



PERMA[™]
GREEN

Nutrient management system

FAQ'S

PERMAGREEN[™] NITROGEN MANAGEMENT SYSTEM FOR MAIZE CROPS

IMPROVE nitrogen efficiency - reduce losses

IMPROVE profit/Ha

INCREASE soil productivity

REDUCE crop stress during drought

RETAIN more nutrient



WHAT IS PERMAGREEN™?

PERMAGREEN™ is a **BPM** natural zeolite based core into which urea is 'loaded'. The urea is held within the structure of the zeolite crystal and released slowly once in the soil.

How does PERMAGREEN™ work?

The zeolite crystal provides the perfect 'home' for the efficient delivery of nitrogen into a soil root zone. Scientific papers show the attraction of the urease enzyme to the negatively charged zeolite crystal. As the loaded urea emerges from the crystal it is met by urease enzymes which break down the urea into ammonia/ammonium.

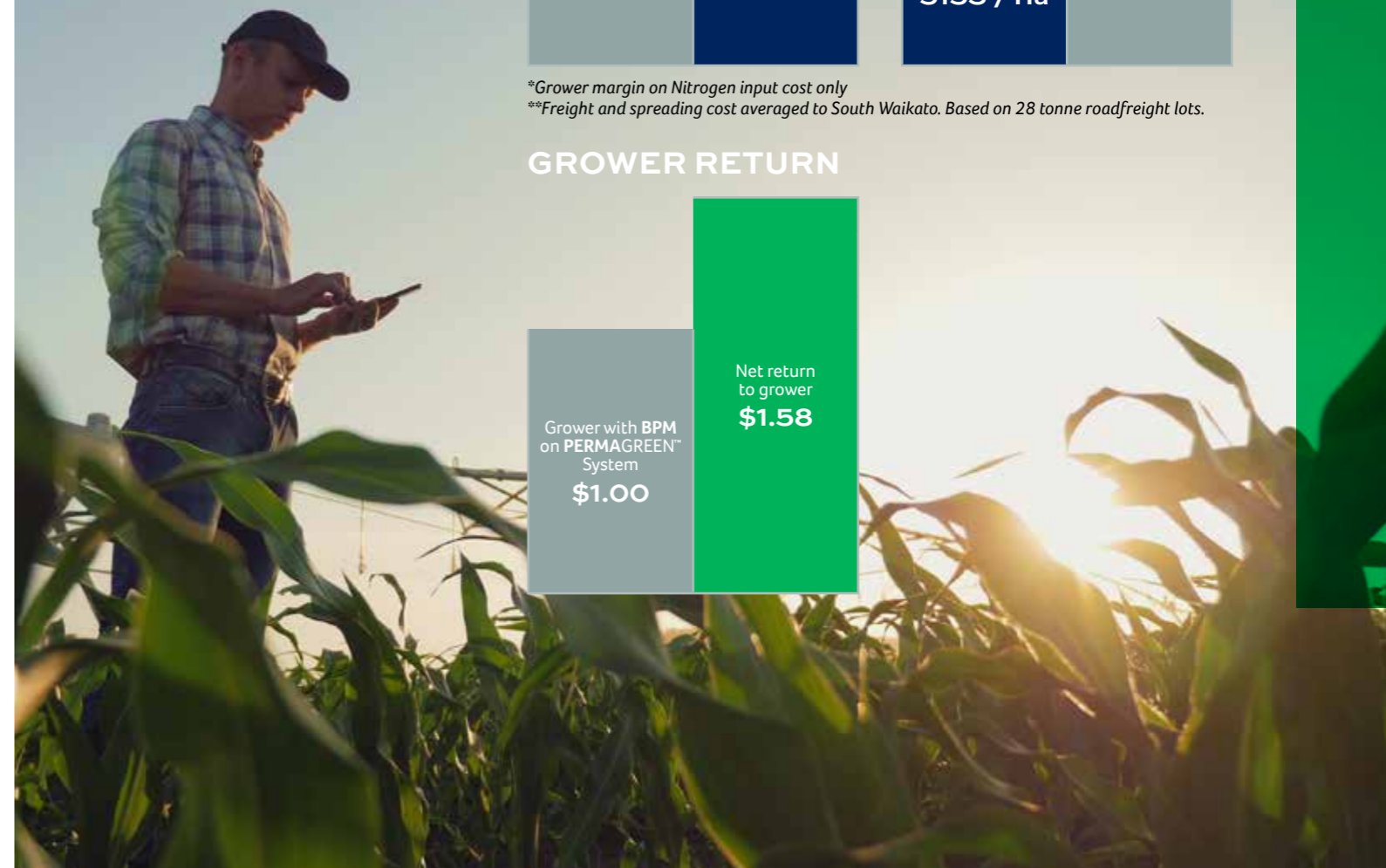
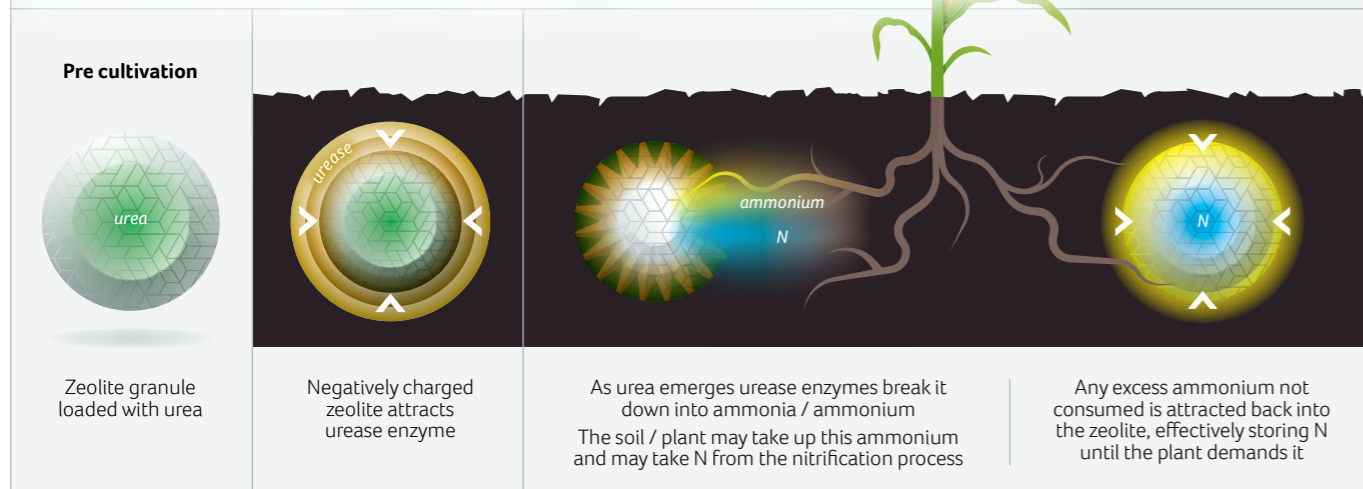
The soil/plant may take up some of this ammonium and also take up N in the form of nitrate following the nitrification process. Any excess ammonium not consumed will be attracted back into the zeolite crystal by ion exchange. This effectively stores the nitrogen until the plant demands/requires it - providing a natural delayed release mechanism for nitrogen.



Does PERMAGREEN™ improve my soil?

YES. The zeolite component of PERMAGREEN™ will remain in the root zone indefinitely. The nitrogen efficiency mechanism does not disappear or leach away. Therefore a steady build up of zeolite across many seasons will also steadily build up the capital value of the soil profile.

PERMAGREEN™ PG250 - MODE OF ACTION



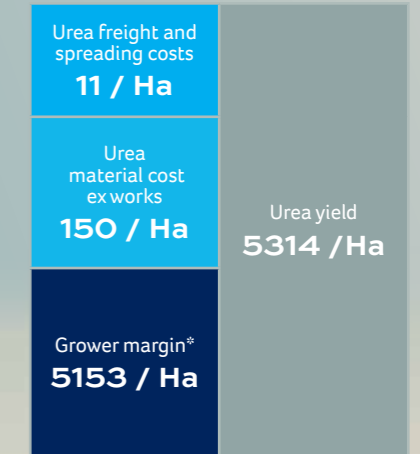
Does PERMAGREEN™ provide a commercial return to a grower

YES. Trials across 6 commercial plots average a return to the grower of \$1.58 for every \$1 spent on the PERMAGREEN™ system (includes averaged applicable freight and spreading costs).

PERMAGREEN™ 250



UREA 250



*Grower margin on Nitrogen input cost only

**Freight and spreading cost averaged to South Waikato. Based on 28 tonne roadfreight lots.

GROWER RETURN



Does PERMAGREEN™ have any environmental impact on my farm?

YES - and all positive. The mechanism used to deliver the improved crop yield is also proportionally reducing the relative losses of nitrogen that would normally occur through the nitrogen cycle. The retention and slow release of urea into the soil, combined with the relative proximity of the urease reaction to the zeolite crystal, means that the excess ammonium produced will be retained by ion exchange with in the zeolite crystal - thereby minimising both volatile gases and leachable nitrates.

The PERMAGREEN™ affect on the nitrogen cycle minimises excess nitrate leaching from the soil, reducing losses to both air and water.

Does using the **PERMAGREEN™** system add any complexity to my maize planting or management?

NO. Simply order your **PERMAGREEN™** by calling **BPM** directly on 0800 678 444. **PERMAGREEN™** will be delivered in loose bulk form to your farm or preferred spreading company. *(The increased cost of freight and spreading has been calculated into the grower return numbers.)*

PERMAGREEN™ will handle adequately well through standard moving-floor spreaders. *(Note - we have not tested through aerial drop systems. Do not use in static floor spreaders.)*

PG250 RATE = 50 kgs of urea per 1 tonne zeolite (250 kgs urea per Ha)

Does **PERMAGREEN™** assist with moisture retention in soil?

YES. The open structure of the zeolite allows absorption of excess moisture in the soil retaining it for drier soil conditions. Scientific trials have proven that with **BPM** zeolite incorporated into the root zone, crops are less stressed under drought conditions.



How do I buy
PERMAGREEN™?

**CALL US ON
0800 678 444
& PRE-ORDER
FOR THE SEASON**

We will ensure your order is available for pick up - or alternatively we can provide a delivery to your preferred destination. Call one of our friendly reps for further advice.



**Blue Pacific
MINERALS**

P 0800 678 444
W bpmnz.co.nz