double-decked alfalfa leafcutter bee shelter.

continued



Major construction materials include:

| <u>Quantity</u> | <u>Size</u> | <u>Material</u> | <u>Purpose</u> |
|-----------------|--------------------|--------------------|---|
| 4 | 3000 x 50 x 100 mm | Spruce | Legs |
| 12 | 2400 x 50 x 100 mm | Spruce | Frame for top and sides, hive spacers for sides and back, hive supports |
| 5 | 1200 x 2400 x 8 mm | Fir plywood sheets | Top, sides, back |
| 3 | 25 x 100 x 2400 mm | Spruce | Supports for back |
| 2 | 2400 x 75 x 8 mm | Fir plywood | Top section of back |
| 2 | 2400 x 13 x 100 mm | Fir plywood | Tray supports |
| 14 | 100 x 8 mm | Bolts | |

STANDARD SHELTER

This shelter is a more conventional size for use in western Canada. It holds six hives along the back wall and two on each side wall. The top is bolted to the sides and back and, when the top is removed, the sides fold against the inside of the back. The incubation trays are placed immediately beneath the top.

Major construction materials include:

| <u>Quantity</u> | <u>Size</u> | <u>Material</u> | <u>Purpose</u> |
|-----------------|--------------------|--|---|
| 9 | 50 x 100 x 3600 mm | Spruce | Legs; frames for top, sides, back; hive spacers for back and sides; hive supports for back and side |
| 3 | 2400 x 1200 x 8 mm | Fir plywood sheets | Top, sides, back |
| 2 | 2400 x 13 x 100 mm | Fir plywood | Tray supports |
| 4 | #808 80 x 80 mm | Stanley broad butt hinges steel fasten pins | |
| 6 | 100 x 8 mm | Bolts | |

Metric conversion for the building trade will be completed soon, thus some easy conversion factors are:

1 cm 10 mm 2" x 4" 50 x 100 mm
1 cm 0.39 in 4' x 8' 1200 x 2400 mm

More detailed drawings of the component parts for each shelter design are available from the Research Station, Lethbridge, Alberta.

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