

APPLES



Modern apple orchard planning

The most important step in orchard establishment is the planting plan. Profitable operations use the varieties, rootstocks, and planting densities that match the orchard site, equipment and grower commitment.

Planting density and tree management have the greatest effects on orchard efficiency. Density is the number of trees per unit of land (trees/acre). As density increases, so does the intensity of management. High density orchards (500+ trees/acre) on dwarf rootstocks require a high level of grower commitment, with a premium on timely tree training and pruning, water management and overall crop management.

Tree density should be designed to provide the maximum bearing capacity per acre with the least land waste. Trees should be spaced so that at maturity they will touch but not crowd, with space for machinery to move freely through the orchard.

The primary factors affecting mature tree size are variety vigor and rootstock size control. Other factors affecting mature size are climate, soil fertility, length of growing season, available water and light intensity.

Today, growers are carefully examining each of these factors and choosing varieties and rootstocks that match their management style and orchard site. Most of the orchard evolution from seedling to dwarf rootstocks has been linked to the financial benefits of high density orchards. The precocity of dwarf rootstocks has brought orchards into production 3-5 years faster than semi-dwarfs, allowing a quicker return on capital investment. Increases in tree density have produced increased returns per acre in the early years as well, since tree density is the single most important factor in early production. Since choosing the proper rootstock and scion variety is a key for desired density, the next sections will focus on how these variables affect the mature size of a tree and the planting density.

Variety Vigor Comparisons

Very Low Vigor

Red Delicious
(All varieties)
Starkspur® Winesap

Low Vigor

Honeycrisp™
Snowsweet®
Starkspur® Arkansas Black
Starkspur® Red Rome Beauty

Moderate Vigor

Blondee™
Candycrisp®
Dandee Red®
Empire (All varieties)
Fireside
Golden Supreme®
GoldRush
Liberty
Macoun
McIntosh (All varieties)
Pristine®
Ruby Jon®
Stark® BraeStar™
Stark® Jon-A-Red® Jonathan
Stark® UltraRed™ Jonathan
Zestar!®

Moderately High Vigor

Gala (All varieties)
Gibson Golden
Honeygold
Idared
Jonafree
Jonagold
Myra Fuji
Red Fuji
Red Idared
Red Jonagold
Redfree
Stark® Golden Delicious
Stark® Super Red Fuji
Stark® UltraGold™

High Vigor

Cortland
Enterprise
Granny Smith
Mutsu
Stark® Supreme Staymared™
Williams' Pride

