



## STOLLER ENTERPRISES, INC.

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### **When Plants Becomes Susceptible to Both Insects and Diseases**

Plants will generally tell us when they are entering the stage of disease or insect susceptibility. We can clearly see the conditions if we watch closely how they grow. Following are the conditions of plant growth, which will normally determine the susceptibility to both disease and insects:

1. When there is vigorous shoot growth. When there is more distance between internodes. When a plant does not normally have fruiting buds or a lot of lateral buds.
2. When there is little or no growth on the above ground parts of the plant. This normally happens when the temperatures is higher than 90°F (31°C) or below 68°F (21°C). The problem tends to be more severe at higher temperatures for the loss of insect resistance and may be more severe at the lower temperatures for loss of disease resistance.

Why do the two above conditions make the plant more susceptible to insects and diseases? When one understands the language of the plant, it is very easy to see. But first, one must learn the language.

1. When this condition exists, the roots are demanding IAA for cell division. Most of the IAA is pulled downward out of the new meristematic tissue growth into the roots. This greatly dilutes the amount of IAA that is left in the above ground tissue. It simply moves out of the tissue into the roots which demand more IAA for normal cell division.
2. Under these two temperatures extremes, the plant does not have the ability to produce much IAA and therefore, there is very little new meristematic tissue growth. One can clearly see this when the plant is under stress. The sucking type insects attack the plant very vigorously. When the temperature cools down, and the plant is no longer under stress, the sucking insects tend to disappear.

From the above, one can clearly see that IAA is the hormone that protects the plant against both diseases and insects.

Concerning diseases: It is normally necessary for moisture to be on the outside of the plant tissue for the disease spores to germinate. Therefore, under periods of high humidity or high moisture, the disease will be more severe under any of the two above conditions.

The major question then is this, “When the climatic conditions predispose the plant to either to the above two environments, what do you do in order to help a plant protect itself?”

**Jerry Stoller**