

Wormswork™ Composite Mix

There are three components to any healthy soil where sustainability is sought

Physical structure;

soil structure and drainage achieved from the presence of sand, loam or clay for which gypsum is needed to assist clay-based soils to drain more freely,

Chemical nutrients;

Available as macro (N-P-K) and micronutrients that depend on soil pH for the availability and uptake by plants which vary enormously depending on which crops are being grown and

Micro biological activity in the soil;

Organic matter which provides the diversity of fungal, bacterial and soil borne nematodes, that are only present in a live inoculated organic product such as the *Wormswork™ Composite mix* of worm castings provide. Coupled with a massive organic buffer and hygroscopic media that holds water and aids nutrient uptake due to its enormous cation exchange; very little of which can be delivered from steam sterilized organic pellets or brewed seaweed and algal compounds. Even biological activity can improve soil structure to some extent.

So what does *Wormswork™ Composite mix* contain?

Each batch of *Wormswork™ Composite mix* that is created is tested for its beneficial microorganisms by Soil Food Web Australia East Lismore NSW as well as analyzed for its major and minor elements by Australian Perry Agricultural Laboratory Pty Ltd at Magill SA. This is a summary of those results and the role they play to improve your soil or potting media.

Microorganisms present

Active bacteria count 193 mg/g in a total of 3388 mg/g present, which has excellent diversity as a result of the product being inoculated so that the organisms remain alive.

Active fungal count 26.7 mg/g in a total of 477 mg/g present, which is excellent due to the feedstock inoculating the product and keeping it alive. Hyphal diameter 2.5 mm, which exhibits a good balance of disease suppressive and normal soil fungi.

Arbuscular mycorrhizal (AM) fungi increase phosphate uptake and stimulate plant growth in soils low in phosphate, which is most of Australia and many native Australian plants need these to thrive. The two types of AM fungi are ectomycorrhizae and they colonise the external roots to aid nutrient uptake, while the endomycorrhizae form associations within the cell structures to aid healthy root growth even on poor soils. Research has shown these AM fungi have a profound effect on potato crops where 50% boost in yields has been claimed. There is an AM association that has been identified with olive production too and explains the occurrence of heavily cropping olives known to be over 500 years old on poor skeletal Mediterranean soils. Native plant nurseries in Australia add an inoculated slurry of AM to their tubestock crops of casuarinales, legumes and proteaceous plants as a matter of good plant husbandry.

1. The Rodale Institute Pa USA, research by Dr David Douds USDA research soil microbiologist 2008.
2. "Mycorrhizas and Olive Trees; Letting nature take its course". By Prof. Lyn Abbott, TR Ganz and SG Kailis at the Faculty of Natural and Agricultural Sciences, University of Western Australia Nedlands WAUS.



Chemical nutrients at pH 7.5, with electrical conductivity 2.65 dS/m;

Total Kjeldahl nitrogen N	1.80% (w/w)
Phosphorus P	1.60% (w/w)
Potassium K	0.36% (w/w)
Calcium Ca	10.20% (w/w)
Magnesium Mg	0.43% (w/w)
Sulphur S	0.44% (w/w)
Iron Fe	1.50% (w/w)
Copper Cu	0.03% (w/w)
Manganese Mn	0.02% (w/w)
Zinc Zn	0.04% (w/w)
Boron B	0.006% (w/w)
Sodium Na	0.53% (w/w)

Beneficial nematodes per gram of *Wormswork™ Composite mix* defined by genera;

Cephalobus	0.30
Cuticularia	0.61
Diplogaster	2.42
Mesorhabditis	0.30
Pelodera	0.61
Rhabditidea II (It)	5.14
Rhabditis	3.33

Total nematodes per gram of *Wormswork™ Composite mix*, 33.0

Protozoa per gram of *Wormswork™ Composite mix*

Flagellates	719
Amoebae	119,692
Ciliates	3,515



CONTACT PERSON: STEPHEN HOLMES
PHONE: (08) 8354 1088
FAX: (08) 8354 1077
MOBILE: 0419 822 912
E-MAIL: STEVE@WORMSWORK.COM.AU