

# **The One thing that will transform your farm - The Black Stuff**

**The Black Stuff is a Humate** an input for agriculture that increases of productivity and profitability. Humates are now an essential input for your soil health and farm profitability.

Humates, particularly natural organic sedge type humates, have been shown to be a highly productive agricultural input, and effective in the control of pathogens.

## **How Humates Work**

Humates provide similar benefits to humus in the soil. Humus is decomposed vegetative matter that naturally contains humic and fulvic acids (humates). Humates are a concentrated form of humus that condition soils by:

- Acting like a sponge to store water;
- Stimulate the beneficial mycorrhiza;
- Retain and provide nutrients (CEC);
- Inhibit plant pathogens;
- Increase the tolerance to heavy metals and toxins; &
- Binds soil particles into stable aggregates.

The Black Stuff is a naturally occurring humate that is high in humic and fulvic acids. Humates have a high nutrient retention and holding capacity (Cation Exchange Capacity CEC). Sandy low carbon soils have a CEC of 5 or less, meaning that fertilisers and nutrients will leach quickly. The addition of The Black Stuff greatly reduces leaching.

## **The Mycorrhiza**

The Black Stuff is a powerful stimulant of the beneficial fungi that build humus. Humate is an important part of the carbon cycle trapping a storing CO<sub>2</sub>. The Black Stuff retains moisture and nutrients reducing the need for irrigation and fertilisers. Mycorrhiza form symbiotic relationships with plant roots that enable nutrient uptake. Humates greatly increase the size and reach of the mycorrhiza. Perversely the over-application of nutrients in humate poor soils acts like an initial sugar hit with higher and higher applications needed to maintain yields. The sugar hits over time stress plants and expose them to pathogens and mutations.

The Black Stuff contains another important humate, fulvic acid. Fulvic acid is a powerful bacterial stimulant that reduces phosphate and nitrogen applications by stimulating the bacteria that make phosphate and nitrogen naturally available.

## **Urea & Phosphate**

When The Black Stuff is combined with urea, a urea humate is formed. This super charges the urea reducing leaching and evaporation. The urea is also made more available to plants through the process of plant sensitisation.

By combining The Black Stuff and phosphates, a phosphate humate is formed. Phosphate lockup is reduced, and plant sensitisation makes more phosphate plant available with beneficial crop results.

### **Not all Humates are Equal**

The majority of humates on the market are manufactured from ground up brown coals (lignites). A sub-set of these brown coals is Leonardite that is an oxidised form of lignite. The humates in lignites are locked up and are made available through a toxic chemical alkaline extraction process.

The production process requires the lignite to be ground, oxidised, treated under high pressure and temperature with an alkali such as potassium hydroxide, extracted, filtered, and dried. The end product is potassium humate soluble flakes or crystals.

This type of humate is typically sold as a liquid applied by fertigation systems.

Small but regular applications are needed as the product lacks persistency.

The humate availability forms a critical element of a successful lignite extraction process. While many of these lignite-based products claim very high percentage humic and fulvic acids, the critical element is the availability of these humates. The humates often remain locked up in the end product so that heavy and regular applications are needed to achieve the desired results.

The Black Stuff is a natural organic humate taken from a source on the Cairns Highlands. It is screened, dried and packed. It is 100% natural and importantly is 100% available. No chemical processing is applied to The Black Stuff.

The Black Stuff is not water soluble. This means it will not be leached or breakdown. The natural humins in The Black Stuff are resistant to breaking down. The Black Stuff works for at least 5 years. On a simple cost benefit analysis, The Black Stuff is far superior to other humate products.

### **Using The Black Stuff**

- 1) The Black Stuff is a natural organic combination of humic and fulvic acids. It works well on turf, pastures, crops, and horticulture.
- 2) Application rates will vary depending upon micro-climates, specific soils, and the plants. Do test areas to determine the optimum applications for your circumstances.
- 3) Generally, the optimum application rate in trials has been found to be 3 m<sup>3</sup>/H. Use can be extended by applying to crop mounds only.
- 4) The Black Stuff will settle and is hygroscopic. Belt spreading has been found to be the best application method.

5) Trials have shown that The Black Stuff strengthens plants to be resistant to pathogens. Stronger and more disease resistant plants with a healthy biome are the result of using The Black Stuff.

### **In Conclusion**

The science and facts are in.

The Black Stuff

- increases the CEC of soils,
- improves soil structure,
- improves the performance of urea and phosphates,
- stimulates beneficial microflora and bacteria &
- increases soil water holding capacity.

Ref: “Humic, Fulvic and Microbial Balance: Organic Soil Conditioning”, Prof William Jackson 1995