

# MPUMALANGA EXTENSION MATTERS

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## Impact of waterlogging on sugarcane

Waterlogging is a recognised stress factor in sugarcane. It occurs when soil is excessively wet and unable to absorb more water. It triggers various survival and adaptation mechanisms inside the plant. Some varieties can tolerate waterlogging lasting about a week followed by good drainage. Longer episodes can give rise to serious stress situations and impact cane yield negatively.

### Visual symptoms of stress due to waterlogging can include:

- Blackening and rotting of the root system (due to an oxygen-deprived soil environment).
- Leaf rolling and the yellowing and drying of older green leaves – also seen in younger leaves. Just as in a drought, the inability of the roots to take up water and transport nutrients, can lead to deficiencies in the plant.
- Aerial root formation on the stalk due to changes in plant hormone levels.

### Ripener decision-making under waterlogged conditions

- Under waterlogged conditions, limit the use of the PurEst® application to only assessing the brix gradients within the stalks. Steep brix gradients, in combination with long upper internodes and 8 or more green leaves, are indicators of suitability for ripening.
- Under waterlogged conditions, using the PurEst® recommendations to decide on a chemical ripener treatment choice, could become unreliable.
- Because of significant shifts in the balance between plant hormones, the use of hormonal mode-of-action ripeners like Ethephon and trinexapac-ethyl (Moddus® or Tripac®) are not recommended in waterlogged crops.
- For the same reason, the use of combination (piggyback) treatments is not recommended in waterlogged crops.
- This limits chemical ripener choice to fluazifop-p-butyl (e.g. Fusilade Forte®, Volley® or Orca®) in waterlogged crops that meet the required visual appearance criteria.



If there is a good chance that the harvest date will have to be delayed, then spraying should also be delayed, and the condition of the crop should be reassessed shortly before the new spray date, to determine suitability for ripening.