



## Frost versus Insects

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Sometimes abiotic (weather) injury is confused with insect damage. Here is a list you can use to distinguish between frost damage versus insect injury.

***Distribution of damage in space:*** Frost damage may occur across the entire field (for example, no-till fields), but can also be patchy (low spots in field). Insect damage is usually patchy, worse in some areas than others, or concentrated along edges or in areas of poor crop growth.

***Distribution of damage in time:*** Leaves with frost damage are of a similar age (hit on the same evening), while new growth is not affected. In contrast, with an insect infestation, often at least some new growth is damaged. In some cases (for example, aphids), insects actually concentrate on juicy new growth.

***Damage to neighboring crops, weeds:*** Cool night temperature affects a large area, so the same type of damage may be found on weeds in the field, on plants along the edge of the field, and in neighboring - especially different - crops. This indicates a widespread event affecting many plants, i.e, cool temps. In contrast, damage by a particular insect will usually be found on one plant species, not on weeds and other crops.

***Lack of consumption:*** Frost damaged leaves may be whitish, brown, limp, or twisted, but leaf tissue itself is not missing. In contrast, feeding by defoliating insects (for example, alfalfa weevil) removes leaf tissue.

***Lack of bugs or signs:*** No insects are found, or at least consistently found, associated with the damage. There is also a lack of cast skins, frass (bug droppings), slime trails, or other signs that insects were present.

***Coffee Talk:*** The talk in the coffee shop is about the recent cold temperatures, not about armyworms and beetles.

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