



ARS releases eight new dry-seed legumes for commercial use, including first-ever winter-hardy peas

USDA, Agricultural Research Service, Grain Legume Genetics and Physiology Research Unit

The U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) during fiscal year 2021 released eight new varieties of dry-seed legumes for commercial use, completed a commercial license for one variety and was in the process of negotiating another.

These achievements by the USDA-ARS Grain Legume Genetics and Physiology Research Unit in Pullman, Washington, add to the unit’s successful record of developing and releasing new varieties of pulse crops (which include chickpeas, dry beans, dry peas, and lentils) that have been commercially adopted.

Pulse crops have been important contributors to human nutrition and sustainable agricultural productivity for thousands of years. More than 3.4 million acres of these crops were harvested in the U.S. in 2020, with a total production value exceeding \$1.4 billion. In the Pacific Northwest and Northern Plains, rotating pulse crops and small grain crops on the same land can improve the amount and quality of grain harvested. The pulses reduce the risk of diseases associated with several small grains and help control grassy weeds. In addition, pulse crops produce their own nitrogen, which helps to fertilize subsequent small grain crops.

New varieties of pulse crops are needed that have improved field traits, such as yield and disease resistance, and are also robustly characterized for nutritional qualities. In particular, new winter-hardy pulse varieties are needed that can be planted in the fall and rotated with winter wheat or winter barley crops.

The new varieties of pulse crops released by USDA-ARS in FY 2021 included:

- one small green lentil variety (USDA Sage),
- two pinto bean varieties (USDA Basin and USDA Rattler), and
- two new varieties of spring-sown yellow peas (USDA Kite and USDA Peregrine).



Above: Pulse varieties, released and commercialized

Most importantly, three new varieties of fall-sown peas were released including two fall-sown green pea varieties (USDA MiCa and USDA Dint) and a new fall-sown yellow pea variety (USDA Klondike). These are the first food-grade fall-sown pea varieties released by the USDA-ARS and will provide producers in the Pacific Northwest and Northern Plains with an alternative fall crop option other than wheat and barley.

Although most of these new varieties are “publicly released,” some have been protected through Plant Variety Protection Certificates (similar to patents) and licensed to grower and farmer cooperatives.

During FY 2021, the USDA-ARS completed a commercial license with the Washington State Crop Improvement Association for a recently released chickpea variety (USDA Quinn), and is actively negotiating a commercial license for a recently released pinto bean variety (USDA Rattler).

Plant Evaluation Material Transfer Research Agreements for USDA-developed pulse crops are also in effect with Washington State University, South Dakota State University, University of Idaho, and Montana State University. ☼