

A COMPARISON OF TUPELO HONEY YIELDS FROM FOUR SIZES OF HIVE OVER A THREE-YEAR PERIOD

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Migratory beekeeping is carried on extensively in Florida to produce the maximum yields of honey. Some beekeepers move their colonies two and three times during the year to take advantage of the successive nectar flows and to provide good reserves of honey and pollen for winter stores. Three sizes of bee hives are used under Florida conditions: the 11-frame modified Dadant, which is a large hive and difficult to move; the standard 10-frame Langstroth; and the 8-frame Langstroth. The smaller 8-frame Langstroth hive is used by many of Florida's migratory beekeepers because it is lighter, easier to load, and appears to have sufficient size to produce a colony of bees capable of gathering a surplus of honey. However, the 8-frame Langstroth hive does not have sufficient storage space for winter stores of honey and pollen without the addition of a super.

The author developed an 8-frame "jumbo" hive with modified Dadant frames which has the same brood area as the 10-frame Langstroth hive, but has the movability of the 8-frame hive. This jumbo hive has sufficient size to be operated as a one-story brood body throughout the year with ample brood area for efficient honey production. It has enough storage area for honey and pollen for the colony to survive the winter.

To compare the efficiency of this new hive with the three standard hives used in Florida, a series of tests were begun under the actual beekeeping practices of the tupelo area of Florida to evaluate the honey producing capabilities of colonies housed in the four hives. The results of these tests are given in this paper.

METHODS

In May 1951, colonies were collected from apiaries at Lake Placid, Gainesville, and Graceville. Four groups of experimental colonies were moved to the platform apiary of Edgar Lanier on the Apalachicola River near Wewahitchka, Florida, April 1952. These colonies were placed on one end of the platform and made a total of 240 colonies in the apiary.

The test colonies were given equal treatment in requeening. There was no supplementary feeding, and during the entire production season the brood was limited to one hive body by queen excluders. Carbolic acid boards were used in removing supers of honey from the colonies. Supers of honey removed from test colonies were weighed with 100-pound-capacity spring cotton scales. The weight of the empty super of combs was deducted from each full super. The empty supers of combs were returned to the colonies after being extracted.

The test colonies were moved from the river platform after the tupelo flow to a farming section near Graceville as single-story colonies. During the summer the colonies reared brood and stored surplus honey for the winter.

If the queen failed in any test colony, the colony was given another queen as soon as possible. Such queen failures are indicated in the data

TABLE 1.—HONEY YIELDS IN POUNDS BY TEST COLONIES FOR
FOUR HONEY CROPS, 1952 TO 1954.

Hive	Colony No.	Tupelo yield 1952	Snow vine yield 1952	Tupelo yield 1953	Tupelo yield 1954	Total honey crop 3 years	Av. per col. for 4 crops
11-frame modified Dadant							
	1	35	39	*	125		
	2	42	43	46	113		
	3	34	42	104	125		
	4	48	38	107	**		
	5	40	41	155	**		
Av. per Col.		39.8	40.6	103.0	121.0		
						1177	69.2
8-frame jumbo							
	1	55	42	119	69		
	2	†	35	50	134		
	3	†	44	128	46		
	4	†	38	74	81		
	5	†	41	10	81		
Av. per Col.		55.0	40.0	76.2	82.2		
						1047	65.4
10-frame Langstroth							
	1	48	36	124	61		
	2	52	42	59	86		
	3	53	47	136	105		
	4	50	38	61	13		
	5	48	42	81	12		
Av. per Col.		50.0	41.0	92.2	55.4		
						1194	59.7
8-frame Langstroth							
	1	62	41	49	109		
	2	60	39	125	85		
	3	64	40	55	95		
	4	55	37	49	*		
	5	60	42	106	*		
Av. per Col.		60.2	39.8	76.8	96.3		
						1173	65.2

* Queenless.

** Dead.

† Colony suffocated during moving. Restocked with 5-pound packages of bees including the queen.

by total loss of the honey crop for that particular nectar flow or an unusually low yield. The colonies were inspected before and after the honey flow for brood rearing activities and to determine if colonies had sufficient stores in the first story or the brood body.

RESULTS AND DISCUSSION

Honey yields by the test colonies are given in Table 1. Analysis of variance showed no significant difference in the yields of the four types of hives over the three year period. A more extended test might have revealed significant differences, but under the conditions of this test all produced similar amounts of honey during the three-year period. Therefore, the selection of one of the four hives should be determined by other factors.

Either 8-frame hive is easier to transport than the larger hives. The standard 8-frame Langstroth is the smaller, but requires more personal attention in the spring because of its limited storage space for honey. Bees when enlarging the brood nest appear to extend it up and downward rather than expand it in width. The narrow 8-frame "jumbo" hive may be more efficient in brood-rearing than the other three hives tested because of its narrow compact brood nest supported by adequate storage of honey in one brood body. This hive has the same brood area of the 10-frame Langstroth hive and the ease of movement of the smaller 8-frame Langstroth. Further tests should be conducted to determine if other factors should be considered in selecting a better hive for Florida migratory bee-keeping.

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