

Promising developments in pest and disease control

The leaders of two university research teams, Dr Avice Hall and Dr Glynn Percival, have explained the findings of their teams regarding the use of Orion's silicon-based products at a workshop at Zantra Ltd at Dunkirk, Canterbury, Kent. Their research has focused on the effectiveness of these products in controlling a huge range of pests and diseases, including in strawberries.

Dr Glynn Percival, working for the Bartlett Tree Research Laboratory at Reading University, has been working on landscape tree species, and Dr Avice Hall from the University of Hertford has been collaborating with berry grower, Harriet Duncalfe, on improving the control of strawberry mildew.



*Dr Glynn Percival (left)
and Dr Avice Hall*

Both presented evidence from the trials that confirmed the efficacy of Sirius and Rigel G, two silicon-based formulations. "Silicon is showing itself to be a totally misunderstood element in the horticultural world, with evidence emerging that it has a huge potential to suppress pests and diseases, and enhance plant growth", said Avice Hall. "Silicon is all around us, yet appears to be elusive in its uptake, as strawberry plants are non-accumulators, yet cereal crops are accumulators, enhancing their performance by readily taking it up".

Dr Hall confirmed that strawberry mildew has impacted heavily on the performance of strawberries grown under tunnels, causing substantial losses in some years. "Potassium bicarbonate has been used successfully in the past, but we have found that by mixing Orion's Sirius (silicon biphosphate) we have strengthened the plant's tolerance to the disease", she explained. "We have an increase in the length and density of leaf hairs, with some varietal variation, which appears to affect the behaviour of plant pathogens".

Her trials have also shown that silicon is highly systemic in its movement from soil to plant, and that application via drip irrigation lines was very effective. "It would also appear that the earlier in the season this is instigated, the longer the sequencing of applications and the greater the effectiveness", she added.

However, Dr Hall explained that the greatest impact on plant disease was when a conventional fungicide was added to this mix. Her research has also led her to conclude that increased numbers of leaf hairs have interfered with the germination of fungal spores as well as the feeding habits of sucking insects such as aphids and spider mites.