The future of fertilisers and waste recycling
- why composting for soil type is so critical for farmers

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Current challenges facing dairy producers

Over the last few years there has been a steady movement towards biological dairy farming practices like use of manures, composting and remineralisation. Producers have begun to realise that what we have been told about only needing nitrogen is not the complete picture. The wheels have begun to fall off the cart and of particular concern to most is the decline in soil structure and herd health.

Some of the challenges faced by dairy producers include;

1. Skyrocketing costs of production - both fertilisers and brought in feed
2. Soils are becoming compacted - increased runoff and less utilisation of rainfall and irrigation water
3. Pastures are not very palatable to stock - leading to reduced feed utilisation
4. There is a strong dependance on brought in feeds
5. Irrigation efficiency is low and expensive with increased electricity prices
6. Herd health is declining and vet bills keep souring
7. Researchers, consultants and industry don't fully understand that all of these issues are related to declining soil health

The following article is not about pointing the finger but getting you the dairy producer to "wake up and smell the coffee". Composting is one of many ancient farming practices that has been used for around 3000 years. Its role in improving the profitability of your business cannot be underestimated. It is not about throwing out the new and returning to a horse and cart. It is about learning to work with nature and forget about trying to control her.

What to do with your unwanted wastes and local resources

Have you ever considered the value of that waste material around the farm? Most of us ignore these piles until either they get too big or cashflow has forced us to look at alternatives. This is what happened in 2008 following the huge hike in oil and fertiliser prices. Farmers began searching for alternatives, recycling perceived waste and using local resources. It was the beginning of large scale on-farm composting and the germination of common sense.

Some of the local resources that can be utilised for on-farm composting include;

1. Stockpiled cow manure
2. Brought in chicken and pig manures
3. Spoilt silage or hay
4. Spoilt feed
5. Separated effluent solids
6. Liquid effluents and washdowns

Why produce quality compost?

It's really a "no brainer" why dairy producers should be getting into composting and recycling of what are perceived waste products. Some of the benefits of producing quality compost include;

1. The valuable humic and fulvic fractions produced in quality compost increases water use efficiency by up to 50% making your pastures and crops require less water. Humus holds up to 20 times its weight in water and acts like a sponge.
2. By building this soil humus, the Cation Exchange Capacity (CEC) of soils can be increased by up to 70%. The CEC of a soil is a measure of the total amount of nutrients held in the soil. This means that with the addition of quality compost, the soil can hold more nutrients and make these available to plants. As plant stress is primarily driven by nutrient and water availability, points 1 and 2 are essential for financial success.
3. Major reduction in weeds - weed seed doesn't live through a composting process
4. Applied fertilisers and minerals are made more bio-available when applied with quality compost. This results in less leaching of nutrients and improved financial outcomes. Reductions in your fertiliser bill of up to 25-33% is not uncommon.
5. The soil becomes more friable leading to reductions in fuel by up to 25%. One example was a farmer who increased the speed of rippling his paddock with a Yeomans from 4km/hr to 8km/hr. This was due to the softening of the soil.
6. There is an observed even production in pasture growth. There are less variations across the paddock on the same soil type.
7. Increased Metabilisable Energy (ME) of pastures and improved utilisation of home grown feed. This means less brought in feed.
8. There is little to no environmental or off farm effect in stark contrast to water soluble fertilisers.

The key thing to remember with these benefits is that they don't happen overnight but rather build upon each application.

Matching quality compost production and soil nutrition to soil type

Every farmer knows that each soil type across the property produces different pasture and feed quality. And yet, over the last 50 years the advice to farmers has always been the same - focus on nitrogen and profitability will increase. This panacea has resulted in a number of problems best summed up as an incremental decline in soil and herd health. The old adage of "You are what you eat" also applies to your herd as well. The financial implications of these detrimental changes are well documented not to mention the stress that follows. In order to maximise production, on-farm composting and applied soil nutrition is matched to your local soils types. This is because each soil type has unique chemical and physical properties that need to be taken into account. It is all about reintroducing to the farm broken down organic matter or soil humus. As quoted on page 70 of The Farmers Handbook, Department of Agriculture, NSW, 3rd Edition, 1919

"Humus, which is derived from the gradual decay of animal or vegetable matter within the soil, is one of the most important of the soil's constituents, and any great variation in its amount effects profoundly the value of the soil for agricultural purposes".

The immediate benefits of implementing these composts is that every farmer has a recipe that is specific to each soil type. It saves the producer a small fortune because they no longer need to refer to an agronomist for professional advice nor are they totally dependent on expensive water soluble fertilisers. Fine tuning of this process through periodic soil tests ensures the plants reach their true genetic potential.

Choosing the right equipment to compost

There are many compost turners on the market but very few can claim to be truly Australian built and designed for extreme conditions. Like the Yeomans plow, the JPH Equipment CT Series Compost Turners are unique and an essential addition to every dairy farm. If you are serious about reducing your costs of production and converting valuable recyclables into fertiliser consider the following salient points;

1. The CT Series has a unique patent pending drum design. It is ideal for making compost, mixing blends, fertilisers and different waste streams.
2. The watering system is more uniform so that the compost is ready in 21-28 days, not the traditional 5 months. This makes quality compost production an economic option.
3. This strongly built Australian machine with real Australian steel is heavy duty handling the rigors of daily farm life.
4. Has a PTO safety clutch for protection of the drive system.

JPH Equipment offers a complete solution to reducing on-farm fertiliser costs. It's not just about selling a piece of machinery but providing to you all the practical expertise in how to continually produce an excellent product. This unique process gives you quality compost from the beginning.

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