

## Maximizing ROI by Reducing Yield Limiting Abiotic Stress

What are you doing to maximize the return on your investment in the genetic potential of the seed you purchased? There is little doubt with summer in full swing mother nature is working hard to limit your yield potential, her most effective tool, abiotic stress. As producers we try to control the things we can and leave the rest up to mother nature, but what if there was something we could do to reduce her negative impact?

Abiotic stress is the stress a plant experiences as a result of weather, such as extreme high or low temperatures, excessive moisture, drought, hail, damaging winds, nutrient deficiencies, and even lack of sunlight to name a few. It is estimated that abiotic stress accounts for losses in yield between 50% to 70%. Think about that for a minute, the genetic potential you purchased easily over half of your investment is lost due to abiotic stress. Consider this for a moment, if your seed investment on 1,000 acres of corn is \$100 per acre, \$100,000 total, over \$50,000 is a complete waste. The question is what can we do to reduce the negative impacts of these yield damaging costly events, more specifically how can we help our crops have greater tolerance for or resistance to induced abiotic stress?

Interestingly all excessive stress, increases the presence of a plant growth regulating hormone called Ethylene. Stress ethylene is a gas that is given off by damaged and dying plant cells. Due to its gaseous nature stress ethylene leads to damage of neighboring cells, all the way up to damage of neighboring plants. When this occurs healthy plants having to spend precious energy, that would otherwise be used to increase growth and productivity, to manage this stress ethylene, all at the cost of your yields.

When it comes to a plant's ability to tolerate abiotic stress events, it quickly becomes evident, plants with robust, actively growing root systems tolerate these stress events better. Why is this? It all ties back to another plant growth hormone called cytokinin. Cytokinin is produced in the growing root tips, and influences water and nutrient uptake, increases the speed and efficiency of photosynthesis, and is crucial for plant cell and ultimately grain/fruit development. The larger and more active the root growth a plant has, the more resources it can access, and the more energy or sugars it can produce, all leading to capturing greater yield and increasing the return on your investment in your seeds genetic potential.

### Abiotic Stresses



Lack of Moisture



Excessive of Moisture



Hail



Wind Damage



Nutrient Deficiencies



Herbicide Damage/Stress

Timac Agro has worked alongside growers for over 60 years, helping plants manage the abiotic stresses from nutritional deficiencies to drought, wind, hail, and everything in-between. As agriculture has made advancements and new challenges have risen, Timac Agro has always risen to the challenge, developing new innovative technologies to help growers across the world produce crops of the highest quality with greater yields. As we continue to experience the impacts of climate change, now more than ever, growers must discover new methods to help manage our crops ability to overcome the negative impacts of abiotic stress. One of the strongest tools for this is Timac Agro's Fertileader Gold. Fertileader Gold supplied nutrients our plant demand fortified with our patented Seactiv™ Complex, which will help plants not only survive through abiotic stress events but overcome these events, generating more bushels per acre, higher quality grains and fruits, and help growers maximize their return on their investment in both genetics and fertility programs. To learn more about how Timac Agro can benefit your crops contact your local Timac Representative today.

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