

Chemical Control/New Products

Feeding stimulant that mimics monosodium glutamate and has improved rain-fastness

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Abstract: Recently we showed that monosodium glutamate (MSG) enhances spinosad's activity through stimulation of feeding and pesticide intake by neonates of codling moth. However, because of its moderate rain-fastness, MSG was persistent in the field only in no-rain conditions. In order to propose rain-fast alternatives for MSG we investigated glutamate related pharmacology of taste perception by codling moth neonates. On the basis of this study we choose *trans*-1-aminocyclobutane 1,3 dicarboxylate (*trans*-ACBD) as a candidate for feeding stimulant with improved rain-fastness. *trans*-ACBD stimulates feeding in codling moth neonates, its feeding stimulatory properties are maintained in presence of spinosad, and addition of *trans*-ACBD to spinosad significantly increases its efficacy.