

**Pistachio** *Pistacia vera* L.

## Protecting a \$500 million crop

Pistachio is the third most important nut crop produced in California (behind almonds and walnuts) with more than 112,000 acres in production and another 60,000 acres planted but not yet producing. The California crop is worth more than \$500 million annually but suffers from a classic case of genetic vulnerability. More than 99 percent of pistachios grown in California are produced from a single female cultivar, **Kerman**, pollinated by a single male cultivar, **Peters**. Under such conditions, an unknown disease or insect could potentially destroy the entire crop.

In 1989, a breeding program was initiated by Dan Parfitt in the pomology department at UC Davis and Joseph Maranto, a UC Cooperative Extension county advisor stationed in Kern County. After Maranto retired, Craig Kallsen replaced him as farm advisor and continued on with this project (funded by the California Pistachio Commission from 1989 to 2000.) Based on superior performance in replicated

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trials, two female cultivars, **Golden Hills** and **Lost Hills**, and one male cultivar, **Randy**, were released.

The new female cultivars



Machines now assist in harvesting pistachios, the third most important nut crop grown in California.

flower earlier and perform better than Kerman under low chilling conditions. Both have significantly higher percentages of split nuts (a desirable consumer characteristic) and marketable yield, and they ripen a few weeks earlier than

Kerman. Extension of the harvest season permits more efficient use of labor and equipment. Golden Hills shows decreased tendency for

alternate bearing than Kerman.

Both cultivars have a more uniform maturity than Kerman, which suffers from irregular maturation, requiring multiple harvests. Lost Hills also has a larger nut than Kerman, but a higher percentage of loose shells (the kernel separates from the shells during processing).

An early-flowering male cultivar was selected to serve as the pollinator for Golden Hills and Lost Hills. Randy blooms about one week earlier than Peters and does not appear to be affected by low-chill winters. Pollen viability is much higher than for Peters and once shed, the pollen is more durable. The release of these new cultivars should help protect the pistachio industry from genetic vulnerability.