

## Notes on Composting Grape Pomace

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Wine producers in the state of Virginia have shown increasing interest in producing compost from wine grape pomace, which can then be applied to vineyard soils as a nutrient rich soil conditioner. The notes below have been compiled to provide a quick reference guide for farm wineries initiating small or large scale composting operations.

- pomace is high in N>K>Ca [**N-P-K-Ca = 2.0-0.5-2.0-2.0**]
- pomace is about 8% seeds, 10% stems, 25% skins, 57% pulp
- in general 1 ton of harvested grapes produces 100lbs of stems and 160 to 240 lbs of pomace (more simply, 3 tons grapes is about equal to 1 ton of total pomace)
- returns ½ to 1/3 of nutrients and OM removed from crop
- 1:1 ratio, pomace:manure bedding (straw + manure) provides 2/3 to 100% annual nutrient needs of vineyard
- pomace alone composts' slowly – low pH (3.5 to 3.8)
- compost microbes prefer a pH of 6.2 to become active (pH >6 desired)
- lime or other feedstocks must be added to the pomace in order to increase pH
- pomace has C:N ratio appropriate for composting (1:17 to 1:30)
- feedstock added to pomace should also have C:N ratio appropriate for composting (1:20 to 1:30)
- high lignin in seeds (17to 35%) limits decomposition in unturned piles
- wet piles (>60% moisture) may continue to ferment, produce acetic acid = poor quality (check for off odors in pile or other clues of anaerobic activity)
- 1-5 tons per acre annually is considered maintenance application
- frequent turning of pile (2x's or more/week) reduces N & OM
- turning pile only once every 2 weeks retains more N & OM
- pile temperature of 130-140°F for 1 to 2 weeks is necessary to kill weed seeds and pathogens
- pile temperature of 110-140°F is typical after the initial 1 to 2 weeks
- minimum of 3 turns of a pile is also required to kill seeds and pathogens
- keep pile temperature under 160 °F to reduce risk of combustion and loss of beneficial organisms
- composting is a 6 to 10 month process, dependent upon turning frequency, moisture, and temperature of piles or windrows