

HAIL DAMAGE: WHAT TO DO AFTER THE STORM

Grower Panel

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In searching the archives, I do not find statistical research on what the BEST course of action is to take following a hail storm. At this point in time I can only share my personal observations from the 1992 hail showers and offer some **Food For Thought**.

If plagued with hail, here are some considerations:

1) Know your plants.

If you are not seeing a natural mending process in the fruit, perhaps a nutrient deficiency is present.

Carefully monitor what has happened to your crop as a result of being hit with hail. (Types of injury, percentage of loss (fruit on bed floor), record types of stress to remaining fruit on vine.)

2) Decide if and when you should use a fungicide.

Why does one apply a fungicide? I believe that one applies a fungicide to protect our fruit from the parasitic plants (Fungi) that attacks our defenseless crop. This year when Sr. Mary Francis analyzed rots from hail infected marshes, she found that three types of fungus were present:

- 1) Penicillium
- 2) Alternaria
- 3) Trichoderma

The theory is that fungi are present anywhere, anytime, and if this is the case shouldn't we take the necessary precaution to protect our investment? To coat, if you will, our fruit with a type of defense to warn off any uninvited pests, or to stop its growth if it is present.

What about the timing of a fungicide application? If natural repair is already taking place **within hours** of a hail storm, when is application too late? Is it ever too early? Which fungicide is the most cost effective.

3) Fertilization

If a large percent of fruit is knocked off the vine, can we encourage the remaining pinheads or peas to marketable size by increasing our fertilization? What about nitrogen and the keeping quality of fruit remaining on the vine? Should we increase nutrient application to combat plant stress? Should we alter our present fertilization schedule due to crop reduction?

INFLUENTIAL FACTORS

WEATHER

Wind driven hail along with an accumulation of a blanket type layer. proved to be more harmful than a simple shower of frozen rain.

It is my belief that if we would have had hot, humid weather for a long period of time after the hail, we would have seen far more devastation than we did this past year.

VINE DENSITY

The more dense our beds, the more cushion we had and some of the lower fruit was unharmed. Less dense areas, new plantings, freshly mowed beds and renovated areas tended to be hammered. Is it because we were promoting growth in those areas? Growth with red tender shoots were easily severed.

STAGE OF DEVELOPMENT

Every stage of development has its own unique characteristics and sensitivities, each handled individually.

What is the impact of hail at early bud break?

If the theory that the lower three berries set and the others fail to set is true, what happens when the top hooks are severed from the upright? Will the lower hooks set fruit?

What about those pinheads or peas'? Let's say that the top three pinheads were knocked off, will the lower two or three mature?

VARIETY

The Ben Lear variety is historically not a keeper, does that make them a special target for hail stress?

What about those later varieties, that we know are lethargic in giving us the color incentives that we desire. If we are hit with hail and find that early harvest could be an option in retaining our crop, would those color incentives and maturity hinder that decision?

TYPES OF INJURY

SEVERING VINES:

Sharp, cutting hail stones sever runners and vines which causes any bud, blossom or fruit potential from that source to perish. I have observed that new plantings, or any area that shows lush growth and perhaps tender, thin vines tend to reveal more injury,

KNOCK OFFS:

Hail can knock fruit right off the vine, and if it does, we surmise that that berry is gone, unharvestable. Time is a factor in salvaging our crop, if the-hail hits a week prior to harvest we may retain a good portion of our fruit.

Just what does it take to knock a berry off the vine? In surveying marshes after a hail storm this year, I found berries **on** the vine that had been hit 7 to 8 times. While some fruit found on the bog floor showed only 1 bruise!

BRUISES AND SCARS:

Fruit that has been hit with these formations of ice, show an indentation where the stone has struck. By this mark we can measure the different size of the hail. Our **fruit starts to repair itself within hours** of stress. First a red ring appears around the bruise then a scar covers the injury. The first 24 to 48 hours are critical.

BREAKS IN THE SKIN:

In the field the first fruit to break down or show signs of decay are the berries that have a tear in the skin. Depending upon the diameter of the broken skin, the repair tended to be a slow process and some wounds were less apt to repair themselves than others. Perhaps fungi (parasitic plants) found this stress quicker and infiltrated, hence promoting rot.

BUD INJURY:

Two of the hail storms that I followed this year were on August 1 and August 29. I dissected hundreds of buds from different counties. To my surprise, generally speaking, I have found low levels of bud injury. I feel that the reason for this was because of our cool growing season. On August 1 and the 29, it was my observation that the buds were not as pronounced as they are in a "NORMAL" year, resulting in less injury.