Resources

NYS Horse Health Assurance Program
www.agmkt.state.ny.us/NYSHHAP/horsehealth.html

NYS Department of Agriculture and Markets
Agricultural Environmental Management Program
www.agmkt.state.ny.us/soilwater/AEM/

Equine Science Center at Rutgers University
Rutgers Cooperative Research & Extension (RCRE)
www.esc.rutgers.edu

Composting
www.nycwatershed.org/pdfs/EOH_COMPOSTING.pdf

Paddock Management
www.nycwatwershed.org/pdfs/PASTUREMANAGEMENT_PaddockMngt4Horses.pdf

CCE of Delaware County
www.ccedelaware.org

Watershed Agricultural Council
www.nycwatershed.org

If you are farming in the Croton, Catskill, or Delaware watersheds, you may be eligible for free technical assistance through the Watershed Agricultural Council. We can help you with whole farm planning, and land conservation practices that benefit your farm and water quality. Call today to determine your eligibility. All personal information shared is confidential.

East of Hudson Program
(Croton Watershed)
1275 Hanover Street
Yorktown Heights, NY 10598
(914) 962-6355

Agricultural Program
(Catskill/Delaware Watershed)
44 West Street
Walton, NY 13856
(607) 865-7090

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ON-FARM HORSE MANURE MANAGEMENT

Managing manure to minimize negative impact to the environment, human and animal health and farm appearance can be a daunting task. Whether you house your horses inside, outside or both, animal waste accumulates 24 hours a day and must be actively managed.

What Goes In, Must Come Out (mostly)

The first way to begin managing manure is to optimize what your horses eat. Depending on a variety of factors such as size, age and activity level, a horse will typically digest about 60% of its ingested feed (RCRE Fact Sheet 036). This means that 40% of what a horse eats will be excreted as manure. Typically, the higher the fiber content of the diet, the higher the rate or quantity of elimination. A key component of horse feeds is protein, which contains mostly nitrogen. Horses that are fed too much protein will excrete excess nitrogen in the form of urea, or urine, thus achieving the balance of fiber and protein is important. To have your feed content analyzed, contact your local feed supplier or equine nutritionist. Phosphorous, a macro-mineral also present in horse feed, is excreted in feces. Even when horse diets are tailored well to each animal, both nitrogen and phosphorous are always present in the diet. One should avoid overfeeding these nutrients whenever possible, as they will contribute to nutrient overloads that can contaminate ground or surface water sources.

Hitting the Ground: Controlling Manure's Impact

Manure can be a beneficial resource or an onerous burden, depending on how it is managed. When handled properly, manure can be an invaluable source of soil fertility. When not, it can cause environmental pollution to water, air (odor and spores), and soil. Excreted nitrogen that cannot be absorbed by plants can migrate to groundwater and be released as a gas. Excess phosphorous will not leach through soil like nitrogen, but will run off into surface water sources. Additionally, of significant concern is the potential presence of pathogens in manure, specifically *Cryptosporidium*, *Salmonella*, *E. Coli*, and *Giardia*. Fly larvae and vermin may also thrive on exposed manure.

For these reasons, handling and containing manure appropriately, either before it is transported, spread, or as it undergoes a composting process, is crucial to maintaining environmental and sanitary conditions on your farm. The following should be considered when handling, containing, and disposing of manure:

Concrete storage pads located away from water courses provide temporary manure containment until farm waste is hauled away, composted or disbursed according to a nutrient management plan.

Before working with the Watershed Agricultural Council, this farm's manure container provided a hard-to-access and dangerous set-up which resulted in unsanitary waste disposal that potentially threatened water quality.

After receiving assistance and funding from the Council, this farm's revised waste system now includex a retaining wall, convenient and safe dumpster access, and concrete pad that minimizes water quality issues, improves hauling access and ultimately saves the farm money.

- Manure should be removed from stalls or exercise lots on a regular basis and stored in central contained areas on farm.
- Those removing and handling manure should be well versed in the farm's plan for manure management.
- Storage areas or containers should be sized sufficiently for the amount of manure and other organic waste produced on the farm.
- Storage areas should also be well drained and not situated in sloped areas near water sources (streams, wetlands, wells, ponds) or where excess water can enter the area. Contact your County Soil and Water Conservation District to assist you with identifying the best site.
- Manure and farm waste are best stored on hard surfaces such as packed gravel or concrete. Depending on cost and conditions, you may consider building a roof over your manure pile to exclude rainfall and eliminate runoff.
- Leachate from the pile should be filtered using conservation practices such as bordering grass buffers and filter strips.
- Spread all manure according to a nutrient management plan (NMP). Harrow or otherwise incorporate manure into the soil. Your NMP will specify any areas where spreading manure should be avoided such as nutrient-saturated areas, frozen ground, and near water courses. Consult your WAC Whole Farm Planner, local USDA Natural Resource Conservation Service (NRCS) professional, or other agricultural agency representative to discuss manure management on your farm.
- Unless you employ a regular de-worming program, avoid turning horses out where manure has been recently spread.
- Hire a reputable service to coordinate manure hauling, composting and off-site disposal. Refer to your Whole Farm and Nutrient Management Plans for recommendations or discuss various options with your WAC Planner.