

# PGRs IN AGRICULTURE

## PGR - It's an acronym farmers are hearing more and more about, but what are they and how should they be used?

**PGR stands for Plant Growth Regulator.** PGRs are often known as plant hormones (also called phytohormones). They are signaling molecules produced within plants that occur in extremely low concentrations. Plant hormones control all aspects of growth and development from initiation of germination to production of seed and fruit to final plant maturity. They are needed in very small amounts but are critical to proper plant growth, yield potential and crop quality.

**Stoller has conducted extensive research over the past 49 years to gain an understanding of hormone activity in plants.** Stoller's research found the optimum ratios of the three major hormone groups required for maximum plant growth (cytokinin, auxin and gibberellin). This, along with an understanding of the need for specific plant nutrients in combination with these plant hormones at critical growth stages, is what led to the development of a season-long approach to optimizing plant growth and helping farmers maximize their yield potential. In perfect conditions, plants create all the hormones they need on their own. But, anything that stresses a plant can cause the ratios of phytohormones to get out of balance causing the plant to use valuable energy to correct this imbalance instead of building yield. There are five major hormone families in plants: auxins, gibberellins, cytokinin, ethylene, and abscisic acid. Having the optimum ratio of these hormones active in plants is critical to maximizing yield potential.

## NOT ALL PGRs ARE CREATED EQUAL

Using the right product with the right ingredients at the right rate and right crop stage is very important. Your Stoller representative can help you utilize these products properly. Stoller has been working with farmers for almost 50 years to help them build better plants using proven products backed by extensive global research.

Stimulate<sup>®</sup> Yield Enhancer Plus is an EPA registered product that has the optimum ratio of 3 growth promoting hormones for fast emergence and huge root development. Fortified Stimulate<sup>®</sup> Yield Enhancer Plus is also EPA registered and is the only biostimulant with a stable formulation of 4 essential plant growth regulators including cytokinin, gibberellin, and 2 forms of auxin (IAA for triggering plant growth and IBA for developing better yield characteristics). X-Cyte<sup>™</sup> is an EPA registered yield stimulant with cytokinin, critical for development of flowers and seeds, resulting in greater yield and test weight at harvest.

## One of the biggest yield limiters your crops face on a daily basis is weather stress.

Bio-Forge<sup>®</sup> Advanced is a specialized, non-PGR product that helps fight abiotic (weather-related) crop stress. Proper plant nutrition is also important to prevent yield loss. Harvest More<sup>®</sup> Urea Mate is a unique foliar or irrigation applied fertilizer that contains 11 critical nutrients for optimum growth.

Breaking through yield barriers requires daily attention to building better plants and maintaining hormone balance. PGRs are a useful tool that progressive farmers are using to achieve next-level yields.

Contact your Stoller representative today to learn how you can easily use PGRs in combination with your current production practices to build better plants and break through your yield barriers in 2020.

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