

Selective breeding for shorter plant stems contributed to 'Green Revolution' yield gains

Untangling the genetics that control and regulate the yield of a crop is a complicated, but potentially rewarding puzzle. High-yielding dwarf varieties of wheat and barley were developed in the 1950's and 60's, during the "green revolution" when plant breeders selected for mutations that were short-stemmed.

Plants with shorter stems are less likely to fall over in the field, and as a result greater yields are harvested. These new variants, of crops such as barley, wheat, and rice had the beneficial shorter stems, but inadvertently also included another important trait that reduced the potential yield of the crop.

Professor Robert Sablowski and his team at the John Innes Centre study the role of DELLA proteins, which cause a range of growth responses in plants. It was mutations of the DELLA genes that the breeders of the green revolution were selecting for in their efforts to increase yield through reduced stem length.

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This breakthrough means that plant breeders can now select for new mutations that separate the desirable and undesirable traits conferred by DELLA proteins – short stemmed crop plants with larger meristems. Successfully selecting for both would increase the potential crop yield, helping to address global food security challenges.

[Read the full study [here](#) (behind paywall)].

The GLP aggregated and excerpted this article to reflect the diversity of news, opinion and analysis. Read full, original post: [Green revolution genes promise additional yield](#)