



LSP Myth Buster #6

An ongoing Land Stewardship Project series on ag myths & ways of deflating them.

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Myth: *Genetic engineering is the only viable method available for improving food crops.*

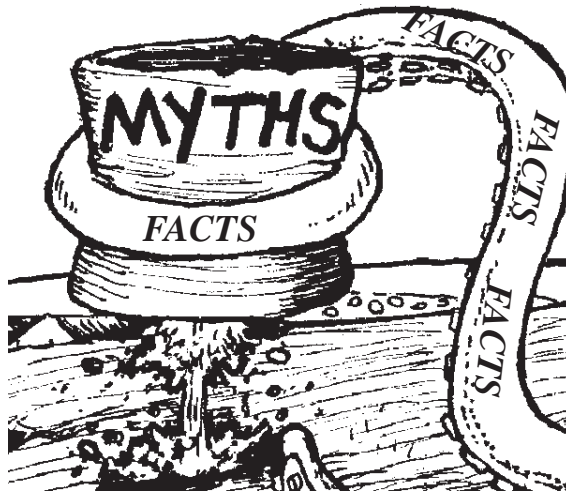
Fact:

Long before the first gene jockeys shot daffodil DNA into rice, people were using traditional plant breeding to make crops more productive and nutritious, as well as pest and drought resistant. Such traditional breeding methods, which consist of crossing related plant species (sometimes a domestic line with a wild cousin) and waiting for the desired characteristics to emerge in later generations, are not as controversial as genetic engineering. Unfortunately, they also have a reputation for being slow and imprecise. But in recent years, advances in “smart breeding” have shown that some pretty exciting traits can emerge in a plant without the use of genetic engineering. The foundation of this type of breeding is an intimate knowledge of the plants themselves. Credit for that knowledge partially goes to biotechnology—one offshoot of this discipline is the extensive mapping of plant genomes and the development of supercomputers that can handle all that information. Smart breeders have been studying that information to determine what dormant characteristics a plant may already contain.

“Rather than inserting, say, a bacteria gene to ward off pests, it’s often possible to turn on a plant’s innate ability,” writes Richard Manning in the May 2004 issue of *Wired*

magazine. Smart breeders are searching gene banks and finding vitamins, antioxidants and other dormant characteristics that could possibly be “turned on.”

Because no new traits are being added to the plants, these improved lines cannot be patented—a major relief for farmers and public plant breeders who are finding an increasing share of our germplasm is being locked up by life science companies like Monsanto. According to Manning, smart breeding is also a lot quicker and cheaper. For smart breeding to work, knowing a plant’s gene map is not enough—scientists also need to have access to all the various lines of wheat, corn, tomatoes, etc., that are out there. One never knows when a plant variety that seemed useless, say, in 1904, may suddenly become invaluable as a source of a certain dormant characteristic. That means the saving of seeds and their proper storage is critical.



More Information

◆ To read Richard Manning’s “Super Organics” article in *Wired*, visit www.wired.com/wired/archive/12.05/food.html?tw=wn_tophead_4.

◆ For a free pdf copy of the special Land Stewardship Project report, “Public Seeds—Public Goods,” log onto www.landstewardshipproject.org/pr/04/newsr_040228.html.

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This Myth Buster is brought to you by the members and staff of the Land Stewardship Project, a private, nonprofit organization devoted to fostering an ethic of stewardship for farmland and to seeing more successful farmers on the land raising crops and livestock. For more information, call 651-653-0618 or visit www.landstewardshipproject.org.