



Apricots!

Delectable Fruits of California Research

The sweet, delicate flavor and enticing aroma of freshly picked apricots make this fruit a spring and early summer favorite. The impressive array of delicious apricots in your supermarket results in part from ongoing research by ARS scientists at two California laboratories.

Geneticist Craig A. Ledbetter breeds tasty new apricots. He's based in central California at Parlier—near Fresno. Charles J. Simon, geneticist and research leader, curates the nation's official collection of apricot trees from around the world. He's stationed in northern California at Davis, just outside Sacramento.

Ledbetter and colleague Louis Vuittonet recently developed a juicy new apricot they've named "Apache." Its freestone fruit—about

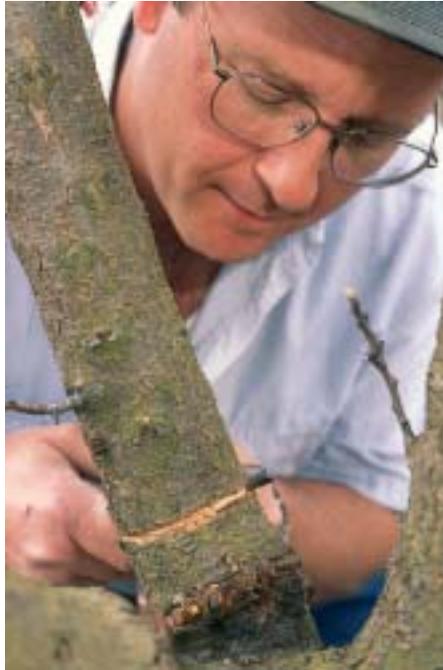


average in size—has an attractive pinkish-orange skin. Inside, the orange flesh is smooth and finely textured.

Apache ripens earlier than any other ARS-developed apricot. Ready to harvest in the first week of May, luscious Apache apricots are bound to be a hit, "especially with people who've waited all winter for the taste of a tree-ripened apricot," Ledbetter notes.

To form fruit, Apache needs pollen from other kinds of apricot trees. But that isn't a problem for growers. Popular apricot varieties like Katy and Castlebrite are excellent sources of pollen for bees to carry to Apache flowers. The researchers are now determining precisely how many of these pollinator trees are needed and how close to Apache they must be planted.

PEGGY GREB (K10432-1)



A girdling treatment applied by geneticist Craig Ledbetter to an Apache apricot branch shortly after bloom will enhance fruit earliness and increase fruit size.

Apache Added to Genebank

Apache ships and stores well and is likely suitable for growing in any state where commercial apricot orchards are already established.

It was Ledbetter who crossed, or hybridized, two parent apricots, yielding the first Apache tree. That eventually led to more than a decade of research. During that time, Ledbetter and Vuittonet evaluated hundreds of experimental Apache trees in commercial and research orchards in central California. They scrutinized thousands of individual Apache fruits from those trees. The team made budwood—for grafting—available to breeders and nurseries for the first time last year. Today, budwood is still

available seasonally from Ledbetter and also from geneticist Simon at the Davis genebank.

Formally known as the National Clonal Germplasm Repository for Fruit and Nut Crops, the genebank is a living collection of plants. It is one of a nationwide network of ARS-managed genebanks that safeguard cultivated plants and their wild relatives for the future. (See related germplasm article on page 20.) These might otherwise be lost when orchards or fields are paved over or when new varieties replace older ones.

Treasures at the Davis genebank include apricots from Russia, Poland, Kazakhstan, Turkey, Nepal, Pakistan, South Africa, and about a dozen other countries. Some of these specimens have

PEGGY GREB (K10431-1)



Craig Ledbetter examines bloom progression on a branch of an Apache apricot tree.



CRAIG LEDBETTER (10487-1)

names as exotic as their origins, like Janjir, Khubani, Chaksa, Min-Dze-Sin, and Luizet.

Orchard Boasts Dozens of Varieties

About 150 different kinds of apricot trees are growing in the genebank's orchard. It's located in Winters—a short distance from curator Simon's offices and labs. These trees range in age from only a year to 20 or older. Though the trees could grow to 30 feet, genebank staffers keep them pruned to a more manageable 20 to 25 feet.

Most are varieties of *Prunus armeniaca*, the species most widely planted in the United States. "About five other species of *Prunus* are thought to be apricots," explains Simon. "Of these, probably the most interesting is the Japanese apricot, *P. mume*. If you look it up in a gardening book, you'll see it described as 'a flowering ornamental.' Fresh mume fruit are sour, but in Japan they're pickled to eat as a snack."

The genebank also includes a backup collection of apricot trees growing in 5-gallon pots inside a fully screened enclosure. "*Prunus* species tend to be a little bit more delicate," comments Simon, "so they need the protection of our greenhouse."

Growers—and breeders such as Ledbetter—use the collection. Along with hobbyist fruit growers and others, they donate new specimens. The genebank is the largest publicly available assemblage of apricots in the United States.

Superbly Sweet Pakistani Apricots

Among the genebank's most prized specimens are apricots collected by

renowned plant explorer Maxine M. Thompson on her 1988 expedition to Pakistan. Grown from the soft seed that's hidden inside an apricot's tough pit, or stone, the Pakistani fruit is "incredibly sweet," reports Simon. "This helps compensate for the fact that some of the trees have 4-inch thorns that make them a bear to work with."

Geneticist Ledbetter, who obtained some of these apricots from the genebank, has found that the Pakistani trees don't thrive in central California's climate. To overcome that problem, he's bred them with hardy California apricots. His work has yielded a new generation of vigorous trees. Their fruit is even sweeter than Apache. Ledbetter expects to have at least one of these super-sweet apricots ready for growers and nurseries within a few years.

California growers produce nearly all of this country's apricots. Most are sold as soft, chewy, dried fruit. Others are targeted for fresh-market sale or are canned, frozen, or pureed.

Fresh apricots are low in calories and sodium. They provide several essential nutrients, including vitamins A and C.

Whether fresh or dried, apricots lend flavor and texture to traditional fare such as jams, coffee cakes, pies, and glazes for grilled or roasted meats. They also add zest to newer cuisine such as apricot-blueberry muffins, southwestern apricot salsa, or warm apricot-onion vinaigrette on chilled chicken salad.—By **Marcia Wood, ARS.**

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During the early flowering of apricot, Craig Ledbetter emasculates flowers in preparation for hybridization, the first stage of creating new seedlings in the apricot breeding program.

on the World Wide Web at www.nps.ars.usda.gov.

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