

ARS Blueberry Research: Good for Farmers, Great for Consumers!

Got the blues? Apparently, an increasing number of Americans do. Indeed, we're buying more blueberries than ever before. On average, each of us ate over a half-pound of blueberries in 2004—more than double the U.S. blueberry consumption during the 1980s.

ARS research is helping to meet this rising demand, which is being spurred in large part by exciting research findings on the berries' health benefits. These little blue gems, chock-full of good-for-the-body phytochemicals, are being studied for their potential to stall aging, boost brain power, lower cholesterol, and much more.

We already know they're a rich source of vitamin C, potassium, and fiber. But ARS researchers at several laboratories across the country are delving even deeper into the blueberry to see what other health-promoting, disease-fighting components lie within.

For instance, ARS chemist Agnes Rimando, who works in the agency's Natural Products Utilization Research Unit at Oxford, Mississippi, recently found that compounds in blueberry skins can lower total cholesterol levels in rats. Ronald Prior, an ARS chemist with the Arkansas Children's Nutrition Center in Little Rock, is trying to pinpoint the exact serving size needed for blueberries to deliver truly protective, disease-defying effects in humans.

And ARS-funded researchers—including James Joseph of ARS's Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University, Boston, Massachusetts—are exposing blueberries' many brain benefits. One recent finding: rats fed a blueberry supplement did better at performing cognitive tasks.

With good news about blueberries spreading almost daily, how will U.S. growers keep up with rising demand? ARS researchers have several answers, in the form of new varieties and sustainable growing practices. These solutions can enhance blueberry production across the country—from familiar blueberry-growing territories such as Maine and Michigan, to new and unexpected blueberry fields sprouting up in Mississippi, and even to test plots in Hawaii.

As you can read in the story on page 4 of this issue, it was ARS research that first brought commercial blueberry plantings to the Gulf Coast states. For more than 30 years, scientists at our Southern Horticultural Laboratory in Poplarville, Mississippi, have been turning out high-quality blueberry cultivars for southern growers. Some recent releases are described.

Their research has helped these growers—many of whom own small farms—capture a share of the early-season blueberry market. And U.S. consumers gain access to the earliest possible picks of the spring season.

Stomping out blueberry diseases is also an integral part of ARS's Poplarville research. Plant pathologist Barbara Smith, who often meets with growers across Mississippi, has investigated many nonchemical and cultural methods for quelling the humidity-driven fungi that might otherwise spoil a bountiful blueberry crop.

In Maine, the country's No. 1 source of wild blueberries, ARS soil scientist Gordon Starr is looking at how irrigation can increase blueberry yields. Starr works at our New England Plant, Soil, and Water Research Laboratory in Orono. In one study, he's collaborating with Wyman's, the largest U.S. supplier of wild blueberries, at one of their inland locations.

That's because while Maine's coastal blueberries often receive sufficient moisture from fog, many of its inland farms suffer long dry spells. Finely tuned irrigation methods offer one of the easiest ways to enhance production, Starr is finding.

Head west to Hawaii, where ARS and university researchers are discovering the best ways to grow sweet, plump blueberries in the sunny Island State. Admittedly, Hawaii's balmy climes may seem an odd fit for what's still largely thought of as a cold-loving plant. But ARS research horticulturist Francis Zee, at the U.S. Pacific Basin Agricultural Research Center in Hilo, convinced colleague Kim Hummer, curator of the Corvallis, Oregon, ARS National Clonal Germplasm Repository—

home of America's official blueberry collection—and University of Hawaii-Manoa professor Wayne Nishijima to pursue the possibility of growing highbush blueberries commercially in Hawaii.

The scientists found that the colorful fruit does indeed have strong potential as a high-value, niche-market crop for Hawaii. That's good news for growers—including those who own small, family-run operations and want to add something new to their harvests. At local supermarkets or farmers' markets, Hawaii-grown berries could augment the fruit that's air-freighted from the U.S. mainland. And backyard gardeners might also want to try their hand at raising blueberries. Though small in scale, the test was likely the most-detailed yet conducted in Hawaii on how to grow blueberries there. It also served as the springboard for a larger, university-led study.

Highbush blueberries are native to North America and have been a source of both food and medicine for centuries. Who could have predicted that today we would still be unlocking new secrets about this remarkable fruit.

Judith St. John

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PEGGY GREB (D985-1)



DeSoto, a new blueberry released by ARS.