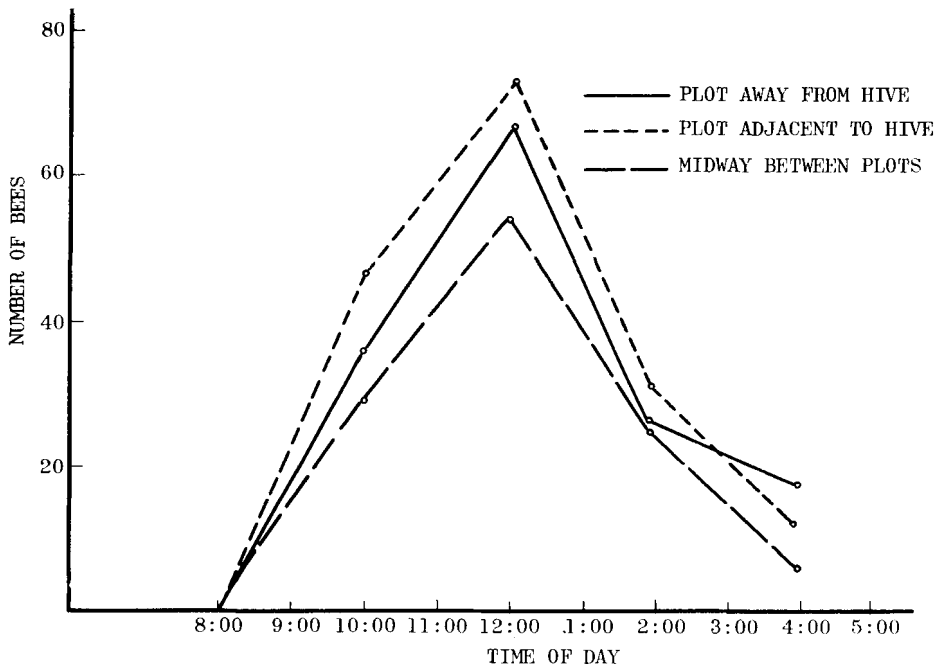


BEE COUNTS BY PLOT LOCATION AND TIME OF DAY
IN POLLINATION TESTS WITH PICKLING CUCUMBERS



linating of cucumbers and prior reports that maximum bee pollinating activity takes place during mid-day.

The graph shows results of bee counts by location and time of day. Standardized counts (50 feet of row per minute) were made five times daily (at 8:00 a.m., 10:00 a.m., 12:00 noon, 2 p.m., 4 p.m.) at each of the six stations adjacent to and between the two duplicate plots.

The highest counts were recorded adjacent to plot B (near the hive), but these were not significantly different (5 per cent level) from counts obtained at plot A (away from the hive). The lowest counts were recorded at the midway sta-

tions between plots A and B. These counts were significantly less than those recorded at B, but not significantly less than counts taken at A (5 per cent level).

Bee counts

Bee counts recorded at noon constituted 46 per cent of the total number of bees counted. Counts recorded at 10:00 a.m. were 26 per cent of the total, and counts recorded at 2:00 p.m. were 19 per cent of the total. Thus, 91 per cent of all bee pollinating activity was recorded as having taken place between 10:00 a.m. and 2:00 p.m.

Bee counts during the course of this

15-day trial were taken largely for the purpose of determining the comparative populations of foraging bees at each of the two plots. It is hoped that future work will establish a simple, reasonably accurate in-field counting procedure that will tell the grower whether the number of bees in his field at a given stage of bloom is above or below the minimum needed for optimum pollination

In this trial, the highest bee count obtained was slightly less than one bee per minute per fifty feet of row. If it is assumed that this count represented a reasonably accurate picture of the bee population in the field at that particular moment, calculations based on 13,000 feet of row per acre and one bee per fifty feet of row, result in a projected population of 260 bees per acre.

Per acre bee requirements *should not and cannot be made* from such a projection of the data until the facts concerning the "support factor" (bees engaged in other activities) are also known and correlated. Until more information is available, the present general recommendation of one to two hives per acre should be followed.

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Close-up of screening procedure. Open screen (center-rear) indicates time of day is between 11:30 a.m. and 1:30 p.m. (Plot B, treatment #6).

EFFECTS OF LIMITED EXPOSURE OF CUCUMBER BLOSSOMS TO BEE POLLINATING ACTIVITY AT VARIOUS TIMES OF DAY FROM 1ST BLOOM + 15 DAYS

	Av. number & weight of fruit per plot (24 plants)			
	Plot A		Plot B	
	No.	wt/gms	No.	wt/ams
*1. Full exposure	—	—	—	—
2. Full exposure (check)	16.7	338.7	21.3	791.0
3. Exp. 1 hr./day— 8:00-9:00 a.m.	1.3	10.0	3.7	74.3
4. Exp. 1 hr./day— 4:00-5:00 p.m.	2.3	32.0	4.3	75.3
5. Exp. 1 hr./day— 12:00-1:00 p.m.	9.0	180.3	9.0	227.7
6. Exp. 2 hr./day— 11:30-1:30 p.m.	7.0	143.0	9.3	233.7
7. Exp. 0 hr./day— full screen	0.3	2.0	0.3	16.3
L.S.D. A- 0.05 6.06; 158	—	0.01 8.49; 221	—	—
L.S.D. B- 0.05 3.29; 278	—	0.01 4.61; 389	—	—

* Hand harvest plant population (6 plants).