Ritlee
Chip-Shave-Cut-Recycle

Ritlee Xecutech Sales & Services (Pty) Ltd
Suppliers of Wood Chippers, Wood Shavers, Compost Turners, Recycling,Forestry & Sawmill Equipment,
Lawnmowers and Related Items Industrial & Domestic.

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Kraal Manure--Massive benefits if you compost it before applying to your lands or trees!

What are we trying to achieve?

Soils require HUMUS and not just organic matter

- 1 Ton of well composted raw manure is equivalent to approximately 7 tons of uncomposted raw manure (Organic Matter)
- Raw manure in average is spread at 40 tons per H/A whereas **composted manure** which is manny times more benefitial is easily spread with lime spreader at some 7 tons per H/A
- Correctly composted organic matter is a stable, aerobic, microbial, eco-friendly and well balanced nutrient source



Common problems of raw manure:

ⓘ Present	In raw manure you find -- Salmonella, Pitium, E-Coli etc --- These are NOT killed in the rumen
ⓘ Seed Bank	This can be high due to lack of control of thermal processes
ⓘ Toxins	from Leachate --this is detrimental to the health of the soil and obviously detrimental to the plants that grow in this soil
ⓘ Imbalance	Due to the imbalance state of raw manure, Tests have shown losses of up to 65%N, 75%P and 50%K
ⓘ Mineralisation	Generally very high (organism produces an inorganic substance)

The nitrogen in manure is not all available to growing plants as it is tied up in organic forms. Organic nitrogen becomes available to plants when soil microorganisms decompose organic compounds, such as proteins, and then convert the released N to NH4. This process is known as mineralization.

ⓘ Flies — These are attracted to the anaerobic stench

Humus (Compost) has finished its mineralization. --Thus:

- ☑ Moisture holding capacity increases (1% organic matter in soil increases water holding capacity by up to 170,000 litres per Ha) (80 to 90% of its composted weight)
- ☑ Leaching of nutrients is minimized and fertility storage maximized -- in this stored form easily available for plant uptake!)
- ☑ While these nutrient cations are accessible to plants, they are held in the soil safe from being leached by rain or irrigation.
- ☑ Disease supressing microbes (Actinomycetes etc) abound in humus (Aerobic verses Anaerobic processes)
- ☑ Aeration improves, nutrient storage capacity increases , soil compaction decreases as soil structure improves.
- ☑ Plant deseases decrease--- manny diseases are assosciated with anaerobic conditions
- ☑ Humus is a colloidal substance, and increases the soil's attraction exchange capacity, hence its ability to store nutrients by binding.
- ☑ The biochemical structure of humus enables it to moderate – or buffer – excessive acid or alkaline soil conditions.
- ☑ Soil ph becomes more neutral--- Good compost has ph of +/- 7

Humus or Compost is very easy to spread in fields simply with lime spreader without any wastage-- All clumpy material has been broken up with the compost turner. --- Also:

- ☑ Amongst other improvements, It Highly Improves the quality of fodder and has proved to be more nutritius in high humus soils.
- ☑ During the humification process, microbes secrete sticky gum-like mucilages; these contribute to the crumb structure (tilth) of the soil by holding particles together, and allowing greater aeration of the soil.
- ☑ Toxic substances such as heavy metals, as well as excess nutrients, can be chelated (that is, bound to the complex organic molecules of humus) and so prevented from entering the wider ecosystem.

What is composting?

- ➔ Despite some losses, composting does retain most of the nutrients provided by the raw material, and stores them as stable organic compounds
- ➔ During the composting process, micro-organisms (Aerobic) convert raw organic materials into a stable, humus-like product. Also during this time and process, while they have food-(Raw organic material.), they really multiply to literally billions --- Ideal to get these guys into your lands!!!

NB.> I have come across a number of farmers who do not manage the moisture content! -- Please like you, microbes also need moisture!-- Ideal some 60%

NB.> Management of Temperature, Moisture content, Intraducing Fresh air (Oxygen) , Expelling of CO2 and stale air, expelling high temperatures etc-- is all very important!-- All done with compost turner!

- ➔ Composting is the aerobic (meaning it requires oxygen) decomposition of organic matter that begins with a diverse mixture of organic material
- ➔ During the process, nitrogen is lost to the atmosphere as ammonia (NH3). In addition, the greenhouse gases carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O) are emitted.
- ➔ Compost's real agronomic value lies in the gradual release of nutrients that are slowly converted from stable organic compounds into available inorganic nutrients, and in its properties as a soil amendment.
- ➔ **Turning Compost:-** The amount of times compost needs to be turned is regulated by TEMPERATURE. When temperature up to some 70deg it needs turning which will bring down temperature, expel the CO2 and unwanted gasses, distribute the microbes more regularly, distribute the moisture, break up all anerobic clusters etc. (In average depending on content of row!-- 1st 2 weeks 3 times, next 2 weeks, 2 times, next 2 weeks 1 time-- until temperature stabilises and humus / compost ready to apply!)
- ➔ Composting is a biological process that involves the aerobic decomposition of organic matter to produce a humus-like product called compost. During the composting process, heat, various gases and water vapour are released, greatly reducing the volume and mass of the pile.