Ecospray Crop Protection from Polysulfide chemistry

An emerging presence in global agriculture.

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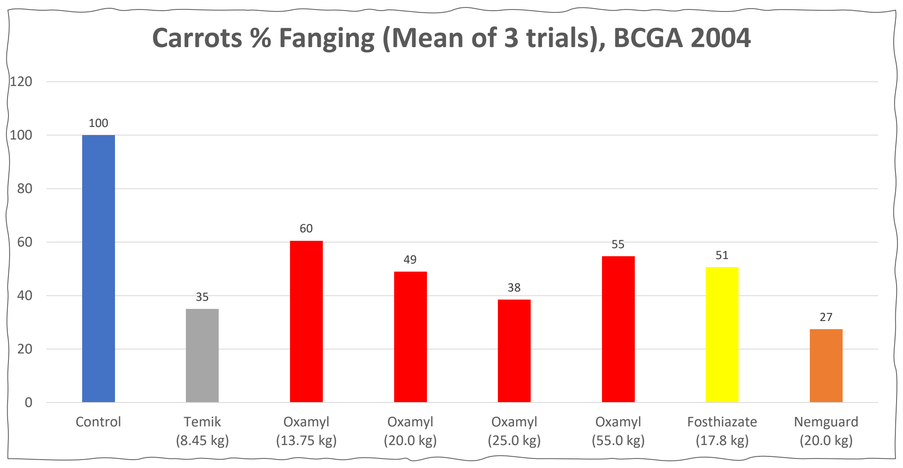
NEMguard nematicides as both granulate and liquid formulations based around polysulfide chemistry from garlic are now registered throughout Europe, East and West Africa, the Middle East, Australia and South Korea. In 2021 the liquid formulation NEMguard SC was authorised for use against potato cyst nematodes in UK potato production via a direct placement technology. NEMguard SC placed via drip irrigation primarily targeting root knot nematodes in high value protected crops is widely adopted.

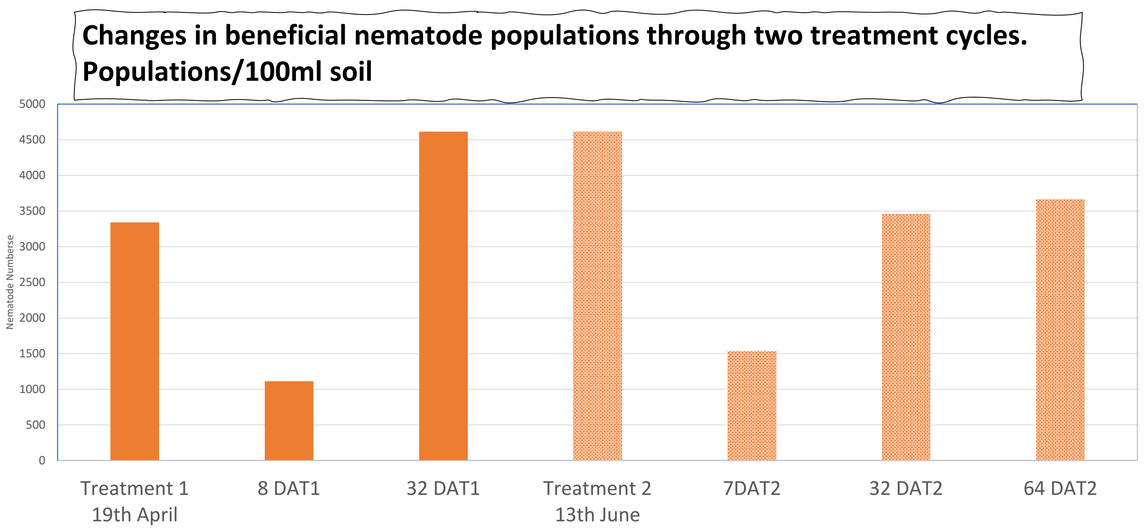
In November 2021, NEMguard DE was authorised for use in UK sugar beet production replacing (oxamyl) as the only previously authorised nematicide for use in UK sugar beet production. In 2022 NEMguard DE was given an EAMU authorisation for UK pea and pulse crops to reduce crop loss and will enter this market in 2023. NEMguard efficacy is comparable to many of the synthetic actives (e.g. OP/Carbamate/SDHI) but with no long term negative effects on soil health All NEMguard products have zero residues and a maximum of 7-days PHI. The core active is acceptable for use in EU organic agriculture. Ecospray is now introducing NEMguard SC to the crop canopy as an insecticide and fungicide.

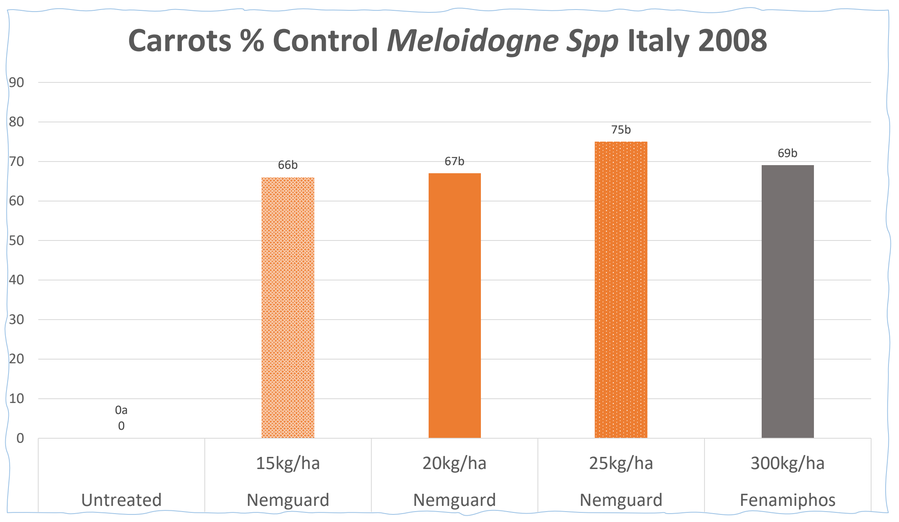


The efficacy of Ecospray core active based around polysulfides derived from garlic was revealed in 2004 in GEP trials commissioned by the British Carrot Growers Association featuring market leading nematicides..
The figure shows the levels of damage reduction in carrots achieved by aldicarb, fosthiazate and oxymyl relative to 100% in the untreated compared to 20kg/ha NEMguard now authorised in sugar beet, carrot and parsnip production in the UK. NEMguard caused the greatest damage reduction.

NEMguard is also authorised in Southern Europe, Israel and Australia. The impact of NEMguard DE on damage in carrots caused by *Meloidogyne spp* in carrot in Italy is shown below. The 20 kg/ha rate was equivalent to fenamiphos applied at 300 kg/ha.

Despite comparable efficacy to actives such as aldicarb, NEMguard does not produce long term declines in populations of beneficial nematodes such as bacterial and fungal feeding species. Work completed by AFBI, Belfast on elite turf tracked the changes in beneficial nematode populations through two application cycles. The cycles of decline following treatment followed by rapid recovery are shown below.





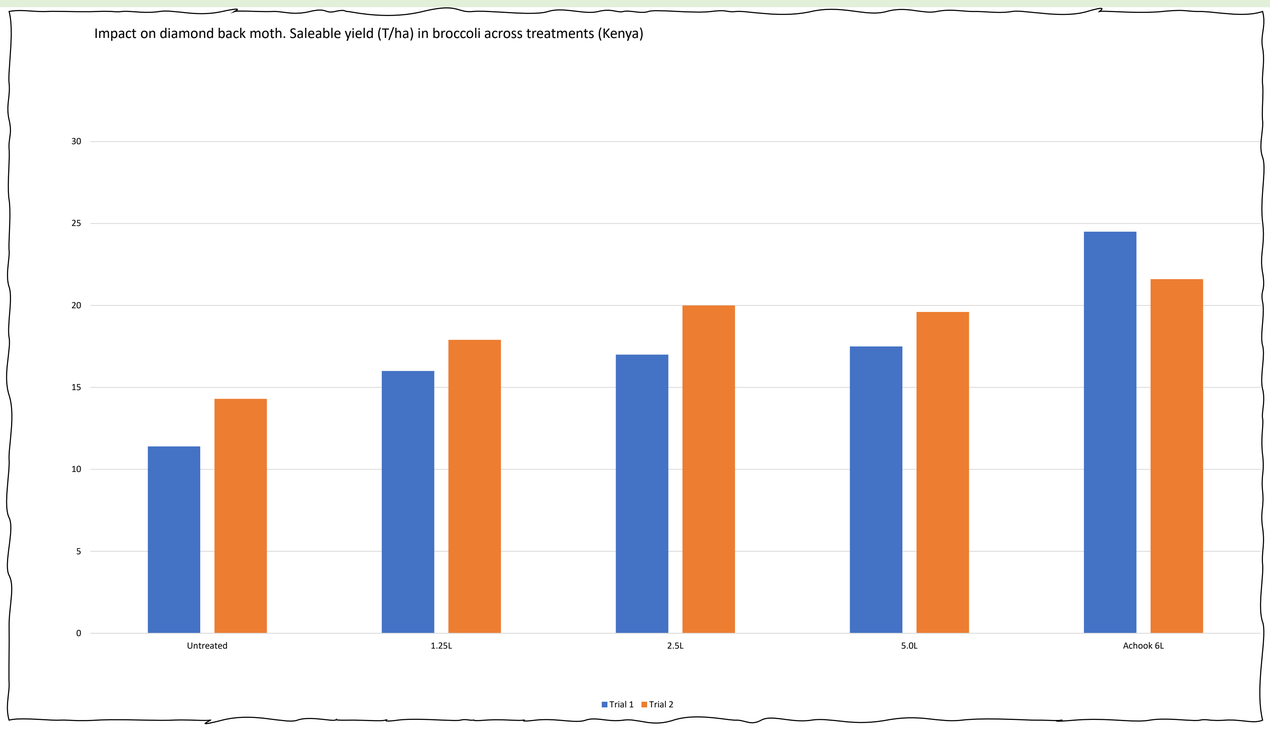
Population decline by approximately 70% after 8-dayts post treatment, but recover to in excess of their starting populations by 32-days post treatment. After a second cycle of treatments, and measured at 64-days after the first application, populations were are their starting levels. The data clearly shows both the nematicidal effect and recovery of the beneficial nematode population.

Ecospray and Soil Metagenomic Technology

Ecospray has completed groups of efficacy trials in UK potato crops where NEMguard was compared to fluopyram. A component of the work included data on soil DNA changes following exposure to NEMguard or fluopyram. The data show substantial differences in soil DNA profiles after exposure to the two nematicides.

NEMGUARD SC AS AN INSECTICIDE

Impact on diamond black moth- Levels of attack were determined by counting the number of larvae. Numbers reached and exceeded 50/plant in both trials at the end of the treatments. No larvae were counted in the NEMguard SC treatments.



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