Vegetative Barrier for Co-Management

O'AHU RESOURCE CONSERVATION & DEVELOPMENT COUNCIL

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COOPERATIVE EXTENSION
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Co-management:
Refers to managing farms and their surrounding environments such that multiple goals are achieved: natural resource conservation *and* food safety.

Co-management practices:
Refers to those *best management practices* (BMPs) which meet objectives in both natural resource conservation and food safety.

Vegetative barrier: Permanent strips of stiff, dense vegetation established across runoff areas, such as vetiver and ahuawa.

A vetiver installation at an organic farm in Waialua, Oahu

How does a vegetative barrier help?

Traps sediment and minimizes runoff containing potentially contaminated soil or water from entering active production areas, reducing exposure of harmful pathogens.

Functions

- ➔ Increased surface water filtration
- ➔ Increased living roots/plant cover
- ➔ Increased water infiltration

Best use: *Good for farms with steep topography and high rainfall*

Benefits

...to food safety

- Reduced transfer of potentially harmful pathogens via runoff and flooding into farm production areas

....to conservation

- Reduced soil erosion
- Building carbon and soil health
- Groundwater recharge

Practicality

the pros

- Effective to slow runoff and trap sediment in runoff

the cons

- Can create habitat for undesirable insects, birds, and rodents

Literature Summary

- Vegetated filter strips of fescue grass reduced runoff by 59-81% and fecal coliform discharge by 23-67% compared to bare-ground, primarily through increased water infiltration into the soil (Roodsari et al. 2005).
- Vegetated buffers from 1 to 25 meters wide reduced the fecal coliform levels in runoff water by more than 99% (Sullivan et al. 2007).
- Vegetative buffers reduced *E. coli* discharge by 0.3 to 3.1 $\log_{10}$ with each additional meter of buffer, but loss efficiency with higher runoff volumes (Tate et al. 2006).
- Hedgerows surrounding walnut orchards and tomato fields promoted wildlife diversity, but did not lead to increases in wildlife intrusion into crop production areas or prevalence of foodborne pathogens (Sellers et al. 2018).

References

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Resources

1. Learn more about co-management: Wild Farm Alliance: Food safety and Conservation Resources
2. Learn more about food safety: Roots FSMA Guide & Produce Safety Alliance
3. Learn more about conservation practices and on-farm assistance opportunities: Oahu RC&D & CTAHR Extension

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