

Pymetrozine

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The xylem and phloem are the two types of transport tissues in vascular plants (higher plants). Water and some nutrients are transported in the xylem up the plant to the leaves. Sugars and other products are transported in the phloem down the plant from the leaves. Insects may feed on the phloem or the xylem. Pymetrozine is transported in the xylem and phloem, providing systemic activity against insects feeding in either of these tissues. This article presents some properties of pymetrozine.

The Insecticide Resistance Action Committee places pymetrozine in group 9B (pyridine azomethine derivatives). Pymetrozine interferes with feeding behavior. The muscles that are used to pull food into the mouth are paralyzed. The stylet (feeding tube) of sucking insects is blocked. Sucking insects remove their stylets from the plant and stop feeding in an hour. The affected insects will remain on the plant, starve, and die in two to 10 days. Pymetrozine is active as a systemic in the xylem and phloem, as a translaminar, and if eaten. It has some activity as a contact insecticide. Pymetrozine is rainfast because it easily penetrates the plant.

Sucking insects such as planthoppers, leafhoppers, aphids, and whiteflies are killed by pymetrozine, and all life stages that suck sap from the plant are affected. This insecticide exhibits low toxicity on beneficials (including bees) and mites. It should not be applied to actively foraging bees or flowering weeds.

The translaminar activity of pymetrozine allows the material to move through the leaf from one surface to the other. However, thorough coverage is recommended when an application of pymetrozine is made. Cross-resistance between pymetrozine and neonicotinoids (class 4) has been observed.

In summary, pymetrozine is systemic and is translocated in both the xylem and phloem. It also shows activity when eaten and as a translaminar. It has some contact activity. Pymetrozine is effective against the life stages of sucking insects that are feeding on the plant. This insecticide is useful in insecticide resistance management. Products containing pymetrozine include Fulfill and Endeavor.