

Factors in berry-splitting in blueberries examined

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U.S. Department of Agriculture (USDA) researchers and a university colleague have found several factors involved in blueberry splitting, a significant problem that can cause losses of \$300 to \$500 per acre.

Splitting and cracking occur in southern highbush and rabbiteye [blueberries](#) if they receive preharvest rainfall when fully ripe or approaching ripeness, according to scientists with USDA's Agricultural Research Service (ARS). ARS is USDA's principal intramural scientific research agency.

ARS horticulturist Donna Marshall, retired horticulturist James Spiers and [geneticist](#) Stephen Stringer at the ARS Thad Cochran Southern Horticultural Laboratory in Poplarville, Miss., and University of Southern Mississippi associate professor Kenneth Curry collaborated on the research studies published in [HortScience](#).

In the first study, published in 2007, the researchers developed a laboratory method to model rain-related splitting in blueberries. Many blueberry breeders throughout the country are using this method to more vigorously screen [cultivars](#) and selections for splitting susceptibility. The results from field and laboratory tests showed that the rabbiteye cultivar "Premier" has the lowest incidence of splitting, while widely grown cultivar "Tifblue" exhibited a high incidence of splitting.

Marshall and her colleagues also investigated the correlation between splitting susceptibility and fruit firmness. Laboratory and field tests

proved that, in general, firmer fruit has a higher tendency to split. But one selection, named "MS614," exhibited extreme firmness and splitting resistance. The results, published in 2008, suggest that breeders who select for firmness may inadvertently also be selecting for splitting. But the laboratory [screening method](#) Marshall and colleagues created has helped remedy this problem.

The most recent study, published in 2009, evaluated water-uptake thresholds in split-resistant "Premier" and split-susceptible "Tifblue" fruit at all stages of development. The researchers harvested and weighed the fruit, then soaked it in distilled water at room temperature for 24 hours. They found that "Premier" absorbs more water than "Tifblue," yet remains intact and experiences minimal splitting. According to Marshall, the studies show that splitting is a cultivar-specific problem.

More information: Read more about this and other blueberry research in the May/June 2011 issue of Agricultural Research magazine.

www.ars.usda.gov/is/AR/archive.../blueberries0511.htm

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