Grassed Waterway 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.

Grassed waterway: A vegetated channel that conveys surface water at a non-erosive velocity to a stable outlet.

A grassed waterway used to manage runoff in Waimanalo, Oahu

How does a grassed waterway help?

Encourages infiltration of potentially contaminated runoff into the soil and diverting away from production areas. This practice reduces the amount of potentially contaminated runoff that flows over production fields and reduces exposure of harmful pathogens on produce and/or to farm employees.

Functions

- ➔ Increased surface water infiltration
- ➔ Improved soil structure
- ➔ Increased plant cover

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

Benefits

...to food safety

- Reduced risk of contamination from runoff and floodings to farm production areas

....to conservation

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

Practicality

the pros

- Helps to reduce problematic puddling
- Effective to guide water into more desirable areas, such as to a sediment basin/catchment pond

the cons

- Labor, equipment, and cost required to dig channel and establish seed.
- Requires regular manual maintenance of grass

Literature Summary

- Grassed waterways can significantly reduce runoff volume and velocity (up to 90% for unmanaged vs 10% for cut), including sediments and agrochemicals (Fiener & Auerswald, 2003).
- Peak discharge from a field can be reduced by a mean of 69% using grassed waterway installations. Sediment discharge at the catchment outlet decreased by a mean of 93% compared to the discharge measured in the grassed waterway's runoff inflow (Evrard et al., 2008)

References

Evrard, O., Vandaele, K., Van Wesemael, B., & Bielders, C. L. (2008). A grassed waterway and earthen dams to control muddy floods from a cultivated catchment of the Belgian loess belt. *Geomorphology*, 100(3-4), 419-428.

Fiener, P. and Auerswald, K. 2003. Effectiveness of grassed waterways in reducing runoff and sediment delivery from agricultural watersheds. Journal of Environmental Quality, 32(3), 927-936.

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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