



# Soil Management

WV Poultry Water Quality  
Advisory Committee

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## Best Management Practices for Poultry Litter Users

### Introduction

BMPs associated with the storage, land application, and feeding of poultry litter can have a positive impact on surface and groundwater quality. Many of these BMPs will also conserve nutrient value and improve the feeding quality of poultry litter. The West Virginia Poultry Water Quality Advisory Committee recommends that the BMPs contained in this brochure be adopted and implemented by poultry growers and other that utilize poultry litter as a feed or fertilizer.

### Transport and Storage

- \* West Virginia law requires that poultry litter be contained and covered when transported on public roads (WVDOH § 1721-17C)
- \* Poultry litter should be stored on a site with less than a 15% grade, located at least 50 feet from all drainage ways, surface water or other seasonally high water areas and 100 feet from all wells. Locate outside storage sites in areas with grassed buffer strips between the stack and streams or drainage ways to reduce potential nutrient loss into surface and groundwater. Remember to consider neighbors when selecting a site to store litter.
- \* Stored poultry litter should be covered to prevent water entry. Coverage may include but is not limited to: a litter storage facility or a secured, removable tarpaulin. Heavy gauge plastic sheeting will work well and at reasonable cost. Plow or till poultry litter into the soil of annually cropped land as soon as possible after application to retain and utilize litter nutrients and deter potential neighbor nuisance complaints.

### Use of Poultry Litter as a Fertilizer

- \* Remember to account for all NPK from litter and starter fertilizer before determining the amount of commercial fertilizer, if any, that is needed.
- \* Determine residual soil nitrate levels in crop ground with a nitrogen quick-test analysis to save money and avoid applying excess nutrients.
- \* Apply poultry litter based on crop nutrient requirements, soil test analysis and litter nutrient analysis. Excess application of nutrients can negatively impact water quality and increase production costs.
- \* On permanent pasture that tests high in potassium, litter application rates should not exceed crop removal rates for potassium in order to minimize the potential for grass tetany in livestock.
- \* Spreader calibration is a necessary part of efficient poultry litter utilization in support of proper application rates, water quality improvement, and economy of nutrient purchases.
- \* Land application of nutrients onto snow covered, frozen or saturated land is not recommended, as such practices can lead to surface and groundwater pollution.
- \* It is recommended that poultry litter not be applied to land with more than a 25% slope unless sufficient vegetative cover is present to retain and utilize the applied nutrients.

\* Use of cover crops is recommended to retain sediment and to utilize excess soil nutrients not removed by a primary crop.

### Use of Poultry Litter as a Feed Source

The use of poultry litter as a livestock feed can provide for increased net returns to the farmer through reduced feed costs. To provide for the safe, effective use of litter as a livestock feed, a few precautions should be considered:

\* Poultry litter utilized for livestock feed should be analyzed to determine total digestible nutrients (TDN), crude protein, crude fiber, minerals, and ash. Ash content should not exceed 28 percent. Ash can be a problem with poultry litter from birds raised on dirt floors if management techniques that reduce the soil content of litter at clean out are not practiced.

\* West Virginia law prohibits the feeding of unrendered poultry carcasses to livestock (WVDA §61-1C-3). Litter utilized for livestock feeding must be free of dead bird or rodent carcasses to avoid potential botulism problems. The litter must also be free of nails, wire, glass or other trash that may be present within poultry houses.

\* Litter should be deep stacked and covered tightly to exclude oxygen for three weeks or more at a temperature of 130 F° to destroy pathogens and inhibit molds. The temperature should be monitored to avoid excessive heating (greater than 140 F°) which will greatly reduce the nitrogen digestibility and feed value.

\* Young calves do not effectively utilize the non-protein nitrogen within poultry litter as readily as more mature cattle. The potential for a coccidia infestation is also elevated. For best response, feed litter to cattle weighing over 400 pounds. It is recommended that cattle not be fed high litter rations longer than six continuous months and that there be a minimum 15-day withdrawal period prior to slaughter.

\* Do not feed litter in excess of 80% of livestock rations. Bovate™ or Rumensin™ should be included in rations that contain poultry litter.

\* It is not recommended that litter be fed to lactating dairy cows because of the lack of opportunity for a withdrawal period to eliminate residues from the milk. Cows within 30 days of parturition should receive no more than 30% of their dry matter intake from litter due to the increased potential for milk fever.

\* Litter high in copper can be toxic to sheep. A litter nutrient analysis should be obtained to determine copper levels before utilizing litter in a sheep ration.

\* Because poultry litter is virtually devoid of Vitamin A, a supplemental source of Vitamin A should be added to all rations that utilize litter.

\* Litter is more available for purchase in the off-season (August to February). Follow recommended storage practices to retain litter nutrients and sustain water quality until the litter is utilized.

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### References

*Safe Use of Poultry Litter As a Feed Source*, by C.W. Ritz, West Virginia University.

USDA Natural Resources Conservation Service Field Office Technical Guide.

*Poultry Water Quality Handbook*, by the Poultry Water Quality Consortium.

The use of trade or product names within this publication does not imply endorsement to the exclusion of other products that might be equally suitable.

The West Virginia University Cooperative Extension Service, U.S. Department of Agriculture, Natural Resources Conservation Service, and West Virginia State Soil Conservation Agency cooperating.

For further information about litter utilization or water quality improvement practices, contact the Potomac Inter-Agency Water Quality Office at (304)538-7581.

For litter nutrient analysis, contact the WVDA Moorefield Field Office (304)538-2397.