Insect and Disease Resistance for Potato Plants

It appears that the potato plants resistance to both insects and diseases is determined by the amount of auxin that remains in the plant tissue. There are two conditions that exist where the plant has insufficient amount of auxin and thus exposes the plant to both insect and disease attacks.

1. Whenever a plant suffers from high temperatures and/or drought, there is insufficient auxin produced in the plant to protect it against insect attacks. It is during this period where sucking insects tend to attack the plant with increasing populations rapidly escalating. This is a simple matter to control. All that one needs to do is apply the auxin on the plant at 10-14 day intervals until the insects disappear. This will not only increase the plant's resistance to insect attacks, by also allows the plant to grow more normally, even in the present of high temperature and/or drought.

2. During the period when the plant grows too vigorously. Every potato grower knows that the problems of rapidly growing plants. During this condition, sugars are transferred upwards in the plant. They are not transferred downward to the tubers. This can be plainly observed by looking at the length of the stolon. During times of vigorous growth, the stolons will not appear or if they do appear, the length of the stolons is long before tuber initiation occurs. If adequate sugar is transferred down to the tubers, the amount of stolon formation is greater and the stolon length is much shorter.

During this period of rapid growth, the auxins move out of the terminal apical meristem tissue downward towards the roots. This leaves an insufficient amount of auxin in the various above ground tissues of the plant. It is during the period of rapid growth (accompanied by moisture) where disease infection is always the most significant. This will be true for any disease.

If one wants to protect the plant against either disease or insects, the application of auxin at regular intervals along with the application of Nitrate Balancer will maintain the optimum amount of auxin in the tissue in order to allow the plant to become more resistant to both disease and insects. This is important during both of the above growing conditions.

This is a very simple treatment. You already know that Nitrate Balancer will have an effect by itself. Also, you know that Nitrate Balancer will give more uniform sizing of the tubers. The addition of auxin to the Nitrate Balancer will even give better results and greatly increase the plant's protection against both insects and diseases.

The above observations can be made for any crop; not just potatoes. All crops tend to grow in the same type of manner. All crops are affected by the same type of weather conditions. Since we cannot control the weather conditions, it is simply good management by providing crop with enough auxin to show its maximum genetic expression even though climatic conditions may be unfavorable for the optimum plant growth.

Stoller Middle East