Epigenetics opens new pathway to producing climate-resilient crops

Genetic manipulations such as RNAi silencing and CRISPR are helping researchers and plant breeders enhance traits and characteristics.

The genomic mapping of corn, soybean, wheat and oat creates more opportunities to improve plant growth and desired properties in those crops.

Epigenetics could give plant breeders the ability to make crops more resilient to environmental stressors more quickly without sacrificing yield.

But what could be accomplished if researchers could effectively “read the minds” of plants and gauge their inherent abilities to respond to stresses around them?

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Rather than altering the genetic code itself, epigenetics studies the changes in organisms caused by modification of gene expression.

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Genetically, nothing has changed in the plant, only the mechanism for how it reacts has been altered. The potential is extraordinary. Not only would growers benefit but this new branch of science could quell consumer and export concerns about genetic modifications and even enhance trade.

“Now, imagine a new pipeline where current companies are putting out the very best variety they have, and it goes into this epigenetic pipeline and comes out the other end with the same combination of genes,” says [Director of the Plant Institute at Pennsylvania State University Sally] Mackenzie.

This is an excerpt. Read the original post here