

RADICLE LIVING



FRESH FOR PETS & HORSES

Concentrated Probiotic Odour Neutraliser

Radicle Living-Fresh is an all-natural, industrial-strength probiotic liquid concentrate containing powerful microbes and their metabolites that neutralise unpleasant odours.

Use Radicle Living-Fresh for:	Benefits of Radicle Living-Fresh:
<ul style="list-style-type: none">• Equine Stables• Composting	<ul style="list-style-type: none">• Fast-acting odour neutralisation• Long-lasting odour neutralisation• Prevents fly nuisance• Reduce stress on animals in closed housing• Cost-effective concentrate

Radicle Living-Fresh dosage and usage guide:

- **Radicle Living-Fresh** is ready to use.
- Mix only as much as directed in the usage guide for each application.

Note: For best results, dilution should be used within 72 hours.

Application	Dilution Ratio	Dilution Example	How to use
ANIMAL HOUSING APPLICATIONS			
Pigeon dovecotes	1:20	1L diluted in 20L/20m ²	Spray twice a week for one month, thereafter weekly
All animal housing	1:20	1L diluted in 20L/200m ²	Spray twice a week for one month, thereafter weekly
	1:300	1L diluted in 300L	Mist continuously through the misting system
COMPOSTING			
Compost raw materials	1:10	Apply 1L diluted in 10L water to 1 cubic meter of material	Apply with misting equipment onto the material for even distribution

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PNSB is also very effective at decomposing organic matter under anaerobic conditions without the production of odiferous compounds such as hydrogen sulphate and volatile organic compounds and in this way competes with microbes that cause putrefaction and its associated odours under high Chemical Oxygen Demand conditions found in the animal wastewater. PNSB also use VOA and alcohols as a source of carbon thereby reducing odours. PNSB also inhibit the production of odorous methyl mercaptans from methane by competing with methanogenic bacteria under anaerobic conditions for volatile organic acids the carbon food source of methanogenic bacteria. Organic acid metabolites in **Radicle Living-Fresh** also react with ammonia in an acid-based reaction to form ammonium salts thus neutralising the odours caused by ammonia and its amine derivatives. Enzyme metabolites in odour control neutralise odour molecules such as hydrogen sulphide, methyl mercaptans and ammonia through oxidation thereof. Organic metal chelates in odour control catalyse the oxidation of odour compounds in the presence of oxygen thus neutralising them. **Radicle Living-Fresh** has been found to reduce horseflies through three mechanisms;

- 1.Reduction in the odours, which attract houseflies to rotting organic matter.
- 2.Increasing the natural parasitism of houseflies by parasitic wasps.
- 3.Increasing the attraction of the non-pest black soldier flies to fermenting organic matter resulting in black soldier flies outcompeting houseflies.

HOW PROBIOTICS NEUTRALISE FOUL ODOUR

Radicle Living-Fresh is an all-natural, environmentally safe odour neutraliser composed of a probiotic consortium of non-GMO Gram-Positive Bacillus (BPP), Lactic Acid Bacteria (LAB), Purple Non- Sulphur Bacteria (PNSB) and Yeast and their metabolites (enzymes, organic acids and organic metal chelates) specially formulated to neutralise odour. The ingredients used in the manufacture of **Radicle Living-Fresh** are all food grades. **Radicle Living-Fresh** is manufactured using food-grade Good Manufacturing Practices (GMP) to HACCP standards in Stellenbosch, South Africa.

The microbes found in **Radicle Living-Fresh** are ubiquitous in the environment and are classified as Generally Regarded as Safe (GRAS) by the US Food and Drug Administration. These microbes are found in human food products and humans can even safely consume **Radicle Living-Fresh**.

The microbes in **Radicle Living-Fresh** can coexist and support each other in odour neutralisation due to their combined metabolic properties. The yeast in **Radicle Living-Fresh** can break down organic substrates and produce pyruvic acid through metabolism. Pyruvic acid can be used as a food source by LAB. In this way, the LAB use the metabolites of yeast to grow and multiply and produce volatile organic acids such as lactic acid which becomes a food source of PNSB and they can grow and multiply. The yeast in turn uses the carbohydrates formed by these PNSB as a further food source and the consortia can multiply repeatedly. This mutual metabolite sharing ensures that the microbes in **Radicle Living-Fresh** continue to aid each other to survive and dominate any environment.

PNSB found in **Radicle Living-Fresh** assimilates ammonia and ammonia derivatives such as amines in environments where organic nitrogen sources are low, such as in the air and on artificial surfaces. PNSB may use hydrogen sulphide and volatile organic acids as a source of electrons. Hydrogen sulphide is oxidized to sulphate and in this way, odours caused by hydrogen sulphide are neutralized.

Rhino Agrivantage (Pty) Ltd

Rhino Agrivantage (Pty) Ltd is a product developer and producer of non-toxic, fully biodegradable, and sustainable probiotic-based chemical alternatives. Rhino Agrivantage (Pty) Ltd is a South African leader in probiotic solutions for human health, home, garden, agriculture, livestock health, industrial and aquaculture applications. Established in 2010, Rhino Agrivantage (Pty)

Ltd manufactures a complete line of probiotic products at their Wellington facility. Products are sold nationally through qualified licenses, distributors, and retailers. BioPro-Coat Spray is not chemically synthesized or genetically engineered or modified. It is non-toxic, non-corrosive and safe to use around humans, animals, and plants.