

maximising **SOIL** potential...

SMART RADISH[®]

seeds of knowledge



a **cover crop** that will increase soil quality by improving the biological, chemical and physical soil properties.





lets be
SMART together...

Prime soils for vegetable production within New Zealand are coming under increasing pressure from a range of external forces.

The importance of protecting the ground we have has never been more important.

As growers, you are constantly chasing improvements in the plant genetics of your commercial vegetable varieties but why not in your cover/catch crops?

The importance of cover/catch crops has been well researched and documented throughout the New Zealand horticultural industry.

The influence cover crops have on soil biology, pest and disease pressure and soil structure is critical in maintaining a healthy growing platform for commercial vegetable crops. a

A cover crop will increase soil quality by improving the biological, chemical and physical soil properties.

If you are growing this crop in key seed production regions please ensure this crop is not left to **flower**. By doing so can create major issues for the seed production of other hybrid radish seed crops



IMPROVES *biological, chemical
and physical soil properties...*

What is a **BIOFUMIGANT**?

Biofumigation is an approach to soil-borne pest and pathogen management that involves the use of plants primarily from the Brassicaceae family.

The biofumigant properties of these species mean that when mulched they release compounds into the soil which help reduce pest pressure.

Control of some soil-borne pathogens may be achieved by the use of decoy or catch crops. The host plant produces chemical compounds which stimulate the germination of resting spores of the pathogen.

The host plant is resistant meaning that germinating spores (zoospores) are mobilised and then effectively starved to death resulting in a significant reduction of pathogenic spores.

GLUCOSINOLATES *and their importance...*

Glucosinolates are biologically active compounds found in the Brassicaceae family of plants.

The major role of glucosinolates in plants is believed to be a defensive response to external or environmental stimuli.

Glucosinolates are involved in communicating and triggering a range of responses in the plant defence against pest and disease.

When pathogens are present glucosinolates are hydrolysed by the enzyme myrosinase creating a toxic compound.

The higher the level of the glucosinolates, the stronger the plant's ability to fight off pests and disease.



SMART RADISH®



SMART RADISH® has been developed here in New Zealand by a collaboration between Plant Research NZ and Norwest Seeds.

SMART RADISH® can be used in combination with other cover crop species. Since its development in 2017, **SMART RADISH®** has been exported all around the world helping growers combat soil-borne pests and diseases while improving soil structure and nutrient cycling.

 **SEED INNOVATIONS**

is very excited to offer this line of cover crop to our customers.

What makes **SMART RADISH**[®] different to other biofumigants?



pest management



extremely high in glucosinolates



microbiology builder



highly vegetative



large light intercepting leaves



CO₂



strong tillering



green manure



large green matter content above ground



Slow bolting, bi-annual radish



erosion control



water retention



beneficial insects



proven results in the reduction of Sugar Beet Cyst - Nematode (*Heterodera schachtii*)



proven results in the reduction of Clubroot (*Plasmodiophora brassicae*)



can be used as forage

fat tap root combined with strong lateral roots which exploit horizontal fissures and nutrient scavenging ability



proven results in the reduction of Root-Knot Nematode (*Meloidogyne* spp) suppression

SMART RADISH® vs Clubroot

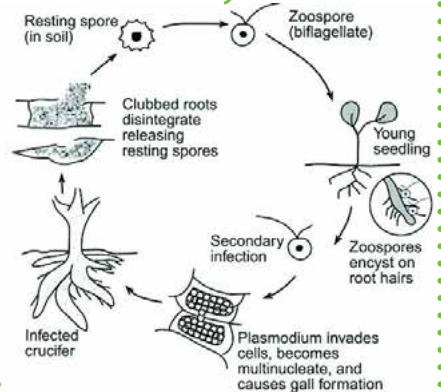
Clubroot is a major issue affecting brassica growers nationwide. While there is no silver bullet in the management of clubroot, due in part to the fact there are multiple strains of the pathogen, good crop management and suitable tools of the trade can help reduce spore numbers and the effect of this invasive pathogen.

SMART RADISH® produces compounds which stimulate the germination of the resting clubroot spores. The newly germinated spores (zoospore) are now mobile and travel via water particles throughout the soil in the hunt for root hairs to infect.

Due to the high resistance of the **SMART RADISH®**, the zoospores are unable to infect the plant and are starved to death, resulting in the reduction of clubroot found in the field.

When combined with other husbandry practices, **SMART RADISH®** has proven to help reduce and control the infection levels of clubroot in our soils.

Clubroot life cycle



SMART RADISH® AGRONOMY



SOWING

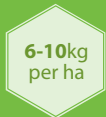
SMART RADISH® can be sown year round with basic establishment practices.



COVER CROP

SMART RADISH®

SMART RADISH® can be grazed or mulched into the soil after around three months of growth or, for increased soil structure benefits, **SMART RADISH®** can be left to form a large tap root over a longer period.



6-10kg
per ha

SOWING RATE

6-10kg per ha.

Please talk to our Technical Sales Representatives about these options.



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