

# TURF TRIAL INFORMATION

Sportsmaster<sup>®</sup>  
WSF



## Preventative applications of **SMX based seaweed** can reduce Plant Parasitic Nematode infection

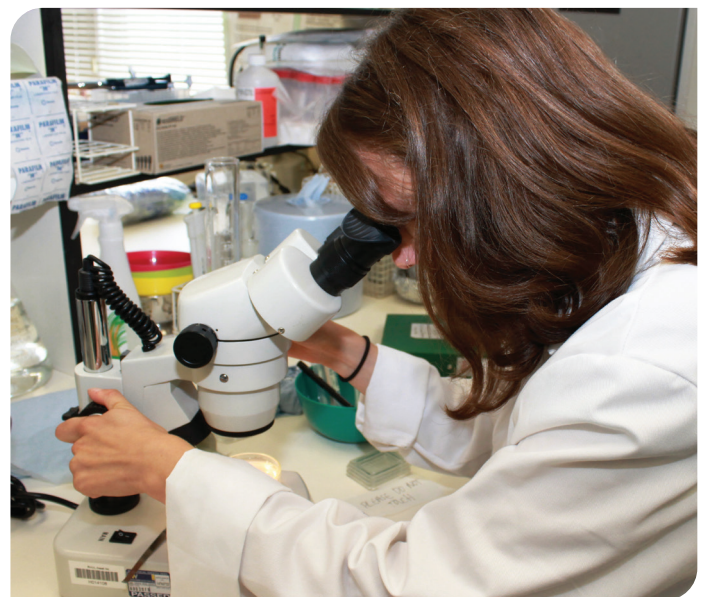


### SUMMARY

- Independent trial completed at Royal Holloway University, London as part of a PhD by Dr Tamsin Williams.
- Glass house trial completed on golf green cup cores from a plant parasitic nematode infected *Agrostis stolonifera*, sand-based golf green.
- Six weekly applications of SMX seaweed (1 kg/ha in 500L water) compared with water control made to eighteen split cores (matched pairs).
- At week seven, cores were removed and nematode population collected, identified and counted.
- SMX seaweed (alkaline extracted) significantly ( $P < 0.05$ ) reduced numbers of the plant parasitic nematode *Helicotylenchus* (spiral nematode), which was the dominant species in the samples. This reduction was significant for cores where populations were high.

### METHODS

A trial was conducted as part of a PhD programme examining the use of seaweed extracts to control plant parasitic nematodes in turfgrass at Royal Holloway University, London. Eighteen golf cup hole cores (108 mm diameter, 180 mm deep) were collected in March from a practice golf green in the SW UK with a known plant parasitic (PPN) infection problem. The cores were *Agrostis stolonifera* sward over a sand-based rootzone maintained as golf green turf. Each of the 18 cores were split, and secured in plastic tubes to provide matched pairs for treatment. The trial was completed in glasshouse conditions under grow lights on a 16:8 day night cycle. Within each pair one randomly selected half-core was treated weekly with SMX seaweed powder (Sportsmaster WSF SMX, ICL), at an equivalent rate of 1 kg/ha in 500L water. The remaining half-core was treated with water. Cores were trimmed weekly at 10 mm. After six weeks (six applications) a 250 g sample was collected from the rooting zone 0–60 mm and nematode population extracted.



Nematode identification and counting.

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## RESULTS

The plant parasitic nematode *Helicotylenchus* spp (spiral nematode) was the dominant PPN found in the cores, alongside a mixed population of non-PPN taxa. There was a significant difference between control and SMX seaweed treated groups for PPN ( $P < 0.01$ ), but this was not seen for non-PPN species ( $P > 0.05$ ) (Figure 1).

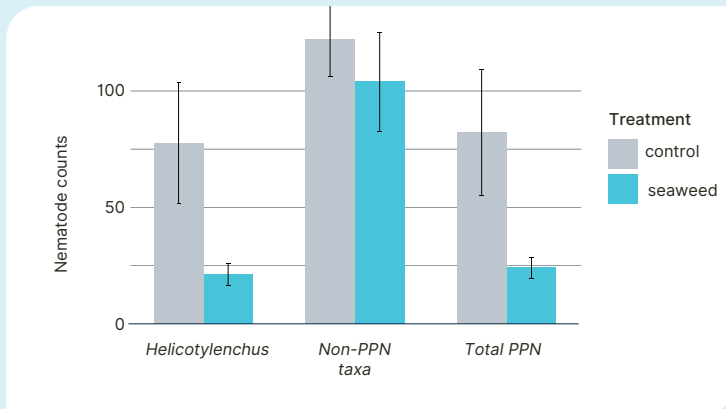


Figure 1: Nematode counts of *Helicotylenchus* spp, total PPN and non-PPN genera taken from 1 ml aliquots of a nematode suspension. Error bars are standard error of the mean.

An examination of each pair of split cores (Figure 2) shows that when PPN populations are high (cores c, g, h, i, l, & q), the application of SMX seaweed drastically reduces the population, compared to the water-only control split-core. Where populations are much lower (the remaining 12 cores) there is not a large difference between treated and untreated.

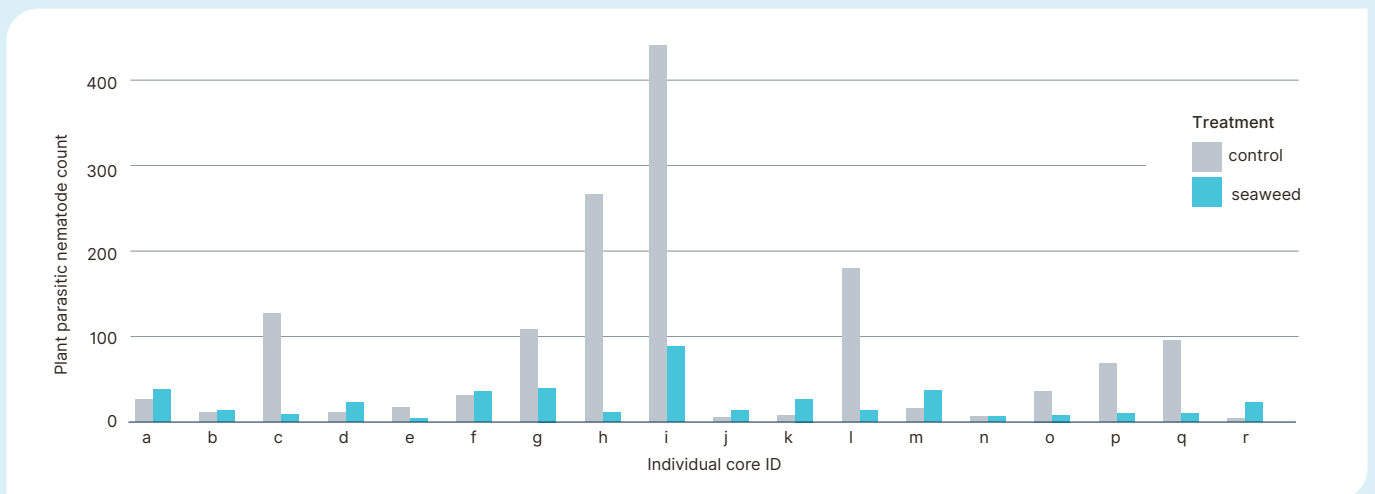


Figure 2: Nematode counts of *Helicotylenchus* spp, taken from 1 ml aliquots of a nematode suspension extracted from golf green cores.

## CONCLUSIONS

An independent trial at Royal Holloway University, London, completed as part of a PhD by Dr Tamsin Williams demonstrated that six weekly applications of SMX seaweed at a recommended rate, significantly reduced populations of PPN compared to a water only control. This trial supports previous work in this area suggesting that alkaline extracted seaweed, in this case Sportsmaster WSF SMX would be a useful application for the management of plant parasitic nematodes in sports turf situations.