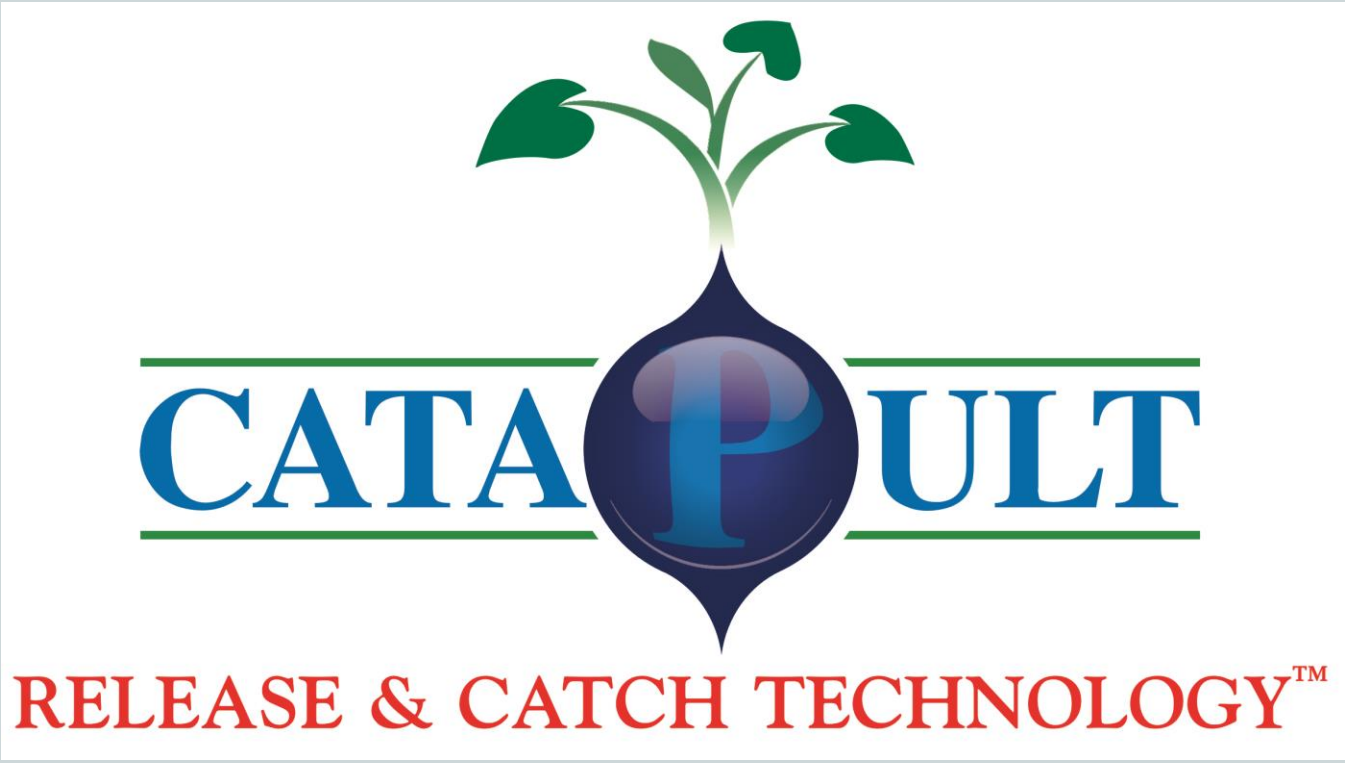

Increase profits in Winter Cereals and Pastures

Reduce P fertiliser costs

Improve crop P status

Access bound P in soil banks

Increase yields

Increase profitability

Increase drought tolerance

What is CataPult[R]?

CataPult Power Inoculum is a high grade crop inoculum containing VAM plus 2 species of *Bacillus* microbes to increase cereal yields and pasture productivity.

The **P solubilising *Bacillus* species** in **CataPult[R]** colonise the roots and the soil near the roots and **solubilise P that is unavailable because it is bound.** Many soils have large amounts of P accumulated but unavailable. CataPult[R] can **release** some of this bound P for crop growth. That's the RELEASE part of the technology.

VAM (Vesicular Arbuscular Mycorrhizae) colonise the roots and send out a large network of hyphae (filaments) that extend out well beyond the root hair zone. These hyphae collect **P and N plus Ca, Mg, Zn** and other micronutrients and deliver them back into the plant. They also help finding water in dry seasons. That's the CATCH part of the technology

As well as solubilising bound soil P, the *Bacillus* species drive very strong root growth soon after germination and into early crop growth (see later pages). This improves nutrient and water capture and helps crops cope with early crop water stress. Improved water capture in an early dry spell avoids growth checks that can limit later yield potential.

The VAM and *Bacillus* both stimulate nodulation in legumes and pasture legumes benefit strongly from CataPult application.

CataPult[R] RELEASE & CATCH TECHNOLOGY

CATAPULT
RELEASE & CATCH TECHNOLOGY™

The combination of phosphorous RELEASE & CATCH TECHNOLOGY microbe and VAM species in easy to use powder inoculant format makes CataPult[R] a must have products for serious cereal growers and pastoral producers.

How to use CataPult^{R}

CataPult^{R} is supplied as a powder for liquid applications.

CataPult^{R} should be applied to **cereals** at planting or soon after because good P nutrition is critical in early crop development to maximise yield potential.

- Apply CataPult at planting via liquid injection or centre pivot
- Apply CataPult after emergence via any fertigation system (centre pivot etc) or by knifing into crop roots.

For **pastures** apply CataPult annually after start of active pasture growth or any time during the growing period.

- Apply by centre pivot or apply by boom spray before rain. The inoculant needs to be washed down into the roots so use a very coarse nozzle.

Reducing P fertiliser applications.

- **For low input crop systems** - maintain low rates of P fertiliser and CataPult^{R} will make it work like a higher application rate
- **For higher P fertiliser rate crops** - reduce P fertiliser by 25 %. Note that in the following wheat trial both yields and profits were highest in the 50% DAP treatment. VAM work best in a slightly lower P environment.

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VAM trial – wheat – Cressy, Victoria – 2012

This wheat trial was performed by an independent agronomist in 2012 in a high yielding wheat system at Cressy, Victoria. The trial tested the product that CataPult is based on. It did not contain *Bacillus* but contained the same high grade VAM produced in Australia.

Treatment	Standard	Treat. A	Treat. B	Treat. C	Treat. D
DAP kg/ha (Cost $/ha)	100 ($83)	100 ($83)	50 ($42)	50 ($42)	0 ($0)
VAM product	Zero	Standard rate	Standard rate	Zero	Reduced rate
Yield (kg/ha)	6974	7292	7799	7161	7255
Net return ($ increase & % inc. versus Standard)	$1869 ($0, 0%)	$1932 ($63, +3.4%)	$2115 ($246, +13.2%)	$1963 ($94, +5%)	$2011 ($142, +7.6%)

Effect on Net Profit

- Reduced DAP costs increased profits when VAM product costs were included
- Highest yield was recorded in **Treatment B (50% DAP, plus VAM)** with 7.80 T/ha (13.6% inc.)versus 6.97 T/ha for standard DAP rates alone.
- **Treatment B (50% DAP rate plus VAM) gave a $246 increase in Net Profit per hectare.**

Assumed: wheat price $280/T, DAP $830/ha, VAM $22/ha

Root growth trial 2014, Sorghum

- Sorghum plants were grown in pots and either received no inoculum (T1) or were treated with CataPult at planting (T2)
- Roots were washed at 24 days post-planting, photographed and rated 1 – 5.


RESULTS:

- overall increase in root mass (Ratings 2/5 versus 4/5)
- increase in secondary root density in CataPult plants
- greater consistency in the root development in T2 plants

RELEASE & CATCH TECHNOLOGY™

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