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Ripening Fruit

1. Soluble Solids:

This is the movement of solids that are in the "juice" of fruit. They are products of fermentation.

Ethylene increases the enzyme called polygalacturonase (PG). The PG causes fermentation under the skin of the fruit and spreads from there. PG causes cell walls to collapse.

When the plant is under stress, the rate of fermentation increases. If temperature is warmer, the rate of fermentation increases. This is usually accompanied by a change in fruit color.

Fruit quality is always better when cool temperatures occur during ripening. The activity of PG decreases and fermentation occurs at a slower rate ... just like making better wine or brewing better quality beer ... slow fermentation rate.

Can we reduce this fermentation rate so that we have ...

- A longer harvest period.
- Better post-harvest storage
- Longer shelf life.
- Better tasting fruit.

Of course, we can do so, by inhibiting ethylene and/or activity of PG in the fruit.

How?

1. Apply ReZist about 4 weeks before harvest.
2. Apply one gallon per acre of CaB'Y Plus
 - A. 3 weeks before harvest
 - B. 2 weeks before harvest
 - C. 1 week before harvest.

Rapid fermentation begins about 3 weeks before harvest. This is the main period for control of ethylene and PG.

Why do most pineapple, tomato, and stone fruit people avoid this? Because it reduces soluble solids that result from fermentation. The fruit has high specific gravity. If soluble solids are desirable, the fruit can be treated with ethylene before it is sent to market ... and then placed in a water bath to absorb more water.



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Another reason that soluble solids are desired is because harvest weights are higher (10%). As fermentation occurs in the fruit, the fruit absorbs water from the plant. Then increases the weight of the fruit ... but at what cost?

2. Use of CaB or CaB'Y.

These products lower the PG activity of the fruit.

Results:

- Less fermentation in the fruit.
- Lower soluble solids that result from fermentation.
- Less harvest weight (ID) due to the lack of water accumulated from the plant by the fruit (osmotic absorption).

You can not have both ... high soluble solids and longer shelf life or less storage problems ... unless the fermentation rate is very slow. The use of CaB or Cab'y during the last three weeks before harvest will slow down fermentation.