

Tagetes patula for biological control of soil nematodes



After research showed its good results in the nineties, nowadays *Tagetes patula* is used in the Netherlands and Belgium with good results against soil nematodes like *Pratylenchus penetrans*.

What is it?

Original from Mexico, and grown as chicken feed, it was shown that after its use, the next potato crop had less problems with *Pratylenchus penetrans*, a nematode causing root damage. The Horizon 2020 Network Best4Soil explains how, in the temperate zones like the Netherlands, after 3 months the tillage layer is fully rooted and 99 % of the nematodes are killed.

Biological control

Nematodes

Root lesions

How does it work?

Sowing 5-10 kg seed per ha is enough for a good coverage. Nematode presence decline is that strong that it takes more than 4 susceptible hosts to find higher levels of the nematode again.

This crop also delivers between 625 – 1875 kg effective organic material per hectare. The crop is easily destroyed, especially after the frost, and gives organic matter which is easy to incorporate.

According to Best4Soil results

- *Tagetes erecta* is much less effective in controlling nematodes
- *Tagetes minuta* has no nematode-killing effect at all
- With ***Tagetes patula***, farmers have a colourful solution to the problem of root lesion nematodes

Root lesion nematode
Pratylenchus penetrans
Northern root lesion nematode

Legend soil type	
1	sandy soil
2	reclaimed peat soil
3	sandy clay loam
4	clay soil
5	silty soil (loess)

Legend damage	
	unknown
	none
	little (0-15%)
	medium (16-35%)
	serious (36-100%)

Legend propagation	
--	active population decline
?	host plant susceptibility unknown
-	non host
•	poor
••	moderate
•••	strong
R	variety dependent
S	serotype dependent
i	some information

Barley	••	Barley
Beet (sugar, fodder)	•	Beet (sugar, fodder)
Faba bean / Broad bean	•••	Faba bean / Broad bean
Maize (corn)	•••	Maize (corn)
Potato	•••	Potato
Wheat	••	Wheat
Carrot	••	Carrot
Lettuce	••	Lettuce
Onion	•••	Onion
Marigold	--	Marigold
Mustards	?	Mustards