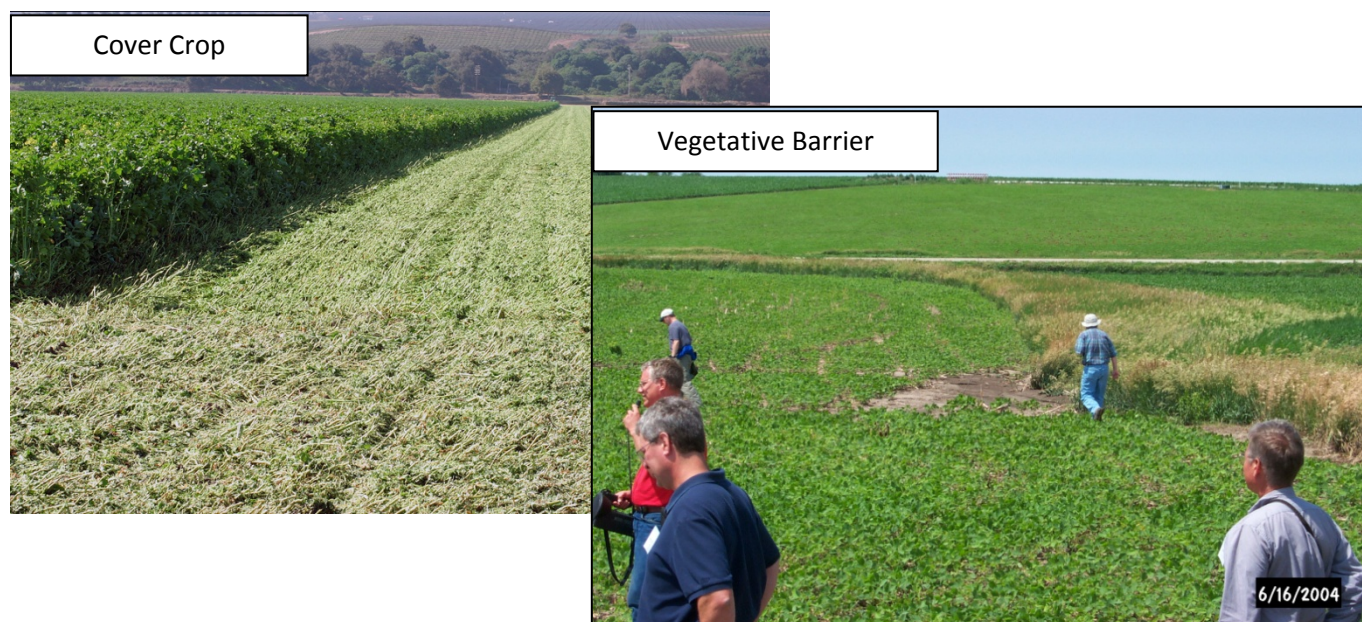


BALANCING FOOD SAFETY AND SUSTAINABILITY

Opportunities for Co-management - Cover Crops and Vegetative Barriers

This is one of a series of resource sheets for food safety auditors that describe conservation practices commonly used in agriculture's production environment

Images of Cover Crops¹ and Vegetative Barrier² in the production field



This information will help you to

Recognize Cover Crops and Vegetative Barriers in the agricultural environment.

Understand the purposes Cover Crops and Vegetative Barriers serve in the agricultural environment.

Recognize the language growers may use to explain why these practices are important in their production environment.

Understand when audit standards may consider these practices as addressing farming impacts on the environment and/or as potential contributors to food safety risk.

¹ This practice is currently listed as [Cover Crops #340](#) by the USDA Natural Resources Conservation Service. The NRCS National Practice Standards are updated regularly. Some states may include additional guidance; consult your local NRCS field office.

² This practice is currently listed as [Vegetative Barrier #601](#) by the USDA Natural Resources Conservation Service. The NRCS National Practice Standards are updated regularly. Some states may include additional guidance; consult your local NRCS field office.

Cover Crops may be planted as part of an annual crop rotation, in orchards or in vineyards, and may include a range of grasses and other plants to provide seasonal cover and other conservation services. They are used to control [soil erosion](#), add [organic matter](#) and nutrients to the soil, improve [soil health](#) and increase [infiltration](#) and aeration of the soil. Cover crops have a filtering effect on movement of sediment, pathogens, and dissolved and sediment-attached pollutants.

Vegetative Barriers are permanent narrow strips of dense, stiff, erect vegetation planted along the general contour of slopes or across concentrated flow areas to slow the velocity of runoff and capture sediment. The primary purpose of Vegetative Barriers is to slow water velocity on slopes. In comparison, Filter Strips are designed to capture sediment on flatter ground. Generally placed on the upslope portion, Vegetative Barriers may improve the efficiency of other practices such as [Filter Strips](#), [Riparian Forest Buffers](#), or [Grassed Waterways](#).

Advantages³

Disadvantages

Characteristics shared by practices

- | | |
|---|---|
| <ul style="list-style-type: none"> • Reduces soil erosion • May improve water quality | <ul style="list-style-type: none"> • May require routine maintenance, including mowing, irrigation, and/or pest and weed control |
|---|---|

Cover Crops

- | | |
|---|--|
| <ul style="list-style-type: none"> • Increase organic matter and soil health • Reduces cultural operation costs and/or tillage with perennial cover crops • Reduce herbicide applications • May reduce some insect infestations • Easy to install and maintain • Reduces soil compaction • Minimizes root damage from cultivation • Reduces water runoff • May reduce size and cost of additional practices such as a sediment basin | <ul style="list-style-type: none"> • May lower minimum temperatures in crop environment, leading to increase risk of crop damage • Could harbor crop pests • May compete with crops for water |
|---|--|

Vegetative Barrier

- May enhance wildlife habitat, especially when native species are used
- Potential to capture sediments from upslope land uses
- Potential to capture nutrients and pesticides

³From [Farm Water Quality Management Practice Sheets](#) Cover Crops #340 and Vegetative Barrier #601

In some audit standards these practices may help producers to demonstrate knowledge of the impacts of farming on the environment including the movement of bioaerosols³, and/or water quality impairments from sediments and nutrients. They may trigger concerns about animal activity, fecal contamination, proximity to habitat for wildlife.

⁴ Bioaerosols are defined by the American Conference of Governmental Industrial Hygienists (Bioaerosols: Assessment and Control, 1999) as those airborne particles that are living or originate from living organisms. Bioaerosols include microorganisms (i.e., culturable, nonculturable, and dead microorganisms) and fragments, toxins, and particulate waste products from all varieties of living things. Bioaerosols are ubiquitous in nature and may be modified by human activities. All persons are repeatedly exposed, day after day, to a wide variety of such materials. Individual bioaerosols range in size from submicroscopic particles (<0.01 micron) to particles greater than 100 microns in diameter.

Scenarios

Cover Crops are grown to reduce soil erosion and incorporated into soil prior to planting, as noted in the field history.

Inspection of crop areas adjacent to fields planted with tall grass cover crops are included in routine monitoring for fecal contamination and/or animal activity.

Inspection of crop area adjacent to Vegetative Barriers is included in routine monitoring for fecal contamination and/or animal activity

Additional Resources

[Balancing Food Safety and Sustainability: Opportunities for Co-management](#)

[Cover Cropping for Vegetable Production, 2011](#)

[Cover Crops for Walnut Orchards, 2006](#)

[Summer Cover Crop Use in Arizona Vegetable Production Systems, 2010](#)

[Managing Cover Crops Profitably, 3rd Edition, 2007](#)

[Estimated Costs and Potential Benefits for an Annually Planted Cover Crop, 2003](#)

Additional resources on co-management of food safety and sustainability may be found at on the UC Food Safety Website under the [Pre- and Post-Harvest Produce](#) link. You can also contact Mary Bianchi, UC Cooperative Extension Emeritus Farm Advisor in San Luis Obispo County at mlbianchi@ucanr.edu.

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