Conventional Legumes:

Winter:
- Garbanzo (chickpeas). Strong N fixation with inoculation, low water demand, requires weed control and management of Ascochyta blight and SCM.

Summer:
- Large and Baby Lima (Vine and Bush varieties). Good N fixation with inoculation, modest water demand, resistant to RKN and some Lygus.
- Blackeye Cowpea. Strong N fixation with inoculation, resistant to RKN and *Fusarium*, requires Lygus management.
- Common Bean Classes (LRK, DRK, Yellow, Pinto, Black Turtle, many others). Variable N fixation (maturity and PGH), modest water demand, few pest/disease problems.

Unconventional Crop Legumes:

Winter:
- Grain Lupin. N fixation, low water. Requires weed control, good drainage, some insect/disease mgmt., and anti-dehiscent material, careful harvesting. SCM.
- Lentils. Slow growing, weed mgmt. issues.
- Others: Peas, Faba beans, scarlet runner, forage mixes.

Summer:
- Pigeon Pea. Limited market, strong fixation and growth/biomass, great insectary, modest water, woody stems, special harvesting, some insect problems. Tall.
- Other Vigna species (mung, urd, rice, etc.). Soy/Edamame. Special Markets.

Cover Crop Legumes:

Winter: Several vetches and peas, Fabas, Clovers, Medics, mixtures, forage crops.


Niche Cover Crop Mixtures (SAFS example): Sorghum-sudan + African cowpea + Lablab, following early tomatoes. Also use of *Mucuna spp.* to help problem soils.

General Issues: Inoculant specificity, Seed procurement/cost/maintenance.


1989 Cover Crops for California Agriculture; P. Miller et. al. Publication # 21471
1993 Creative Cover Cropping in Annual Farming Systems; (DVD) # 6546D
1998 Cover Cropping in Vineyards; C. Ingels et. al. # 3338
Resources: TS&L, Lockhart, Peaceful Valley FS, Fred Thomas (CERES)
Wikipedia Classification

FAO recognizes 11 primary pulses.

1. Dry beans (*Phaseolus* spp. including several species now in *Vigna*)
   - Kidney bean, haricot bean, pinto bean, navy bean (*Phaseolus vulgaris*)
   - Lima bean, butter bean (*Phaseolus lunatus*)
   - Azuki bean, adzuki bean (*Vigna angularis*)
   - Mung bean, golden gram, green gram (*Vigna radiata*)
   - Black gram, Urad (*Vigna mungo*)
   - Scarlet runner bean (*Phaseolus coccineus*)
   - Ricebean (*Vigna umbellata*)
   - Moth bean (*Vigna acontifolia*)
   - Tepary bean (*Phaseolus acutifolius*)

2. Dry broad beans (*Vicia faba*)
   - Horse bean (*Vicia faba equina*)
   - Broad bean (*Vicia faba*)
   - Field bean (*Vicia faba*)

3. Dry peas (*Pisum spp.*)
   - Garden pea (*Pisum sativum var. sativum*)
   - Protein pea (*Pisum sativum var. arvense*)

4. Chickpea, Garbanzo, Bengal gram (*Cicer arietinum*)

5. Dry cowpea, Black-eyed pea, blackeye bean (*Vigna unguiculata*)

6. Pigeon pea, Arhar /Toor, cajan pea, congo bean (*Cajanus cajan*)

7. Lentil (*Lens culinaris*)

8. Bambara groundnut, earth pea (*Vigna subterranea*)

9. Vetch, common vetch (*Vicia sativa*)

10. Lupins (*Lupinus spp.*)

11. Minor pulses include:
    - Lablab, hyacinth bean (*Lablab purpureus*)
    - Jack bean (*Canavalia ensiformis*), sword bean (*Canavalia gladiata*)
    - Winged bean (*Psophocarpus teragonolobus*)
    - Velvet bean, cowitch (*Mucuna pruriens var. utilis*)
    - Yam bean (*Pachyrribiz erosus*)