

# New Peas Unfazed by Viral Bully

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ARS researchers have identified dry pea breeding lines that can tolerate the pea enation mosaic virus (PEMV)-a "scourge" of Pacific West pea. Photo courtesy of USDA-GIPSA.

(PhysOrg.com) -- Four advanced dry pea breeding lines that tolerate the pea enation mosaic virus (PEMV) -- a "scourge" of Pacific West pea crops -- have been identified by Agricultural Research Service (ARS) scientists.

Use of the breeding lines PS08-39, -41, -68 and -76 to develop new commercial cultivars could give growers added insurance against PEMV. Currently, there are no PEMV-resistant dry [pea](#) cultivars. The few fresh pea cultivars that are resistant all contain the same single dominant gene—the En gene—for resistance, raising concern the virus could quickly evolve virulent new forms to overcome it, note Richard Larsen and Lyndon Porter, plant pathologists with the ARS Vegetable and Forage [Crops](#) Research Laboratory in Prosser, Wash.

The PS08 lines, however, somehow tolerate the virus' presence, even at high concentrations, without sustaining significant damage, loss of growth or seed yield. Because of this plant- pathogen “truce,” PEMV may be less apt to turn more virulent than it would with resistant varieties. Plus, the resistance-conferring En gene may cause “yield drag,” whereby the plants lose some of their yield at the expense of viral protection.

PEMV is transmitted to peas, as well as to chickpeas and other legumes, by aphid feeding. But spraying insecticide to prevent such feeding isn't always effective. In affected plants, PEMV disease symptoms include stunted growth, translucent veins, blisterlike lesions, deformed pods and reduced yield.

However, in field tests at Corvallis, Ore., and in greenhouse tests at Prosser, the PS08 lines sustained their growth and yield despite infection by the virus, reports Larsen. He and Porter presented a poster paper on their findings at the American Phytopathological Society's annual meeting in August in Portland, Ore.

In related work, Larsen and ARS colleague Claire Coyne at Pullman, Wash., teamed with researchers in New Zealand to show that PEMV is not seed-transmitted in pea, correcting an earlier published report that has resulted in costly testing of pea exports to the island country, a key winter seed increase nursery for U.S. seed companies.

Provided by USDA Agricultural Research Service

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