APRIL 2022

Dear Readers,

In this month's newsletter:

-Trials of biocontrol agents for black dot on potatoes.
-Bacterial & Fungal Genome Sequencing at the University of Queensland.
-Nutrient leaching trials at Mount Lofty Botanic Garden.
-The Sea & Vines making the perfect combination.
-Strawberry growing with Harvest the Fleurieu in Mount Compass.

Our team are actively seeking the collection of soil samples from growers of a wide range of crops and production methods across Australia for our R&D department. If you would be interested in providing a sample, please use the contact links at the base of this email.

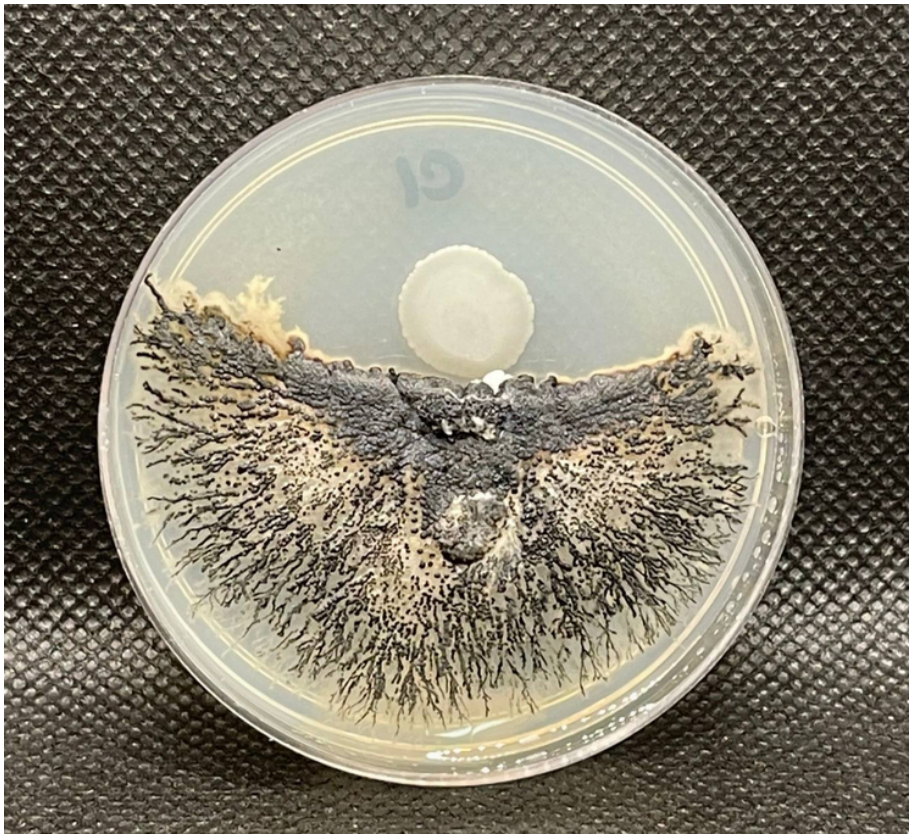
Kind Regards,
The Neutrog Team

Biocontrol Agents in Black Dot Trials on Potatoes

The R&D team at Neutrog have spent a number of years examining and screening soils from around Australia seeking microbes capable of increasing nutrient use efficiency, plant health and disease suppression. In particular, the ability to supress diseases using biocontrol agents has been a major focus of our work.

During our screening process we have found over 50 different isolates capable of reducing or in many cases completely supressing the growth of numerous fungal pathogens including Fusarium oxysprum, Rhizoctonia solani, Sclerotinia sclerotiorum and Collectrichum coccodes amongst others as well supressing the growth of oomycetes pathogens such as Pythium and Phytophthora.

Our latest commercial product (Popul8) currently undergoing trials in conjunction with Elders contains 8 of the most effective and broad ranging biocontrol agents according to our laboratory tests. An example of the laboratory test is seen in the picture below, where a very clear zone of growth inhibition against the pathogen Colletotrichum coccodes is seen for isolate C1 but not C2 (overgrown by the pathogen).



In amongst the black fungus, you can almost see the second bacteria isolate which is having no impact on the fungus at all. Interestingly C2 does show some level of inhibition against another fungal pathogen namely Rhizoctonia, which clearly shows that there are no single isolates capable of attacking and inhibiting all fungal pathogens.

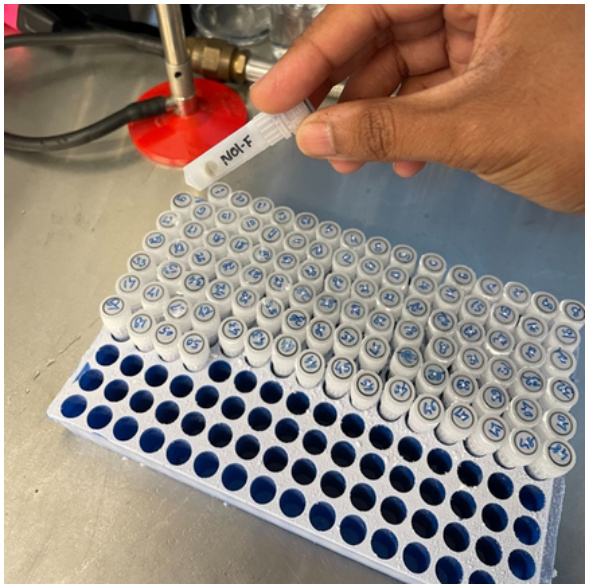
At Neutrog we have a philosophy that using diverse inhibitors gives the best chance of success. These types of results in laboratory testing are not unusual, so the real the question is how does this translate into the field?

We thus decided to use the knowledge we gained in the laboratory to carry out some recent field trials to examine the ability of biocontrol agents to suppress a disease in potatoes known as Black Dot caused by Collectrichum coccodes.

This trial encompassed an area of 85 hectares over five sites and a single application of our diseases suppressing microbes resulted in showed a reduction in disease burden. The amount of black dot as determined by PREDICTA-Pt peel test was reduced in the order of 3 to 4-fold. This resulted in a 19% increase in marketable yield of premium grade potatoes.

As we continue to conduct more tests, each of the beneficial bacteria and fungi that are identified are being stored at Neutrog. They will be used now and in the future as we continue to produce the most advanced biological products in the market.

Bacterial and Fungal Genome Sequencing with the University of Queensland



The Neutrog R&D team have been busy 'packing' in the laboratory, preparing bacterial and fungal isolates to send to The Australian Centre for Ecogenomics (ACE) at the University of Queensland for genome sequencing.

By obtaining a complete genome sequence for these organisms, we can take a deeper look into the genetic makeup and identify genes that have beneficial functions that we can use in our products, such as the ability to produce plant hormones.

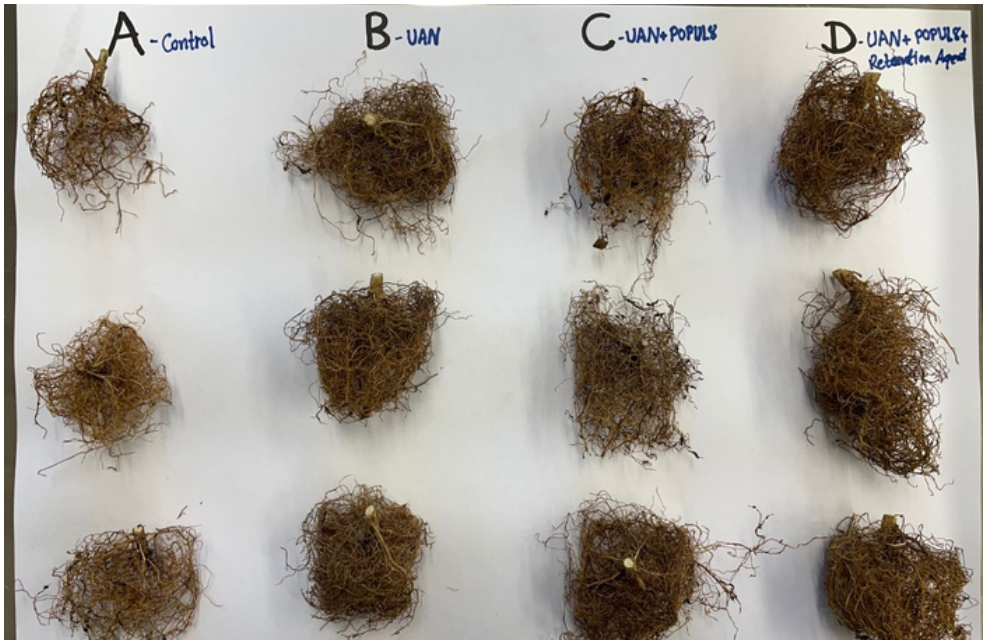
It also allows us to identify the exact species of bacteria and fungi that we have, which opens doors for the exportation of our biological products to international markets.

The process taken is similar to the sequencing of human genomes, the difference being that our genomes are much more complex compared to bacteria or fungi.

To get the complete genome sequence the bacteria and fungi are first grown in culture. The DNA is then extracted and chopped into small fragments – much like cutting a book into individual pages, allowing us to read one page at a time – and are placed in a machine to record the sequence. These 'pages' are then reassembled into a whole book (or in our case, a genome) that contains all of the genetic information for these organisms.

The process will take approximately 8 to 10 weeks to complete, but once completed holds numerous potential benefits for both home gardeners and commercial growers.

Nutrient Leaching Trials at the Mount Lofty Botanic Garden



Our R&D team have multiple trials running at any one time both in the lab environment and out in the field.

A nutirent leaching trial has been ongoing at the Mount Lofty Botanic Garden over the last few months and while the results have not been completed, these root ball and foliage samples have now been collected and are being collated and recorded in the lab.

In our trial we are seeking to determine if urea/ammonium nitrate (UAN) combined with a new Neutrog product in development called POPUL8 can increase plant growth and development while and also influencing/reducing nutrient leaching.

This research holds numerous benefits for commercial growers. By accelerating plant growth and reducing nutrient leaching we can improve agricultural processes and increase yields and hopefully gain greater insights into how we can encourage plants to take up a greater amount of nutrients as opposed to allowing them to leach into the soil and run off.

Compost Testing Processes at Neutrog

Product development can come in many forms. Sometimes from a specific identified need, other times from a discovery in our R&D lab and, in the case of Seamungus, an event occurs that presents an opportunity that spurs a new product into life.

In April 1996, in Boston Bay, South Australia, organic wastes and nutrients from the caged tuna farms contributed to a phytoplankton bloom. This large-scale bloom - or "Red Tide" reduced oxygen levels and caused extensive gill damage to the tuna. This bloom, together with weather events that stirred up the waste, resulted in 75% of the tuna stock being killed.

As a result of this catastrophic event for the then $90 million dollar tuna industry based in the area, the Port Lincoln council set up a process to compost the tuna with the aid of Flinders University and the late Dr Nick McLure. Neutrog sourced and utilised some of this tuna compost and combined it with poultry manure, humates, seagrass and kelp to produce a product to be known as Seamungus.

The combination of ingredients created a product that delivered a diverse range of nutrients with numerous natural growth stimulants. Stimulants that encouraged growth both above and below the ground. Following product development and testing, the first batches of Seamungus were produced in the early 2000's and it has since become one of our most widely used products in both home garden and commercial applications.

Seamungus will hold up to 70% of its own weight in moisture - significantly increasing your soils ability to retain water and nutrients. Fantastic for managing frost and heat stress while assisting to unlock other fertiliser inputs such as Calcium and Potassium.

Seamungus is available as both pellets and liquid.

Seamungus is compatible with Post Em Products, however, Neutrog recommends that a jar test be done prior to tank mixing to ensure no compatibility issues.

APPLICATION RATE GUIDE:

POST HARVEST	MAY / JUNE	SEPT / OCT	AT BUD BURST
Seamungus Liquid at 5lts per HA applied through fertigation.	Seamungus Pellets at 1 tonne per HA broadcast under vines.	Seamungus Liquid at 5lts per HA applied through fertigation.	5lts per HA can be used as a folia fertiliser.

Strawberry growing with Harvest the Fleurieu in Mount Compass

At the end of 2021, data indicated that when it comes to berries Australians are most fond of blueberries and of course, the humble strawberry. With plenty of 'pick your own' strawberry patches around Australia, consumers can pick quality fresh produce straight from the crop. Harvest the Fleurieu have tended to this desire with a family owned tourism hub and strawberry growing operation based in Mount Compass, South Australia.

Harvest the Fleurieu belongs to the Sherry family who started their farming journey on a family property in Blewitt Springs originally purchased by Stanley Sherry after the second world war. His son, Brenton, started working the land as soon as he could hold a pair of snips in his hands before studying at Roseworthy College where he discovered his passion for agriculture and business.

Since 1987, Brenton and his wife Vanessa have been growing strawberries and selling the produce to local shops and markets. They quickly developed a reputation for growing high quality produce, increasing demand and enabling them to expand their operation. 65HA of land at Kuitpo was puchased, an expansion which allowed them to accomodate interstate markets.

Vanessa and Brenton continue to pour their heart and soul into the Harvest the Fleurieu operation but are slowly handing over the reins to the next generation Adam, Megan & Ryan. Growing up in and around the strawberry patch, the siblings are staying true to their strawberry roots but also diversifying to ensure the future of this small family business, with 'quality over quantity ' as their family motto.

Harvest the Fleurieu rely on well-structured soils high in beneficial microbiology and crop rotation to achieve highly productive crops to satisfy the popular 'pick your own' market and to continue to provide a high standard of produce for their on site market shop.

Megan Sherry says "We put a lot of care & planning into the way we operate and a critical part of that is care of the soil. To that end, we had Neutrog make up a special custom blend for us, based on their Rapid Raiser. Growing a high-quality strawberry product is something which we are all extremely proud of and the use of a premium biological fertiliser is a critical part of what we do".

Ryan Sherry is the Farm Manager at Harvest the Fleurieu, and he noted:

"Rapid Raiser has been huge for the patch at Mount Compass - the new plants seem to be fruiting earlier, which is great because the earlier we can get customers into the patch and picking the fruit the better."

For more information about Neutrog products, please contact our team.

Neutrog products are also suitable for the home garden, and you can find out more by signing up to receive our monthly retail newsletter for stories from gardening experts, product profiles and seasonal fertilising guides for home gardens.

If you would like to receive this newsletter, please email marketing@neutrog.com.au

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