Almond 'Yorizane' - Self-fertile

USDA-ARS Crop Diseases, Pests, and Genetics Research Unit

Almonds, one of California's top agricultural commodities, are a historically outcrossing crop requiring significant cost to pollinate. In 1996, USDA-ARS plant geneticist Dr. Craig Ledbetter started breeding almonds with a goal of developing self-fertile varieties. This started with a self-fruiting cultivar called 'Tuono' and led to the eventual development of 'Yorizane,' released in 2021. Adoption of this new cultivar will lead to a drastic reduction in the need for pollination services, providing a large cost savings for the almond industry.

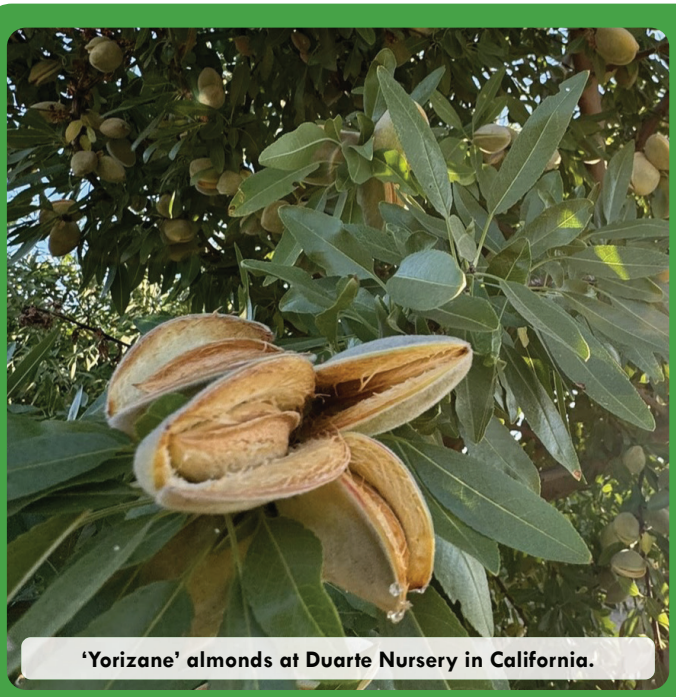

Photo by Duarte Nursery

'Yorizane' almonds at Duarte Nursery in California.

PROJECT GOALS

- ✓ Introduce a high-quality, self-fertile almond to reduce industry reliance on migratory pollination services

Problems Addressed

Almonds, ranked as one of the top ten crop commodities that the U.S. specialty crop exports, grossed more than $4.6 billion in 2022. Most of the almonds in cultivation today are self-sterile, requiring a second almond cultivar and an abundance of imported bees to ensure successful pollination and a sufficient yield of fruit. Pollination services account for at least 15% of almond growers' operational costs annually. Incorporating the pollinizing trees into orchards requires field space and careful labeling to ensure the pollinizer nuts are not mixed in with the fruit from the desired cultivar.

Solutions Developed

Dr. Craig Ledbetter saw the potential for self-fertility in 'Tuono', an accession of Spanish almond at the National Clonal Germplasm Repository in Davis, California; however, this accession lacked some favorable traits to compete with the self-sterile market standard, 'Nonpareil.' After 25 years of breeding, 'Yorizane' is now ready for commercial production. It shares an overlapping bloom period with 'Nonpareil', as well as a comparable yield. 'Yorizane' ranked highly in sensory panels for both texture and appearance, indicating that its kernels are ideal for current market preference.

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