



# REAP THE BENEFITS

- Nematode control
- Bio-fumigation
- Nutrient recycling
- Weed suppression
- Compaction reduction
- Increased organic matter
- Erosion control
- Improved water infiltration & penetration
- Pollinator attractant





# NEMATODE-RESISTANT COVER CROPS FROM THE EXPERTS

Allied Seed, LLC has partnered with P. H. PETERSEN to bring world-class nematode-resistant cover crops to the United States. This partnership combines Allied Seed's deep understanding of cover crops and grower needs with P.H. Peterson's expertise as a leading German breeding and research company specializing in nematode- and disease-resistant cover crops for sugarbeets, potatoes and many other crop rotations.

Our two companies have now entered into a production licensing agreement to produce and distribute nematode-resistant radish, mustard and black oats in North America.



## TESTED! PROVEN! IN THE LAB AND IN THE FIELD.

You can count on Allied Seed for the highest quality nematode-resistant cover crop seed. We confirm the nematode-resistant levels in our brassicas by testing seed lots we produce through university and independent research trials.

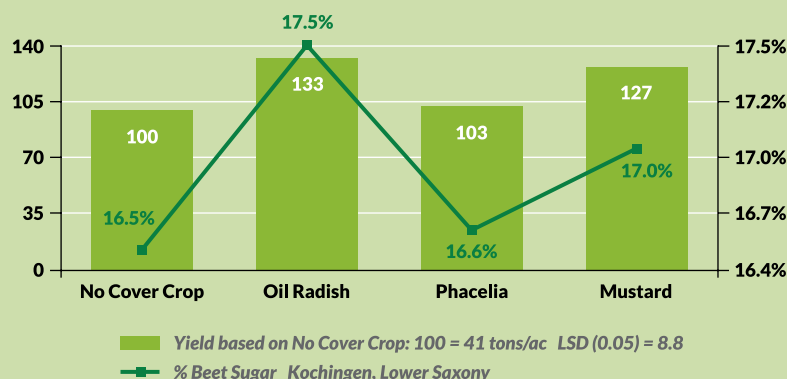
# THE CHALLENGE: VERY PERSISTENT ENEMIES



## BEET CYST NEMATODE

Beet cyst nematodes (BCN), *Heterodera schachtii*, are the most economically significant sugarbeet pest — responsible for 90% of all nematode related sugarbeet damage and causing potential losses in excess of \$800 per acre — making nematode control in affected areas a high priority. Early planted nematode-resistant cover crops can suppress nematode levels below the damage threshold and ensure optimal growth conditions for sugarbeets. Nematode-resistant cover crops not only reduce nematode populations, but also increase the beet and sugar yield and thus the cost-effectiveness of sugarbeet production.

### EFFECTS OF COVER CROPS IN SUGARBEET ROTATIONS



## COLUMBIA ROOT KNOT NEMATODE

The Columbia Root Knot nematode (CRKN), *Meloidogyne chitwoodi*, is found throughout the US and has over 3,000 host species. Host species include many common weeds, cereal grains, legumes, sugarbeets and potatoes.

In potatoes, CRKN can cause severe losses due to the negative effects on both yield and quality; if unregulated, nematode related crop losses to potatoes could be as much as \$40 million in the Pacific Northwest alone. Utilizing nematode-resistant cover crops — planted at the proper time — reduces CRKN numbers. How? By inhibiting nematode reproduction and killing nematodes via the bio-fumigation process that occurs when the green material is incorporated into the soil. Nematode-resistant cover crops also provide soil, water and nutrient benefits for the following crop, increasing overall profitability.





# THE SOLUTION: NEMATODE-RESISTANT COVER CROPS

**Nematode-resistant cover crops deliver a positive difference for your soil, yields and bottom line.**

## IMPROVEMENT OF SOIL FERTILITY:

Cover crop varieties and mixtures support humus formation and protection against erosion and nutrient leaching.

## REDUCTION AND PREVENTION OF DISEASES:

The targeted use of cover crops leads to a reduction of diseases and nematodes, improving yields and quality of the subsequent crop. Cover crops also improve soil fertility by supporting humus formation and conservation of nutrients. The result is intensive root penetration and weed suppression, a fundamental prerequisite for combating many diseases. But not just any cover crop will do – using specially-tested varieties is necessary for the targeted control of nematodes and diseases.

## BIOMASS AND FEED PRODUCTION:

Cover crops can be used to produce biomass for a green manure bio-fumigant application or for livestock grazing.

## ENVIRONMENTALLY FRIENDLY NEMATODE, WEED AND DISEASE REDUCTION:

Not considered a restricted use pesticide, nematode-resistant cover crops effectively reduce nematode soil populations by disrupting the reproductive cycle and through bio-fumigation during the decomposition of the green manure. The result? A number of positive effects on the protection and improvement of the important resources of soil, air and water.



## ...PLUS

### ALL THE BENEFITS OF BIO-FUMIGANTS

All of our Nematode-Resistant Cover Crops are excellent bio-fumigants, allowing you to harness naturally-occurring chemical agents to suppress nematodes, insects, weeds, fungal pathogens and other problems.

Bio-fumigation occurs during the decomposition of the bio-mass following incorporation of brassicas like CONTROL, CONCORDE and MASTER, into the soil. When it is time to terminate or chop your cover crop, it is best to flail chop then disk or plow into the ground. As the plant breaks down, it releases an organic formulation of isothiocyanate, which is the active ingredient in metam sodium and acts as a natural fumigant.

The result is healthy soils without added chemical costs.



# FIGHT MORE THAN JUST NEMATODES

## Resistant Against Common (& Less Than Common) Nematodes & Diseases

Beyond sugarbeet cyst nematodes, multi-resistant Oil Radish varieties like CONTROL and CONCORDE also reduce other nematodes as well as many crop rotation diseases. That's why multi-resistant Oil Radish varieties make ideal cover crops for healthy beet, potato and vegetable crop rotations.

### NEMATODES



#### BEET CYST NEMATODE

- Reduction of more than 90% of *Heterodera schachtii* possible
- Control of *Heterodera betae* possible
- No formation of resistance-breaking nematodes
- Control even in deeper soil layers



#### SOUTHERN ROOT KNOT NEMATODES

- Effective reduction of *M. incognita* & *M. javanica*
- In greenhouse cultivation, pepper, tomatoes, & pumpkin



#### ROOT KNOT NEMATODES

- Reduction of *Meloidogyne chitwoodi* officially tested & confirmed
- Stops development of *M. fallax*
- Suitable for crop rotation of potatoes, vegetables & flower bulbs



#### NORTHERN ROOT KNOT NEMATODES

- Efficient against *Meloidogyne hapla*
- For organic crop rotation with clover & carrots
- Protective also for potatoes & sugarbeets



#### STEM & BULB NEMATODE

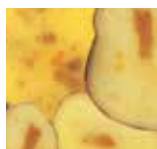
- No multiplication of *Ditylenchus dipsaci* if used as a cover crop in crop rotation with beet, vegetables or flower bulbs



#### ROOT LESION NEMATODE

- Poor host for Root Lesion Nematode (*Pratylenchus*)
- Cover crop on sandy soils for crop rotation with potatoes, oilseed rape, cereals, vegetables & flower bulbs

### DISEASES



#### CORKY RINGSPOT

- Reduction of Corky Ringspot in potatoes (caused by tobacco rattle virus)
- Suppression of Stubby Root Nematodes (*Trichodorus sp.*) which carry the tobacco rattle virus
- Fast soil coverage: less weed development



#### RHIZOCTONIA ROT

- Reduction of yield & quality losses caused by Rhizoctonia in
  - Potatoes: dry core and black scurf
  - Beets: late root and crown rot
  - Salads, cabbage, and species such as corn, grass, beans, & flower bulbs
- Supports soil structure & aeration, enhances soil capacity (water, nutrients) & development of biological antagonists



#### DISEASES IN CEREAL

- Break-up of disease circle in cereal (e.g. take-all of cereals)



#### PYTHIUM

- Less damage caused by Pythium fungi in crop rotation with peas, potatoes, & flower bulbs



#### CLUBROOT

- No building-up of Clubroot pathogen *Plasmodiophora brassicae* in intercropping
- As part of crop rotation with oilseed rape & cabbage

## SUCCESS TWO WAYS

### OUR NEMATODE-RESISTANT COVER CROPS PROTECT YOUR FIELDS IN TWO PRIMARY WAYS:

**RESISTANCE** Our cover crops provide no nutrition for nematodes. While this has no impact on plant health (or the benefits to your field) it reduces or eliminates nematode reproduction, dramatically lowering nematode counts.

**TRAP CROP** The "trap" is set by stimulating the SBCN eggs and larvae present in the soil to develop without being able to complete their life cycle in what it perceived to be a host plant — but isn't.

# NEMATODE-RESISTANT OPTIONS

Effective for sugarbeet, potato, vegetables, permanent tree crops & grapes

## NEMATODE-RESISTANT OIL RADISH

Beyond sugarbeet cyst nematodes, multi-resistant Oil radish varieties like CONTROL and CONCORDE also reduce other nematodes as well as many crop rotation diseases. That's why multi-resistant Oil Radish varieties make ideal cover crops for healthy beet, potato and vegetable crop rotations.

NEW

### CONTROL

- Officially tested resistance against *Meloidogyne chitwoodi* (up to 99%) and resistance against beet cyst nematodes up to 90%
- Control radish can decrease CRKN up to 99%
- Fast early development, good weed suppression



NEW

### CONCORDE

- Fast, early development with low flowering tendencies makes Concorde ideal for later plantings
- Reduces BCN up to 90%
- Concorde radish can decrease CRKN up to 90%



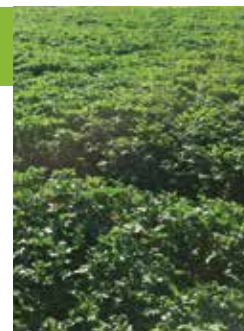
## NEMATODE-RESISTANT WHITE MUSTARD

The planting period for Master Mustard begins later than that of Oil Radish varieties due to the flowering tendency of Master. For the late planting dates in mid-September, vigorous and fast early development is the most important selection criterion, which is precisely why Master was developed.

NEW

### MASTER MUSTARD

- Fast growing
- Delayed flowering for earlier plantings
- Rapid maturity for later plantings
- Use when bio-mass considerations are most important to your operation
- Reduces BCN up to 80%
- Reduces CRKN up to 80%







## NEMATODE-RESISTANT BLACK OAT

Pratex Black oats, *Avena strigosa*, offer a wide planting window, giving you season-long flexibility as a cover crop. Not frost tolerant, so avoid later plantings approaching normal frost dates.

NEW

### PRATEX

- Effectively reduces Root Lesion and Stubby Root nematodes
- Performs well in all soil types
- Good biomass producer that can be used for grazing livestock
- Rapid development makes for ideal weed suppression



***Improve soil health, suppress weeds,  
scavenge nutrients and attract honey bees!***



## FASTER! EARLIER! BETTER!

Fast, early development ensures rapid root soil penetration for nematode control. By quickly establishing a field canopy, growers can ensure effective weed suppression and preserve the soil structure.

The tendency to flower is an important criterion in connection with the planting time. In the case of early planting dates, from the end of July to the beginning of August, the late flowering varieties are preferred because they have a long vegetative growth phase.





## ABOUT ALLIED SEED

As a full-line, full-service forage, turfgrass and cover crop seed company, Allied Seed is truly in a field of its own. Launched in August 2000, Allied Seed produces, processes and distributes forage legumes and grass seed varieties and mixtures through our Farm Science Genetics® brand, turfgrass seed varieties through our Turf Science Genetics® brand and cover crops through our Conservation Science Genetics® brand.

With processing facilities in the primary production areas, as well as a fully equipped, in-house seed lab staffed with a Registered Seed Technologist, Allied Seed conditions, treats, coats and packages to customer specification in our own facilities.

Most importantly, customers come first. You can count on our team of seed professionals to go above and beyond to meet your needs. We stand behind our products from the moment you order until your customers are satisfied.

**ALLIED SEED, LLC**  
888-252-7573  
alliedseed.com

