



ACE RESEARCH PROJECT

Architectural Studies (PFR)

Importance

The architectural studies trial aimed to identify almond cultivars suitable for intensive production systems, particularly those naturally forming the desired tall "slender pyramid" shape. Trees in the trial were allowed to grow for three seasons without pruning or heading at planting, allowing for observation of their natural growth and fruiting habits. These observations helped breeders at the University of Adelaide select higher productivity genotypes suitable for high-density orchards in the early stages of the breeding pipeline.

Features

The trial, planted in 2018, included the control variety Nonpareil, as well as 15 genotypes, including six new cultivars released from The University of Adelaide breeding program. The trial covered a range of densities from Horizon 2 to Horizon 3, using the Garnem rootstock. The trial concluded in 2022, providing valuable insights into the best-suited almond cultivars for high-density orchards with desired architectural shapes.

Results (Completed, 2022)

The most promising genotype, R36 T212, exhibited a narrow tree shape with relatively few upright scaffold branches, each having a mix of spurs and short to medium shoots. Although these trees produced moderate crops of 1.72 t/ha in their fourth leaf, their compact footprint suggested that yield per hectare could be increased by planting them at 2m spacing, thereby increasing the number of trees per hectare. Propagation of trees from this genotype was planned for a new high-density, intensively managed "fruiting wall" growing system to be planted at ACE.