

## Considerations when Cover Cropping in Sierra Foothills

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### Project objectives:

Evaluate the benefits and trade-offs of different cover crops for Mariposa County communities

1. Evaluate and promote suitable cover crop species for the Mariposa County region and their use for forage and crop production.
  2. Evaluate and promote different land management options on soil health and production goals.
- Support integration of cover crops and regenerative management goals for Mariposa communities.

### Winter Cover crop species:

- Biomaster Field Pea - *Pisum sativum*
- Harry Vetch - *Vicia villosa*
- Balansa Clover - *Trifolium michelianum*
- Oat - *Avena sativa*
- Diakon Radish *Raphanus sativus*
- Mixture

### Cover crops have different traits



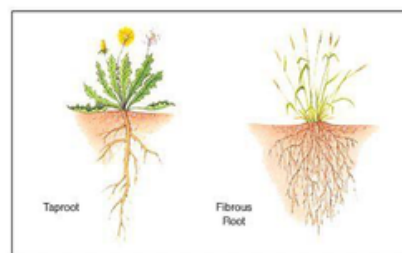
brassicas



legumes



grasses



How to select for traits in landscape based on production goals?

### Summary of different cover crop functional traits

**Field Pea:** Has a tap root, grows 2-3 ft in height with a viny growth habit. It has rapid spring growth, nitrogen fixing, and supports nutrient cycling.

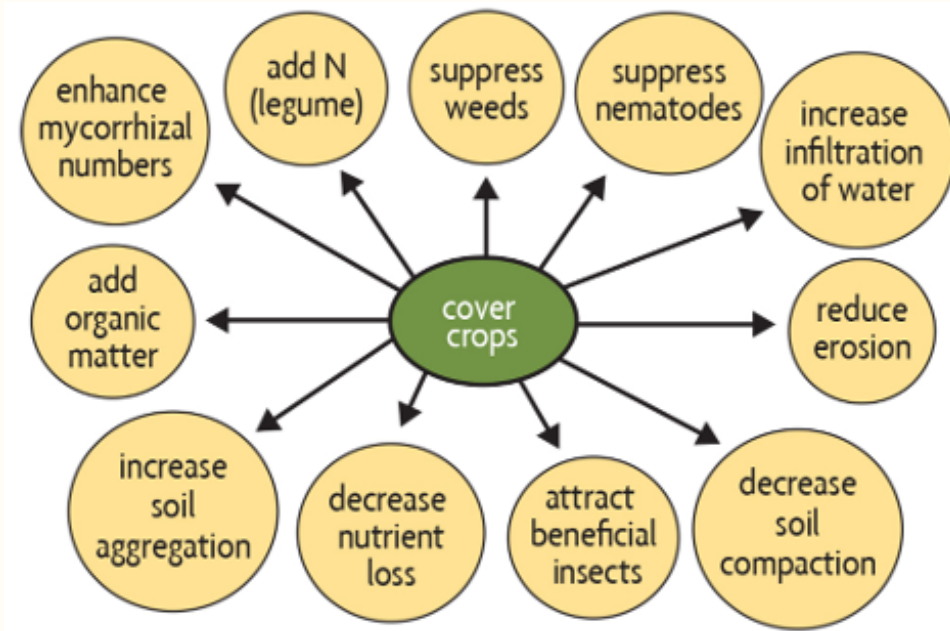
**Hairy Vetch:** Has a tap root and fibrous roots, viny growth, rapid spring growth, moderate biomass accumulation, nitrogen fixing, and nutrient cycling.

**Balansa Clover:** Has a tap root and fibrous roots. Growth pattern is multi-branched and erect, with rapid spring growth, low biomass accumulation, nitrogen fixing, and nutrient cycling.

**Forage Radish:** Has a large tap root and can grow up to 6 ft or more. It has a flexible/erect growth habit and will spread in a rosette to fill space. It features rapid growth, high biomass accumulation, provides soil fumigation for weeds and pests, improves soil compaction, nitrogen scavenging, supports water filtration and nutrient recycling, and is good for early pollinators in late winter and spring.

**Oat:** Has fibrous roots, upright growth, rapid growth, high biomass, nitrogen scavenging, soil building, soil structure, and carbon sequestration.

## Benefits of cover crops



SARE. Building soils for better crops (2021).

<https://www.sare.org/publications/building-soils-for-better-crops/cover-crops/>



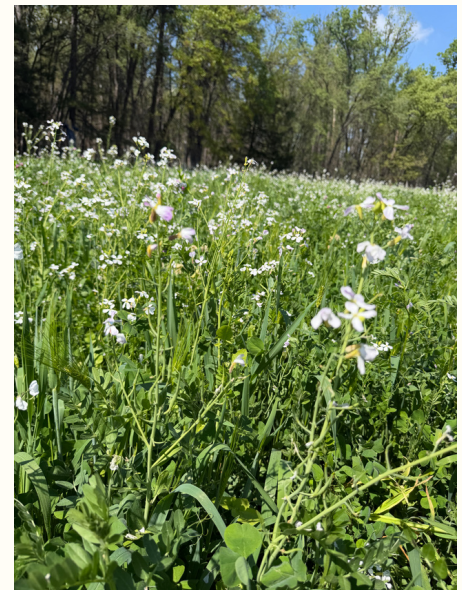
April 2026 mustard flowering at Happy Goat



April 2026 cover crop field, Happy Goat Farm

## Factors Affecting Seasonal Availability of Nitrogen in Your Cover Crop:

- The amount of nitrogen that will be available to the following crop depends on factors like cover crop species, decomposition rate, soil conditions, and whether the cover crop residue is incorporated or left on the surface.
- General Rule of Thumb: A conservative estimate of plant-available nitrogen (PAN) is 50 to 60 percent of total biomass-N.
- Example: If the cover crop has 100 lbs of total nitrogen per acre, a conservative estimate of PAN would be 50 to 60 lbs.
- PAN Release Time: Most PAN is released in 4 to 6 weeks after cover crop kill.



April 2026 cover crop field, Sierra Cider

## Land Preparation and Seeding Options:

Broadcast: Manage ground cover appropriately, scatter seeds more densely than if you were to drill seeds. Use compost or rake in seeds to achieve some seed-to-soil contact.

Land preparation can be done using tillage methods before the soil becomes saturated by early season rain, or no-till methods can be used. If no-till is used, seed the cover crop early before resident vegetation ground cover emerges.



Raised Bed with Cover Crops



Occultation

## Cover Crop Termination Options

- If maintaining a no-till system, crimping, tarping, grazing, and mowing are your options for managing above-ground growth.
- If you are tilling, using a BCS or tractor is necessary. Terminate by grazing or mowing first, followed by disking in the cover crop. Allow cover crop decomposition to occur before planting next season's crop to eliminate N immobilization.
- Generally, you will have the maximum benefit of a cover crop if you terminate at peak bloom time before species go to seed.

## Different Termination Techniques

