Cutting early supersedure cells reduces queen supersedure in colonies developed from packages

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The problem: supersedure of queens in packages

- Beekeepers often say that package queen failure is a significant cause of the failure of colonies initiated from packages

- Tarpy study
  - 27% replacement of package queens within the first five weeks of hiving
  - 40% replacement of package queens within weeks 6-12 of hive establishment

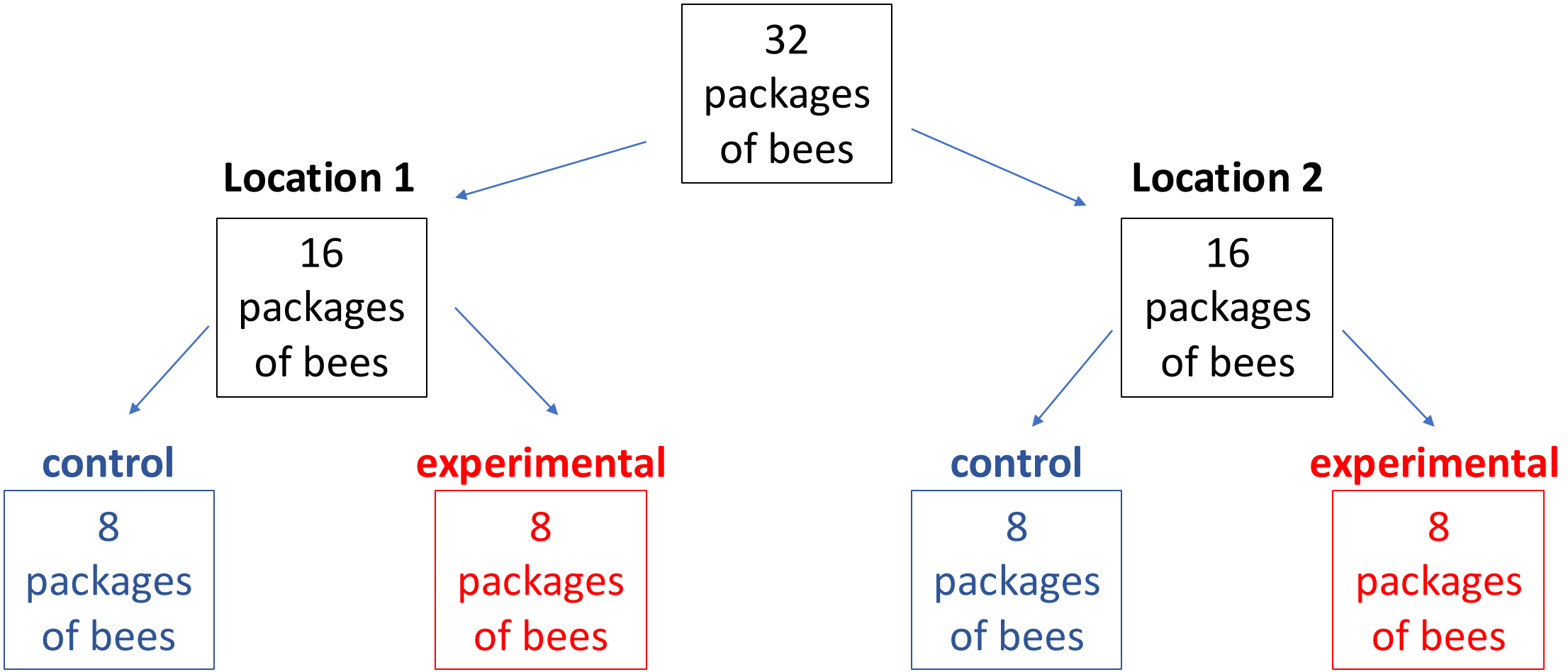
    ⇒Total 67% of queens replaced

Tarpy DR, Talley E, Metz BN. Journal of Apicultural Research. 2021;60(2):220-8.

Hypothesis for the present study

Cutting supersedure queen cells
will reduce queen supersedure
in colonies initiated from packages of honey bees

Study design

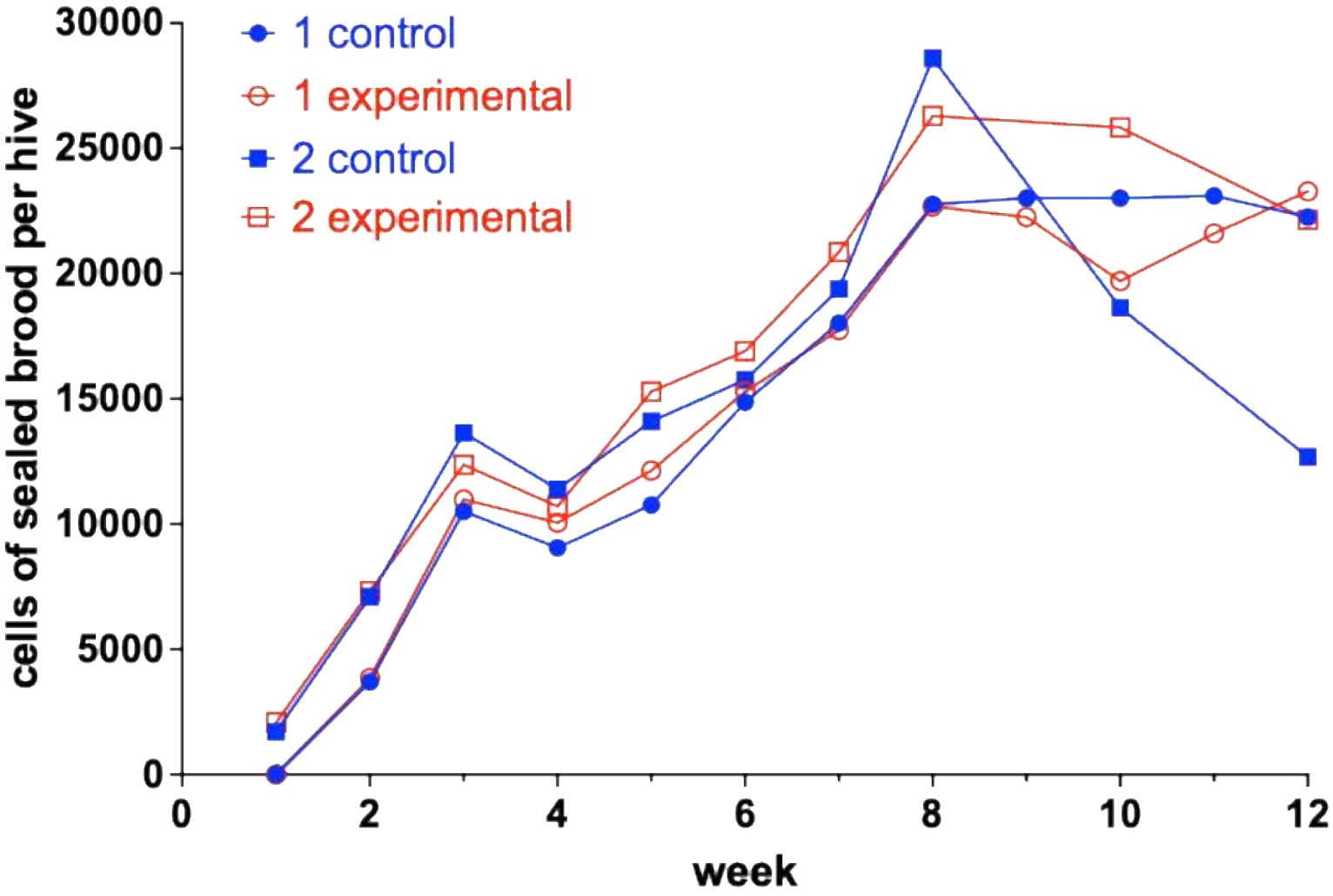


Packages installed into new equipment with foundation at both apiaries

Hives fed 1/1 sugar syrup and pollen sub (Global Patties) for the first 6 weeks

Data recorded weekly for 12 weeks: amount of sealed brood,
the presence of the queen,
the presence of queen cells and their kind (supersedure or swarm)

Amount of sealed brood shows hive growth over the course of the study



Some hives made supersedure queen cells

Control group

Do nothing
allow supersedure queen to develop

Experimental group

Cut supersedure cells

Results
Some colonies made supersedure queen cells

location	study group	# hives making supersedure cells
1	C	0
	E	1
2	C	2
	E	6

Results

Cutting supersedure cells reduced the supersedure of package queens in colonies initiated from packages of honey bees*

location	study group	# hives making supersedure cells	# of hives superseding their package queen
1	C	0	0
	E	1	0
2	C	2	2
	E	6	0

Supersedure cells were cut in the experimental group but not in the control group

*Fischer's Exact test, p = 0.0278

Conclusion

The result of this study supports the hypothesis that cutting supersedure queen cells reduces queen supersedure in colonies being established from packages of honey bees.

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