



IS MANUFACTURED WITH CARE
in France, at our Veto-pharma facility.



NON-GMO



NO PRESERVATIVES



NO ANIMAL
INGREDIENTS

**AVAILABLE
FROM YOUR
BEEKEEPING RETAILER
IN CANADA AND NEW ZEALAND!**



Scan the QR code
to view the retailer list
in your country



**Bactobee®
IS AVAILABLE
IN TWO FORMATS:**

Bag of
250 g
(50 doses)



Bag of 2.5 kilos
(500 doses)

A 5-gram dosing spoon
is included with each bag.

**Want to learn more
about Bactobee®
and *Pediococcus
acidilactici*?**

Visit our webpage
for more information
and additional resources!
Scan the QR code or go to
www.veto-pharma.com



BTB-05-IN-N01-01/26

NEW



**SCIENCE-BACKED
LIVE PROBIOTICS
FOR OPTIMAL
BEE HEALTH**



PESTICIDE



ADVERSE
WEATHER



LIMITED FOOD
RESSOURCES



MIGRATORY
BEEKEEPING



Minimum
1x10¹⁰
CFU
per
application

1 Probiotic for
honey bees,
based on
***Pediococcus
acidilactici***
live bacteria.

2 Helps the bees cope
with **environmental
stressors** such as
pesticide exposure,
adverse weather
conditions, limited
food resources or
migratory beekeeping.

3 Promotes **good gut
health**, stabilizes
microbiota, supports
immune function,
improves colony
performance
and productivity,
and boosts winter
survival.



**Healthy bees
start with
a healthy gut!**



Have a question?

Check out our FAQ on www.veto-pharma.com
or contact our team at info@vetopharma.com





WHY GUT HEALTH MATTERS FOR HONEY BEES

The gut microbiota plays a vital role in honey bee health, performing key functions such as:

- ✓ **Synthesizing important molecules** like enzymes and vitamins,
- ✓ **Activating the immune system**, helping bees defend themselves from disease,
- ✓ **Assimilating nutrients**, ensuring they get the energy they need to thrive.¹

However, stress factors—such as environmental changes, pesticide exposure, diseases, or poor nutrition—can disrupt this delicate balance. These disruptions lead to an imbalance in the gut microbiota, known as **dysbiosis**, where harmful bacteria outcompete beneficial ones.

THE IMPACT OF DYSBIOSIS ON HONEY BEES

Dysbiosis can affect honey bees in several ways, including:

- ✓ **Weakened immunity**, leaving them more vulnerable to pathogens.
- ✓ **Reduced nutrient absorption**, impacting their energy and productivity.
- ✓ **Digestive issues**, which can lower their overall health and lifespan.

These challenges can compromise the strength of the entire colony, especially during times of stress.

HOW BACTOBEE® CAN HELP

This is where **Bactobee®** comes in—a high-quality probiotic specifically designed to restore balance in the bee gut microbiota. By introducing beneficial bacteria, Bactobee® helps honey bees face stressors and maintain optimal health.

WHAT MAKES BACTOBEE® UNIQUE?

- ✓ It's based on **live bacteria**, unlike many other probiotics that rely on dried fermentation products.
- ✓ It contains a scientifically proven strain of bacteria: ***Pediococcus acidilactici***, a powerhouse probiotic with demonstrated benefits for honey bee colonies.
- ✓ Its formulation is **tailored specifically for honey bees**, ensuring it meets their unique needs.



HOW TO USE BACTOBEE

Nurturing your bees with Bactobee® is simple and effective! Follow these steps to ensure your colonies thrive:

DOSAGE

- ✓ Use **5 grams per colony** per application, equivalent to one dosing spoon (included in the bag).
- ✓ Sprinkle the powder gently on top of the frames, placing it near the brood area for maximum impact.
- ✓ Applications can be repeated every **30 days** if needed.

RECOMMENDED APPLICATION PERIODS

To give your bees the best support, apply Bactobee during these key times:

- ✓ **Spring:** At least once to help your colony prepare for the active season.
- ✓ **Fall:** At least once to strengthen your bees for winter.
- ✓ **Stressful times:** During dearth periods or migratory events when your bees need extra care.

IMPORTANT PRECAUTIONS

To ensure the safety and effectiveness of Bactobee:

- ✓ **Do not combine** with antibiotics. If your colony has undergone antimicrobial treatment, wait **at least 2 weeks** before applying.
- ✓ **Avoid application during honey flows** to preserve the purity of your honey.
- ✓ Use the product within **24 months of manufacturing**.
- ✓ **The live bacteria are highly sensitive to light, humidity, and heat.** After opening your Bactobee bag, ensure it is tightly sealed to protect the product.

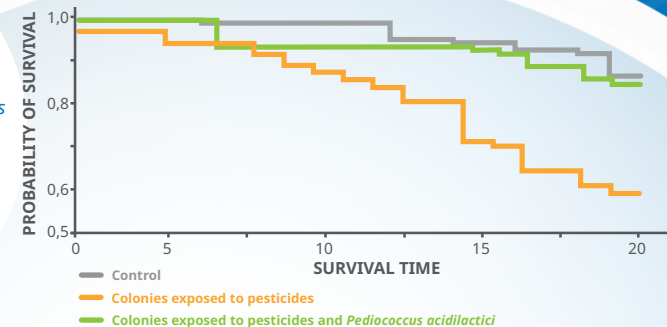
SCIENCE-BACKED BENEFITS OF *PEDIOCOCCUS ACIDILACTICI*

The benefits of *Pediococcus acidilactici* have been extensively documented in honey bee studies.¹⁻² Colonies supplemented with the same carefully selected source of bacteria used in Bactobee showed significant improvements in bee health and overall colony performance:

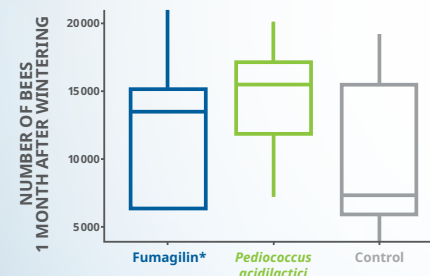
- ✓ **Restored gut microbiota stability:** The bee microbiota became more resilient, with a stronger and more connected network of beneficial bacterial interactions.¹ This improvement is particularly important during the wintering period, a time when digestive issues frequently arise and can weaken colony health.
- ✓ **Greater resilience to environmental stressors:** Bees showed improved tolerance to environmental challenges, including pesticide exposure, ensuring better adaptability in difficult conditions.¹

“A recent study also showed that Bactocell® [the source of *Pediococcus acidilactici* used in Bactobee®] restored the bee microbiota to a state close to the control after the induction of dysbiosis by a stressor factor.”³

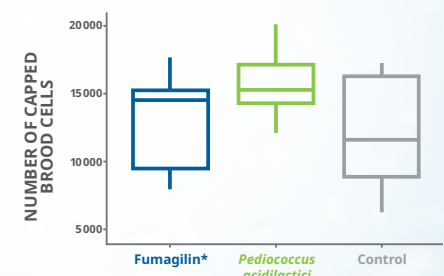
Another study from Peghaire et al.² also demonstrated that co-exposure to two **pesticides** (thiamethoxam and boscalid) was particularly harmful to honeybees. However, treatment with *Pediococcus acidilactici* **completely restored their survival rates** improving it by **more than 40%!**



- ✓ **Improved winter survival and spring recovery:** When applied before wintering, *Pediococcus acidilactici* supported better colony recovery in spring, helping to improve winter survival rates.¹



- ✓ **Stronger colony growth:** Supplemented colonies showed an increase in the number of bees and capped brood cells, contributing to a healthier and more robust hive.¹



- ✓ **Optimized colony performance:** Overall, colonies supplemented with *Pediococcus acidilactici* exhibited enhanced productivity and vitality, underscoring its role in maintaining a thriving hive.¹

* Fumagilin is an antibiotic authorized for use in honey bees in North America to reduce the number of organisms associated with digestive issues.

1 - Gaubert, J.; Mercier, P.-L.; Martin, G.; Giovenazzo, P.; Derome, N. - Managing Microbiota Activity of Apis mellifera with Probiotic (Bactocell®) and Antimicrobial (Fumidil B®) Treatments: Effects on Spring Colony Strength. *Microorganisms*, 2024, <https://doi.org/10.3390/microorganisms12061154>

2 - Peghaire, E.; Moné, A.; Delbac, F.; Debroas, D.; Chaucheyras-Durand, F.; El Alaoui, H. - A *Pediococcus* strain to rescue honeybees by decreasing Nosema ceranae- and pesticide-induced adverse effects. *Pesticide Biochemistry and Physiology*, 2020, <https://doi.org/10.1016/j.pestbp.2019.11.006>.

3 - Sbaghdi, T.; Garneau, J.R.; Yersin, S.; Chaucheyras-Durand, F.; Bocquet, M.; Moné, A.; El Alaoui, H.; Bulet, P.; Blot, N.; Delbac, F. - The Response of the Honey Bee Gut Microbiota to Nosema ceranae Is Modulated by the Probiotic *Pediococcus acidilactici* and the Neonicotinoid Thiamethoxam. *Microorganisms*, 2024, <https://doi.org/10.3390/microorganisms12010192>