Humus Compost plays role in creating soil structure

(Rhonda Daly from YLAD Living Soils in Young NSW addressed the Victorian Cherry Growers AGM Meeting in Wangaratta delivering a talk on the benefits of humified compost and extracted compost teas in production.)

Good orchard managers know that loose, crumbly soil structure helps produce high quality fruit. Compost is the single most indispensable input in ensuring good soil structure for fruit production as well as healthy root and plant development, soil biological activity, nutrient retention, erosion control and moisture management.

While in Australia recently, world-renowned composting and soil fertility consultant Edwin Blosser, president of Midwest Bio-Systems in Illinois, spoke about how low organic matter and humus in soil compromises soil characteristics that are vital to good fruit production, such as soil structure, beneficial micro-organism activity, and the ability to supply necessary nutrients to trees.

YLAD Living Soils produce compost using composting methods taught by Edwin J Blosser, known as the Advanced Composting System. A high quality humified compost can be produced with a controlled process where organic matter is broken down, with a combination of heat and microbial processes, and then microbially polymerised or built up into glues, gels, resins and humus that contains humic and fulvic acids.

SOIL STRUCTURE

Compost that is humified, in this way, has a powerful magnetic impact on particles of the soil, forcing soil particles to expand, creating a porous structure acting like a sponge, allowing both air and water to penetrate and allows aerobic microbes to breathe. The gummy, spongy texture of humus is essential to the formation of aggregates, and creating the crumb structure that establishes ideal conditions for biological activity.

These aggregates hold air in the pore spaces, and when one tills the soil mechanically it loosens the soil, however, when the orchard is irrigated or becomes too wet, the soil will return to a cement-like, tight structure. By using humified compost, the humus properties will keep soil particles apart, creating necessary soil structure for optimum growth, making high quality humified compost the glue that holds pieces of sustainable soil fertility together.

The power of attraction of humus to soil is about 300:1. This means humus is 300 times more powerful than soil at attracting other soil particles and storing nutrients. In dry times or drought these pore spaces also serve a critical role by enabling moisture in lower levels of the soil to wick up to plant roots through a mechanism known as capillary action.

Humus can hold four times its weight in water, increasing the soil's water holding capacity, increasing soil porosity, reducing runoff, slowing evaporation and decreasing mineral leaching.

NUTRIENT EXTRACTION VIA ROOTS

Above ground properties contributed by the atmosphere, moisture, trace elements and carbon dioxide provide more than 95 per cent of the total volume of growth in trees. The only way roots have the ability to unlock the potential of receiving these above ground properties is to actively have growing root tip at all times. A loose, crumbly soil structure enables root growth to be prolific, influenced by the level of soil life activity and nutrients in the soil.

On February 25, 26 & 27, YLAD Living Soils will hold an Advanced Composting System Workshop in Young where Edwin and his associates from MBS will instruct farmers and entrepreneurs on compost production and the use and value of introducing compost into management programs to improve soil and tree health.

Edwin has assisted many growers achieve positive results with a one-off application of 5 t per hectare of humified compost, solving problems in the soil such as high sodium levels in the soil.

MICROBIOLOGY
Humus contained in the compost provides the loosening of soil - a springboard allowing the proper diversity of microbial life to flourish, as well as it holds a large amount of solubilising agents produced by the microbes, improving nutrient availability.

The value of compost goes beyond improving soil structure and providing nutrients. Beneficial microbes provided by humified compost help the crop to defend itself against diseases by attaching themselves to the plant's roots, crowding out pathogenic microbes.

COMPOST TEA
Compost tea or Bio TX 500, sprayed directly on leaves, has also been found to prevent certain fungal diseases such as mildew, and suppress specific disease-causing organisms.

While application rates can vary, most growers apply compost at the rate of 1-5 tonnes a hectare in existing orchards, and an application of 5-10t/ha when preparing ground for new planting.

Additional minerals can be blended with humified compost, creating a custom blend determined by individual soil analysis, creating nutrient balance.

Soil testing and petiole analysis can pinpoint the nutritional needs of the soil and tree at any time in the growing season.

Applying compost can be either broadcast or banded to suit individual orchards. Ideal application times are:

* Autumn - post harvest, pre dormancy;
* Spring - before dormancy breaks;
* During fruit fill season

Other applications can be applied when the need for moisture holding capacity, disease control and higher yields with less inputs are needed.

Contact Details: Rhonda Daly - YLAD Living Compost Phone: 02 6382 2165