

Biopesticides & Biostimulants: Friends with benefits!

Most greenhouse operators are familiar with microbial biopesticides, which includes bioinsecticides (e.g. BotaniGard, BioCeres, Met52) and biofungicides (e.g. Rhapsody, Rootshield). But semiochemicals - think thrips lures - and 'non-conventional' pest control products such as plant extracts and mineral oils, are also classified as biopesticides in Canada. New modes of action brought by these materials make them ideal companion products in IPM, where they deliver efficacy and safety. Their compatibility with natural enemies makes them a natural choice for inclusion in biocontrol programs, and their short residual and REIs means that they cause minimal disruption to regular crop management activities. Microbial biopesticides often require direct contact with the pest or disease to be effective, but a new generation of microbials work by activating the plant's own defense mechanisms. Understanding their different modes of action is vital if they are to be used successfully.

The term 'biostimulants' is something of a catch-all phrase used to describe biological or biologically-derived fertilizer additives and similar products that foster plant growth, health and productivity throughout the crop life cycle. Biostimulants encompass a diverse group of product technologies that includes microbial inoculants, biochemical materials, amino acids, humic acids, fulvic acids, seaweed extracts and more, that are sold on the promise of bringing multiple benefits to the crop they are applied to. This can include improved plant resilience in the face of pest and disease challenges (but no claims for pest and disease control), and greater tolerance to abiotic stresses such as drought or heat. Equally importantly, these materials may promote production efficiency by enhancing nutrient access and uptake, which translates to improved growth and yield.

This presentation will present examples to demonstrate some of the benefits these materials can deliver and will attempt to unravel some of the mysteries surrounding their effective use.