PGRs

Plant Growth Regulators

WHAT IS IT?

PGRs are naturally occurring substances:

- Able to stimulate, enhance, promote, increase growth and development of a crop;
- CFIA regulated through the Fertilizers Act;
- They are not pesticides and DO NOT required MRLs (Maximum Residue Limits);
- DO NOT affect the shipping and handling of the grains.

WHEN & WHY USE IT?

- PGRs enhance early season vigor and drive maximum root growth.
- They provide a consistent performance across a wide variety of crops and growing conditions.
- They are required at LOW application rates.

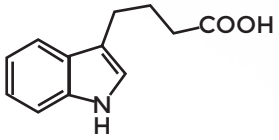
WHAT TO EXPECT?

PGRs are designed to be incorporated into a well-balanced nutrition program to achieve:

- Better nutrients uptake;
- Enhanced growth and development;
- Better seed/fruit/tuber set;
- Crop standability;
- Preserve yield and increase profitability.

Auxins (IBA, ...)

- Auxins are known to activate cell elongation by increasing the level of elasticity of the cell walls.
- Auxins stimulate ethylene production and inhibit the growth of buds. This effect is known as apical dominance.
- They also promote adventitious and lateral root growth and development.
- Auxins include 3-Indoleacetic acid (IAA), 3-Indolebutyric acid (IBA); 1-Naphthylacetic acid (NAA) among others.

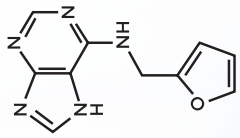


Cytokinins (Kinetin, ...)

- Kinetin is the only Canadian registered cytokinin that can be used on a variety of crop species.
- Kinetin is considered a “green” plant growth regulator.
- Kinetin increases the rate of cell division, differentiation and growth.
- It delays senescence in plant tissues, increases flower set, fruit formation and side branching.
- Kinetin also increases flower set, fruit formation and side branching.

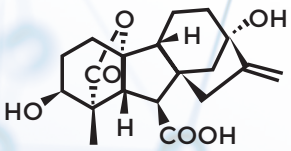
2 effects depending on application timing:

- Early (3-5 leaf stage): increases the number of seeds per kernel/pod
- Late (during reproductive stage & prior to grain fill): increases the Thousand Kernel Weight (TKW) and seed size



Gibberellins (GA3, ...)

- GA enables seed to overcome dormancy and promote the activity of the a-amylase, sprouting and emergence.
- GA affects cell elongation.
- GA can increase seed and fruit set when applied appropriately.



Others

- Ethylene *aka* the senescence and ripening PGR.
- Abscisic acid *aka* dormin or dormic acid that encourages dormancy and controls stomata opening and water-use efficiency under stress conditions.
- Brassinosteroids involved during the reproductive stage of certain plant species.