

The microbes in EM•1

EM-1 ingredients (U.S. version as of May 2010). EM-1 Microbial Inoculant (full name) is OMRI Listed (Organic Materials Review Institute), omri.org, and can be used by certified organic operations.

ACTIVE INGREDIENTS:

Microorganisms: 1 million colony forming units/cc (units/ml), 1%:
Lactobacillus plantarum, *Lactobacillus casei*, *Lactobacillus fermentum*,
Lactobacillus delbrueckii, *Bacillus subtilis*, *Saccharomyces cerevisiae*,
Rhodopseudomonas palustris

INACTIVE INGREDIENTS:

96% Water and 3% Molasses

Lactic Acid Bacteria

L. plantarum - in saliva (first isolated); liquefies gelatin

[foods found in: sauerkraut, pickles, brined olives, kimchi, Nigerian ogi, sourdough, cheeses, fermented sausages, stockfish]

L. casei - in human intestine and mouth; known to improve digestion and reduce lactose deficiency and constipation ; complements growth of *L. acidophilus*

[foods found in: cheddar cheese, green olives]

L. fermentum

[foods found in: sourdough]

L. delbrueckii

[foods found in: yogurt, mozzarella cheese, pizza cheese, Hartkäse, Berg-Alpkäse, Bleu de Bresse, Bleu de Gex, Fourme d'Ambert]

Bacillus subtilis - commonly found in soil; can survive extreme heat; natural fungicidal activity; used in alternative medicine; can convert explosives into harmless compounds; used in safe radionuclide waste; produces amylase enzyme (present in saliva; breaks down starch into sugar)

[foods found in: Japanese natto (fermented soy beans), Korean cheonggukjang (fermented soybean paste)]

Yeast

Saccharomyces cerevisiae - brewing and baking, top-fermenting yeast (ale)

[foods found in: baked breads, coffeecakes, pastries, croissants]

[beverages found in: beer, wine, mead, cider, vinegar]

Phototrophic Bacteria

Rhodopseudomonas palustris - naturally found in soil and water, a food source for small organisms (zooplanktons, small crustacea); a natural detoxifier; degrades odors in agricultural and industrial waste; stimulates growth of actinomycetes (white 'mold') which suppresses the growth of pathogenic fungi, improves soil structure, humus formation, helps soil retain water, and breaks down tough plant materials; benefits growth of certain crops and fruits; also found in earthworm droppings, swine waste lagoons, marine coastal sediments, pond water. [foods found in: Swiss cheese]