

RESEARCH AND PURPOSE

Restore the opportunity. Observe the result.

Wild colonies coat rough nest walls with a thin propolis varnish. Smooth commercial lumber suppresses that behaviour. The 3H protocol tests rough interiors without promising outcomes the evidence has not established.

STRONGEST PRACTICAL FINDING

A 2024 field study found that rough-cut, unplanned hive interiors stimulated the most propolis deposition. Some health markers improved, but overall survival did not. Honey yield was lower in one first-year setting and recovered in year two.

WHAT RESEARCH SUPPORTS

Propolis is part of colony-level social immunity. Field studies report changes in immune-gene activity and some bacterial or viral measurements. Chemistry and response vary by region, plant source, season and management.

WHAT RESEARCH DOES NOT SUPPORT

A direct field study found no significant Varroa or associated-virus reduction. A propolis envelope is not mite control and does not replace monitoring, diagnosis, biosecurity, nutrition or responsible colony decisions.

PRIMARY SOURCES — CLICKABLE

Shanahan et al. 2024 doi.org/10.1371/journal.pone.0291744

Borba et al. 2015 doi.org/10.1242/jeb.127324

Drescher et al. 2017 doi.org/10.3390/insects8010015

Pusceddu et al. 2021 doi.org/10.1098/rspb.2021.2101

PRACTICAL SETUP

Build a fair apiary comparison.

Use matched colonies where possible. This is disciplined field observation—not a controlled scientific trial.

1 · PAIR AND LABEL

Pair PROP-A with STANDARD-A. Match queen age, starting strength, cavity volume, sun, wind and forage as closely as practical.

2 · ROUGH THE BROAD WALLS

Best-supported: new boxes with rough-sawn, untreated inside faces. Existing sound boxes may be cross-hatched shallowly or worked with a stiff wire brush.

3 · PROTECT BEE SPACE

Do not gouge frame rests, joints, entrances or fitting surfaces. Remove loose splinters and dust. Roughness should invite thin wall varnish, not burr comb.

4 · ADD NO PRODUCT

Do not paint, oil, tincture or seed the interior with harvested propolis. Let the colony choose its resins and deposition pattern.

5 · PRESERVE THE RECORD

Leave wall varnish intact. Remove only material that prevents safe inspection or equipment fit. Photograph the same four wall areas each time.

COVERAGE SCALE

0 none · 1 spots under 25% · 2 scattered 25–50% · 3 connected 50–75% · 4 near-continuous envelope

OBSERVATION SHEET

One row per colony, every 4–6 weeks.

Compare each colony with its own baseline before comparing hives. Keep the counting method and photo positions consistent.

Date / yard / hive ID

Interior: ROUGH or STANDARD

Queen origin / age / event

Weather, flow and resin plants

Adult population: 1-5

Brood area / pattern: 1-5

Stores or measured weight

Mite method / sample / result

Disease or unusual signs

Temperament: 1-5

Wall scores: N _ E _ S _ W _

New resin colour / location

Management action—or none

Question for next visit

INTERPRETATION

Look for repeated patterns across seasons. Record splits, queen changes and feeding because they may explain more than surface texture. A “no difference” result is useful. Do not call an apiary observation proof.