



Compost Application on Grazed Rangelands (CPS 808)

Part of Fibershed's Carbon Farming Education program, learn more online at: fibershed.org/carbon-farming



Benefits of Compost Application on Grazed Rangelands

- ▶ Increases soil organic carbon levels
- ▶ Improves soil water infiltration and water holding capacity
- ▶ Improves forage production
- ▶ Improves nutrient holding capacity of soils
- ▶ Improves the physical, chemical, and biological condition of soil



How to Source Compost for an Application on Grazed Rangelands

- ▶ Compost is the end product of a managed aerobic, high-temperature decomposition process suitable for beneficial application to the soil using plant and animal-derived materials, such as plant residues, tree trimmings, manure and other organic materials in appropriate combination.
- ▶ Note: Compost application differs from manure application. Uncomposted manure can contain weed seeds or salts and when spread directly on pasture can cause a significant release of nitrous oxide (a potent greenhouse gas) into the atmosphere. Composting mitigates or eliminates these impacts.
- ▶ On-farm produced compost is a great option for producers who have available materials and capacity.
- ▶ Contact Fibershed (hello@fibershed.com) for a list of compost providers in your area.



How is a Compost Application on Grazed Rangelands Implemented?

- ▶ A compost application on grazed rangelands is a one-time application of ¼" - ½" compost on a grazed rangeland.
- ▶ Assess your access points and plan an appropriate staging area for the compost.
- ▶ Micro scale (1-3 acres): manual application with wheelbarrow or tractor bucket transport, and hand shovels
- ▶ Small scale (1-10 acres): manure spreader attached to a tractor or draft horse
- ▶ Commercial scale (10+ acres): for most compost, use a manure or compost spreader, attached to a tractor.
- ▶ Ideal timing for applying compost to the land is just before the fall rains begin, typically September/October in most of California.

"Agricultural land management practices can measurably increase rates of carbon sequestration, resulting in enhanced soil quality, soil water holding capacity, increased soil carbon and forage production."

- Ryals and Silver 2013



Compost Application Quantities and Conversions

- ▶ When purchasing compost, it is typically measured by the cubic yard or by the ton.
- ▶ An application of ¼ inch layer of compost to one acre requires approximately 37 cubic yards.
- ▶ One cubic yard of compost weighs approximately 1,000 lbs (½ ton), with variation based on moisture content.
- ▶ You may need to convert a measurement of dry weight of compost to wet compost (as purchased from supplier). If so, multiply the dry weight by the quantity [1+moisture content]. For example, if the moisture content is 40%, multiply the desired dry weight by [1.4] to calculate the wet weight of compost you will need.



Cost References

- ▶ Per yard: total cost \$20 - \$80 (approx. ½ ton); ask your RCD or Fibershed for local references.
- ▶ Total cost includes compost material, hauling and spreading.



Complementary Practices

- ▶ Prescribed grazing (CSP 528)
- ▶ Range planting (CSP 550) or forage & biomass planting (CSP 512)
- ▶ Supporting infrastructure such as: fencing (CSP 382), water development, shade points



Technical Support

- ▶ A local technical service provider can help determine what sites are appropriate for compost application,* assist with sourcing materials and equipment.
- ▶ Resource Conservation District (see CARCD's website directory at carcd.org/rcds/find to find which one serves your area)
- ▶ Natural Resources Conservation Service (see NRCS's service center locator at offices.sc.egov.usda.gov/locator/app?agency=nrcs to find which office serves your area)
- ▶ Climate Smart Agriculture Community Agriculture Specialists (ciwr.ucanr.edu/Programs/ClimateSmartAg/TechnicalAssistanceProviders/) working across the state with UC Cooperative Extension
- ▶ Some regional land trusts may offer technical support services.
- ▶ Certified rangeland managers; certified crop advisors

*Rangeland soils unsuitable for compost applications generally include those already high in organic matter content (5% and above) and those slopes too steep for access safely with equipment. Exclude compost application from land not currently being actively managed for livestock—these guidelines apply to pasture and rangeland, but not necessarily to cropland; land within 35' of a surface water body; and special status soils, such as serpentines and histosols.



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