



The Science Behind *Bacillus*-Based Carpet Cleaners

For decades, carpet cleaners have been limited to products that only mask or bind pet defecation odors. These chemistries dissipate quickly and leave behind the source of the odors.

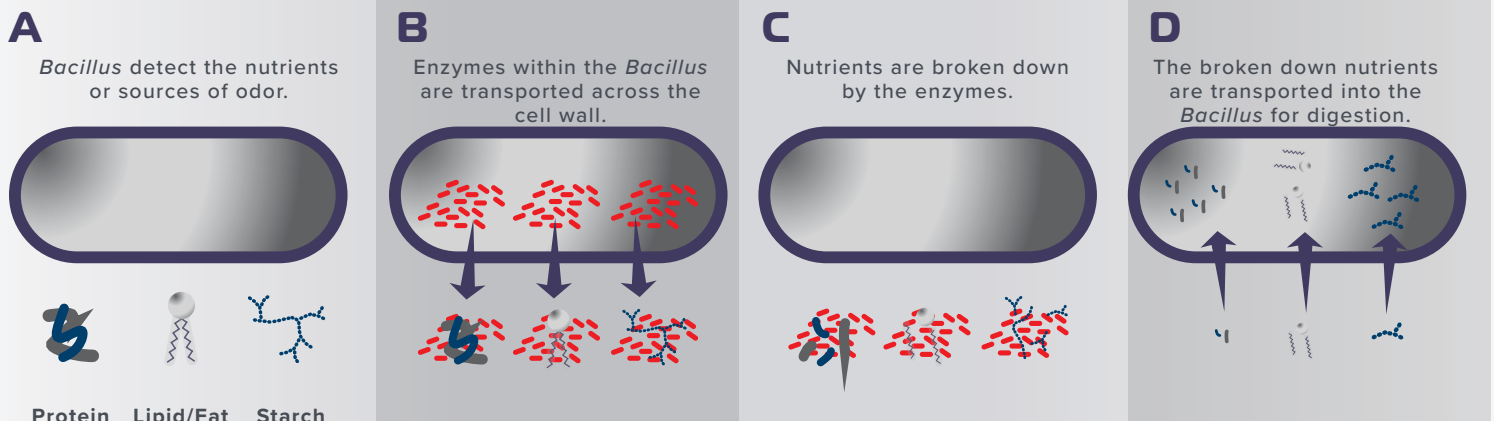
Today, carpet cleaners have *Bacillus*-based options available to help reduce the source(s) of the odor in an environmentally friendly and pet friendly way. *Bacillus* are living microorganisms that reduce pet odors through digestion and keep them away.

The 3 Reasons Why *Bacillus* Are So Effective

- 1 — *Bacillus* treat sources of odor like food and digest them. This reduces foul smells from the carpet (see Figure 1).
- 2 — *Bacillus* continue reducing unseen sources of odor long after initial application.
- 3 — *Bacillus* reduce pet repeated offenses by changing the odor profile of the preferred defecation location.



How *Bacillus* Reduce Pet Carpet Odors



Enzymes

Figure 1

Culprits of Pet Carpet Odors & Sources of Food for *Bacillus*



Volatile Fatty Acids

Volatile Fatty Acids, or VFAs, are organic acids produced by the pet's gut bacteria when metabolizing food waste like fiber, starch, protein and amino acids.

Phenols & Indoles

Phenols and indoles are produced by the pet's gut bacteria when metabolizing amino acids and represent very intense odors.

Sulfur-Containing Compounds

Foul smelling, sulfur-containing compounds are produced by certain amino acid degradation pathways in the pet's stomach as well as through anaerobic sulfate reduction in the gut.

Ammonia

Ammonia is released during deamination - the process of breaking down amino acids for energy - which occurs in the pet's liver and kidneys.

Amines

Odorous amines are released during decarboxylation - the removal of a carboxyl group from a carbon chain in an amino acid - and can smell like fish, decay or bad breath.

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If you'd like to learn more about *Bacillus*-based cleaning solutions and how to become a partner, **CONTACT US.**

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