



Food Security

PHOTO: TRISH MOORE

Breeding Better Beans

Edible beans like kidney, pinto, lima and green beans are affordable sources of protein, fiber, and micronutrients. Beans also promote soil health and require less nitrogen fertilizer than many other crops. Agricultural Experiment Stations nationwide work together to develop high-yielding bean varieties with enhanced nutritional content and resistance to stresses such as pests, disease, and drought. Additionally, education efforts are informing growers. In **North Dakota** and **Nebraska** alone, Extension educators reached about 5,000 bean growers over the past five years.

Successful examples include:

- University of **Nebraska** researchers were among the first to test environmentally-friendly alternatives to copper-based compounds for managing bacterial disease in dry beans. They are also evaluating new fungicidal products and application methods for root diseases, rust and white mold.
- For the health of it, scientists at **Colorado** State University found that beans contribute to weight loss and visceral-fat reduction. In **Nebraska**, they showed that pinto beans could lower cholesterol. Other land-grant university research shows that beans can reduce inflammation, which is tied to heart disease.
- **Michigan** State University researchers along with those in Nebraska showed that bean pastas have more protein and minerals than wheat pastas. In a survey, 36% of consumers indicated they would buy bean pastas.
- **Iowa** State University scientists studied bean consumption patterns, shedding light on ways to increase the eating of beans.
- Pinto beans that don't darken quickly after harvest are the development of researchers at **North Dakota** State University. These new varieties yield better, have a more appealing color and size, cook faster, and are higher in iron than previous slow-darkening varieties.
- Researchers at **Nebraska**, and the universities of **Delaware**, **Puerto Rico** and **Wyoming** developed bean breeds resistant to drought, heat and flooding.

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- Research at **Colorado** State University, **Oregon** State University, **Washington** State University and at the universities of **Wisconsin** and **Wyoming** is developing and testing popping beans which have the potential to be a convenient and healthy snack food.
- Cornell University scientists in **New York** developed kidney beans with better shape and size.