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## IGNORE SOIL ORGANIC MATTER AT YOUR PERIL

Although the soil is the foundation of every farming enterprise, many farmers have only a basic understanding of this important farming asset. As a result, there is often an ignorance of the impact and role of soil biology and organic matter on the way the soil functions.

Every soil contains both inorganic and organic material. The inorganic material is derived from the soil parent material and from fertiliser and other additions. The organic material results from the activities of living organisms - plants (roots, stems, leaves) and other creatures living in the soil (earthworms, insects, fungi, bacteria etc). Organic material also comprises the residue of such organisms after they die or have been eaten by other animals (dung etc).

**Why is organic matter important?** Organic matter performs a range of vital functions in the soil: it improves soil stability and structure; it increases soil water holding capacity and prevents the leaching of nutrients. It enhances the supply of essential plant nutrients, especially of nitrogen, phosphorus and sulphur plus trace elements like boron and copper. Organic matter is the primary food and energy source for soil micro-organisms and other soil animals, all of which release nutrients stored in the organic matter back into soil solution. Organic matter improves the cation exchange capacity of a soil and hence the soils ability to store and retain nutrients. Also, because it is a dark colour, organic material helps to absorb more of the sun's heat into soil. Thus, in numerous ways, organic matter is critical for a healthy, living and productive soil.

### **To ignore the soil organic matter is fool hardy!**

Because farming extracts significant amounts of nutrients from the soil, then obviously, if the farm is to be profitable, these nutrients must be replaced. To most people, this equates to the application of fertiliser.

It is well known that most nutrients enter a plant through its roots, but what is not so well known is that plant roots are assisted in nutrient uptake by soil organisms living within the soil. Take fungi as an example – a good soil contains vast kilometres of fungal threads weaved throughout the soil fabric. This network of fungal hyphae greatly assist the plant roots to locate, extract and uptake nutrients from the soil. In fact, without the presence of these beneficial fungi, plant growth would be severely impacted. Yet when a farmer considers his fertiliser requirements, how often does he think about the impact of fertiliser on the soil biology present in his soil and the organic matter resource? What use is it spending \$1000's on fertiliser if that same fertiliser might potentially harm or kill off the means by which the plant takes up those very same nutrients?

Good soil fertility will result when one views the soil more holistically. A soil is more than its inorganic components. The inorganic and organic components are both important and are both constantly changing and interacting. Therefore, to expect to make good soil fertility decisions whilst ignoring soil biology and organic matter is like skating on thin ice – you may be fine for a while but pretty soon you're likely to come a "gutsa."