



TOMATO INFO

**Note: Mildew
Blackmold
Bindweed control**

FIELD NOTES

This informational piece is simply a brief and hurried composition.

Blackmold fruit rot fungicidal control is a preventive treatment approach. In general, a single fungicidal application applied 4 to 6 weeks before harvest has been effective (and is the recommendation). An application made as early as 8 weeks or as late as 3 weeks before harvest have also had effect. These single applications have been the economical choice in our field trials on the UC Davis campus plots over the years. A second application made 2 to 3 weeks later has marginally helped in some years. Our fungicide treatments have been consistently helpful, but have only reduced infection levels by 50%.

The decision to treat becomes based on your expectation of disease pressure. If blackmold fruit rot level is 10% or less, having 5% blackmold fruit rots results in continued harvest efficiency. If blackmold fruit rot level approaches 20%, a 50% reduction in rots to 10% results in an expensive or an abandoned harvest. So the blackmold fungicidal control program reduces infection level, but doesn't guarantee success of harvesting under high disease pressure.

If rain is predicted, what to do? Make that application ahead of the rain. Post rainfall applications are not nearly as effective. If an application was made within 2 weeks and harvest will be very soon after and will be completed in a few days, a second application might not be needed. With a wet weather event, an early application made 3 weeks prior probably should be followed with another preventive.

If the rain forecast is for a 2" storm that extends over multiple days with high humidity, the fungicidal program does not stand up well to those conditions.

Timely harvests are always valuable in reducing the risk from this ripe fruit rot. The longer ripe fruit sits in the field, the more vulnerable the fruit is to infection.

Tomato powdery mildew pressure ramped up toward the middle of the season and has continued. My risk assessment for powdery mildew has become associated with harvest periods in our area.

Generalized risk assessment for tomato powdery mildew

TIME PERIOD	CALENDAR DAYS	% OF HARVEST SEASON	RISK LEVEL
Early	July- early Aug	25%	low
Mid	early Aug- mid Sept	50%	high
Late	> mid Sept	25%	moderate

If our local harvest season was divided into the early 25%, the middle 50% and the late 25%, the greatest management attention should be paid to the middle segment. If mildew develops in late June or early July, it likely takes a few weeks to ramp up on an area-wide level. At that point, the pathogen level multiplies rapidly by cycling between infection and spore production. In our area, the early season generally escapes the massive spore buildup period. The middle period is exposed to the high disease pressure. The late season tomatoes are exposed to the high pressure as well, but the consequence of canopy loss is less because of shorter days and likely cooler temperatures. The pathogen is weather driven; and so this time template is oversimplified.

The problem with our control programs is the treatments are only preventive. And the pathogen infects perhaps several weeks before the plant displays yellow spotting symptoms. And the chemical control materials only effectively last for a week to perhaps 10 days under high disease pressure. So with sustained pressure, the control program involves early preventive and multiple repeat applications.

And in all these years, it is clear that many fields escape treatments even when surrounded by fields greatly impacted by mildew. Why is that? Factors that increase the risk appear to include other disease and pest problems such as russet mites or root rot problems.

How much damage is acceptable? For fresh market tomatoes, sun bleached fruit is left unpicked in the field. For processing tomatoes, a little sun-damage is tolerable except whole peel quality would be reduced. And in all cases, it appears that fruit soluble solids levels are decreased by moderate mildew damage.

Field Bindweed Control: During the late fall, a rainfall after harvest is welcomed for the bindweed herbicide control program. If rainfall is sufficient, it would generate vigorous bindweed growth. In any event, even a low rainfall amount would wash much of the dust accumulated over the summer on the leaves. As we know, the chemical glyphosate ties up on soil. So if rainfall is forecast, waiting until after the leaves are washed of the dust will greatly improve glyphosate movement into the plants. The timing should also be staged with vigorous growth with many open flowers for effective control.

Submitted by,

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