

POPUL8™

POPUL8™ is an Advanced Soil Biological Formula developed and manufactured by Neutrog,

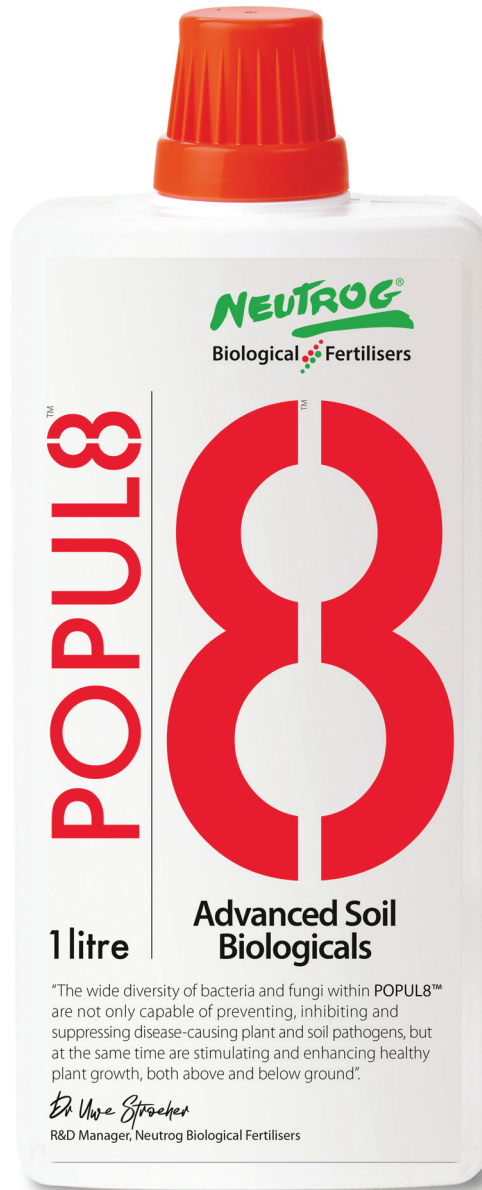
POPUL8™ is designed to not only enhance plant growth and nutrient cycling but to also populate and occupy the biological space in the soil and on plant roots which may otherwise be an available space for plant pathogens to inhabit...Hence its name **POPUL8™**

POPUL8™ contains a diverse base microbiome of some 200+ bacteria and fungi, plus a further 40 specifically selected bacteria and fungi have been identified, isolated and added for their specific purpose and beneficial characteristics.

"The wide diversity of bacteria and fungi within **POPUL8™** are not only capable of preventing, inhibiting and suppressing disease-causing plant and soil pathogens, but at the same time are stimulating and enhancing healthy plant growth, both above and below ground".

Dr Uwe Strocher

R&D Manager,
Neutrog Biological Fertilisers



NEUTROG®
Biological Fertilisers

The high number and wide diversity of specific purpose bacteria and fungi (microbes) have been added to maximize the range of functions the biologicals within POPUL8™ are capable of performing, including:

- 1 **Nutrient Liberation** of nutrients such as Phosphorus, Potassium and Calcium from adding microbes such as **Bacillus, Penicillium and Serratia**
- 2 **Plant Pathogen Inhibition and Suppression** (of pathogens such as Fusarium, Rhizoctonia and Phytophthora) through the addition of microbes such as **Penicillium and Trichoderma**
- 3 **Plant Growth Hormones** such as auxins and gibberellins from adding microbes such as **Pseudomonas**
- 4 **Nitrogen Fixing** from adding microbes such as **Azotobacter** (which can fix up to 40kg of nitrogen per hectare per year)
- 5 **Nutrient Cycling**, mainly from its diverse base of 200+ microbes, mostly known for their ability to breakdown organic compounds
- 6 **Bio-Stimulation** from proteins, vitamins, amino acids, mirco-nutrients, cellulouse, fulvic and humic acids extracted from kelp, fish and leonardite

APPLICATION

Dilute 1 capful (40ml) of POPUL8™ per 10 litres of water. 10 litres will treat up to 8m² of soil. Apply during a time of low UV or prior to a rain event if possible (UV and extreme hot and dry conditions will kill many of the microbes). Water in after application if possible (not required when applying via fertigation).

USE & STORAGE

Store in a cool place away from direct sunlight. Do not mix with fungicides or other bactericides. As this mixture contains natural products it will naturally contain a variety of living micro-organisms. Avoid inhalation of spray mist and wash hands after use. Use diluted POPUL8™ within one (1) week of dilution.



THIS IS JUST THE BEGINNING

The 40 specific bacteria and fungi added to formulate the current **POPUL8™** product have been selected from a collection of some 500+ specific function bacteria and fungi that Neutro's R&D team, headed by Dr Uwe Stroehrer, have extracted from a vast number of soil samples from around Australia.

It is Neutro's core philosophy that it is not just about finding and including a single bacteria or fungi that is the best performer of a specific function, but rather to gather a diversity of those microbes that best carry out the specific function in a variety of soil conditions. This approach provides the optimum opportunity for the microbes in **POPUL8™** to proliferate and perform, no matter what the geographical area or soil conditions.

Hence as new specific function microbes are discovered, they will be assessed against those existing within **POPUL8™** and if they are either better performers or from a wider variety of soil conditions, they will either become an additional microbe or they will replace an existing one.

Furthermore, as our research expands, there is significant potential to expand the functionality of **POPUL8™** to include microbes that increase Abiotic (Drought) stress tolerance and others that will reduce, if not remove, salinity stress.

TABLE8

If you are wondering about the origins of our **TABLE8** range - Dr Uwe often uses the analogy that if you are having a dinner party and all the seats are taken that there is no room for gate crashers to sit - in a similar manner if all the available biological space is taken up by good bacteria, there is no place for pathogenic bacteria to inhabit...hence **TABLE8**.

There are already a number of other biological products under development which will be released under the **TABLE8** banner - these include **BIOVAX8**, specifically including a diverse range of microbes known for their ability to inhibit and suppress pathogenic bacteria. Plus **LIBER8** specifically including a diverse range of microbes known for their ability to liberate nutrients.





PROF

NEUTROG[®]
Biological Fertilisers

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ABOUT DR UWE STROEHER

Dr Uwe Stroehler graduated from the University of Adelaide in 1993 with a Ph.D in Microbiology, where he remained for a further six years working as a research scientist on aspects of cholera. In 1998 he was awarded the prestigious Alexander von Humboldt Research Fellowship and subsequently spent over two years working in Tuebingen, Germany.

On his return to the University of Adelaide in 2001, he worked on *Streptococcus pneumoniae* for eight years before moving to the Hepatitis Research Laboratory.

In 2010 Dr Stroehler, moved to Flinders University to work on the super bug, *Acinetobacter baumannii* which can cause pneumonia and meningitis. Whilst at Flinders University he also worked on the use of clean technology to enhance chemical compounds.

During his research career Dr Stroehler published over 40 peer reviewed journal articles and two book chapters.

Over the last 25 years Dr Stroehler has had a keen interest in soil microbiology and in bioremediation and hence when he was approached by Neutrog some 17 years ago he jumped at the chance to consult to the company in the development of GOGO Juice and then Litterbugs (to be marketed and sold under the product name **LITTERM8**) - an ammonia liberating biological for use in commercial animal bedding (chooks, pigs etc) and with some domestic application in cat litters.

Six years ago, Dr Stroehler joined Neutrog full time to head up its R&D program.

