



Pacific Northwest
Vegetable Extension Group

Identification & Management of Emerging Vegetable Problems in the Pacific Northwest

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Adjuvant Damage on Pea

Affected plant species:

Pea (*Pisum sativum*)

Common name of the causal organism/agent:

“In-Place” is a deposition aid and drift management agent added as a tank mix with pesticides to reduce spray drift during applications. The active ingredients of In-Place are modified vegetable oil, aliphatic mineral oil, amine salts of organic acids, and aromatic acid.

Symptoms & key characteristics for identification:

The herbicide/adjuvant combination of basagran + metribuzin + In-Place can result in yellow, “leopard spot” symptoms on pea foliage (Fig. 1), although large discolored yellow areas on the pea foliage also can develop (Fig. 2). Unlike spotting caused by some pea pathogens, the margins are well defined. Only pea foliage present at the time of application develops symptoms. Affected plants continue to develop normally with no stunting or abnormal foliar development.



Fig. 1. Yellow-spotting on leaves due to application of a combination of basagran + metribuzin + In-Place. In-Place is a deposition aid that is added to a tank mix with pea herbicide to prevent/reduce drift. In-Place tends to concentrate the herbicides at certain locations on the leaf surface, resulting in yellow spots on the foliage.



Fig. 2. Severe yellow chlorotic areas on pea leaves several weeks after they were sprayed with a combination of basagran + metribuzin + In-place.

Pattern in field:

Pea plants typically display these symptoms uniformly across a field. Only foliage present at the time of the spray application develops symptoms. The upper most leaves at the time of application will demonstrate the most severe symptoms.

Management:

Avoid using this type of deposition aid on pea crops in combination with the above mentioned herbicides because of herbicide sensitivity problems in pea. The deposition aid causes the herbicide to become more concentrated in spots on the leaves, resulting in large yellow areas on the leaf surface.

Selected references:

PNW VEG website at http://mtvernon.wsu.edu/path_team/vegpath_team.htm and Photo Gallery at http://mtvernon.wsu.edu/path_team/diseasegallery.htm