

Newly discovered stem cell pathway in plants could be manipulated to increase crop yields

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Biologists at Cold Spring Harbor Laboratory have made an important discovery that helps explain how plants regulate the proliferation of their stem cells. The discovery has near-term implications for increasing the yield of maize and many other staple crops, perhaps by as much as 50%.

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[The new pathway] could act as a kind of environmental sensor, telling totipotent stem cells in the meristem to stop proliferating — a brake, applied from the older, more developed parts of the plant, for example in response to environmental cues such as available light, nutrients or moisture. Jackson and colleagues identified the receptor for these “braking signals from the leaves” in cells in the lower part of the meristem. They named the receptor FEA3. . . .

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. . . [W]hen Jackson’s team performed a genetic trick, growing plants with so called “weak alleles” of the FEA3 gene. . . This . . . gave rise to a modest, manageable increase in stem cells, and to ears that were significantly larger than ears in wild-type plants.

Read full, original post: [New stem cell pathway indicates route to much higher yields in maize, staple crops](#)