

Orchards. Intercropping

What is intercropping and why do it?

Intercropping is the growing of (a crop) usually in the space between rows of a different crop to make use of the soil, light and water that would otherwise not be used by a single crop. For example, the space between trees (especially in a young orchards) can be used to grow crops while the orchard trees grow and mature.

Present practices

In many young orchards, (especially with deciduous trees before canopy closure) vegetables or fodder crops, such as alfalfa and clover can be intercropped.



Clovers can be cropped between almond trees. (Photo Bob Bugg)

Caution required. Factors to consider

When choosing crops to intercrop, consider

1. the potential spread of diseases and insects between the crops,
2. tillage requirements and possible root damage,
3. irrigation and thus possible problems due to different water requirements in terms of timing and/or amount (e.g., too much or too little water can be an issue),
4. weed control needs, and
5. rooting patterns and possible competition for nutrients, light and water especially with deep rooted intercrops interfering with the orchard crop.

Example problems:

1. **Pests.** Although often intercropped, alfalfa needs to be cut frequently or perhaps tilled into the soil to avoid pests like aphids spreading to the orchard crops. Another example is cotton in pomegranates, where the cotton can be a source of potential pests and soil-borne diseases.
2. **Land forming.** Sometimes farmers realize after planting the orchards that raised beds would have been preferable to allow for separate irrigation schedules. If they try to install the raised bed after planting the tree, the rootstock graft may be covered leading to possible disease issues in the trees.
3. **Irrigation schedules.** If the orchard and intercrop are to be watered on the same schedule (i.e., trees are not grown on raised beds), then avoid intercropping crops like clover with almond and apricot; as clover requires more water than the trees.
4. **Root competition.** Crops like potatoes and other root veggies if planted too close to the trees can cause damage to tree roots during harvest.

Things to do

1. If different irrigation timing is required, plant trees on raised beds (rather than installing raised beds later). This allows the trees and intercrop to be irrigated separately as required.
2. Keep ~1 meter distance between tree drip line (Figure at right) and the intercrop.
3. Use clean or certified intercrop seed to avoid diseases.
4. Monitor tree crop for damage from intercrop diseases or insect populations.

