The Next Big Breakthrough in Agricultural Production

During the period of the last 70 years, most of our increases in crop production have been derived from plant breeding, the normal use of crop nutrition, and the increase in chemical pest controls.

During the last 10 years, we have had significant advances through genetic manipulation of plants in order to tolerate different chemical treatments and be more resistant to various pests and disease that attack these plants. We are now in a situation where the seed industry is continuing to come out, on a regular basis, with new genetical traits. These genetical traits are significantly altering the way that both crop nutrition and chemical usage is being applied to our crops.

All of the above advances have increased the genetic potential of plant yields and quality. Yet, the world agriculturalists are receiving only approximately 30% to 35% of the genetic potential of the ever-increasing prices of the seed that they plant.
There is a great distinction between the genetic capabilities (which are being genetically manipulated within the plant) and the expression of these genetics in order to obtain maximum yields.

The greatest genetic capability of our planted crops is the day the seeds are placed in the soil. Every day from that point on, we loose some of the genetic expression that is contained in that seed. Most of the loss of genetic expression is climatic related. Temperatures, moisture, and light determine the genetic expression of this tremendous genetic capability of our plants. Every day some of this genetic expression is lost. Rather than thinking about crop yield increases, perhaps it would be better if we thought about the reduction of genetic expression loss due to these climatic factors.

The next big breakthrough in agricultural production will be the treatment of plants so they are better capable of resisting the genetic expression loss due to environmental factors. In order to accomplish this, one must be able to understand the hormone balance of the plant and how the plant carries on photosynthesis and respiration during these periods of adverse climatic conditions. When one is able to apply this technology, the genetic expression will be more fully demonstrated from the plant's genetic capability.

When we learn to achieve the above (regulate the plant's response to climatic conditions), this should result in significant yield increases. The yield increases will not be in the magnitude of 5% to 10%. Nor will they be in the magnitude of 15% to 20%. It is reasonable to assume that if we can regulate the plant's genetic expression to climatic conditions, we should be able to achieve yields that are 30% or more greater than today's normal production.

Over the period of years, growers have expressed one common observation. "The yields of my crops are more dependent upon weather than they are any other factor of production."

We, as the Stoller Group, have been doing significant research and development into the above concepts. We have had a lot of help from retailers and consultants, worldwide, in investigating the potential possibilities. We feel that we are on the brink of achieving some very significant and consistent results.

We are now reasonably sure that we can control sucking insects through hormonal treatment of plants. This brings out the plant's natural defense mechanism against this significant class of insects.

We now feel reasonably sure that we can control plants against various disease organisms, if not all disease organisms. Again, this is a hormonal control of the plant's normal resistance against diseases.

We are now reasonably sure that we can lock in the genetic expression of plants when they are young. This will allow the plants to resist the harmful effects of climatic changes throughout the growing season.

We would like to have all forward thinking people who are interested in this technology to join forces with our company in order to explore the ability of the
plant to express itself and defend itself in the presence of the variable climatic or environmental changes that all plants experience.

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