Federal Energy Conservation Money Is Available

The U.S. Department of Agriculture’s Natural Resources Conservation Service has money available to help chicken growers conduct farm energy audits and to help with the purchase and installation of energy saving equipment.

The first step is to have an energy audit done that prepares a report on energy use and opportunities to save energy. This is done by an NRCS-approved Technical Service Provider hired by the grower. NRCS will review the audit report, and once approved, reimburse the grower for the audit at a payment rate based upon the farm size.

Then, NRCS will provide an incentive payment for implementing recommended energy saving practices. Payments vary based upon the audit recommendations.

Cost-share assistance can be provided for the use of more energy efficient fans, lights, brood heaters, insulation, and even the conversion of motors from diesel to electric. It cannot be used for a feasibility study for the installation of solar projects.

Unlike many other NRCS programs that use a ranking tool to determine which cost-share grants are awarded, this energy audit program does not use a ranking tool. Applications are accepted at any time, but approval periods are announced each year.

To get started, and the sooner the better, contact your county NRCS office and ask about the 2012 Energy Initiative.
To provide environmental benefits, conservation practices must be operated and maintained as designed. The following checklist describes some common problems to look for in the production area of poultry operations.

Natural Resources Conservation Service (NRCS) and Soil Conservation District staff are available to provide follow-up assistance, if needed.

**Manure Storage**
Manure removed from poultry houses should be stored in a covered shed until it can be applied to crops or otherwise used.

The following are potential problems you may see:
- Manure piled outside shed.
- Manure stacked too high against walls.
- Shed contains equipment or supplies that are not easily moveable (e.g. not on wheels).
- Obvious surface water conveyance near the open ends of the shed to a drainage ditch or swale.

**Composters**
Properly operated composters provide an environmentally sound method for disposing of normal mortality from poultry houses.

The following are potential problems you may see:
- Leakage.
- Excessive odor or flies.
- Dead birds visible.
- Evidence of animals feeding on dead birds.
- Thermometer not readily available (DE only).
- Recipe sign not posted (DE only).

**Concrete Pads**
Concrete pads at the ends of poultry houses and manure sheds can reduce erosion and protect surface and ground water from contamination. Concrete pads should be properly installed, maintained, and kept clean of manure.

The following are potential problems you may see:
- Manure present on pads.
- Obvious surface water conveyance to a drainage ditch or swale near the open ends of poultry houses and manure sheds.
- Concrete cracking or breaking off.

**Windbreaks**
Windbreaks, or vegetative environmental buffers, are planted around poultry houses to provide shelter from winter winds; reduce particulates, ammonia, and other odors from tunnel fans; create visual screens; and provide shade to reduce extreme summer heat.

The following are potential problems you may see:
- Trees dead, dying or damaged (e.g., broken off, mowed over, bagworms, etc.).
- Lack of weed control around trees.
- Irrigation system not functioning (e.g., major leaks, broken lines, etc.).
- No irrigation system.

**Other Concerns**
Other issues that may result in environmental concerns include, but are not limited to:
- Manure scattered around the production area.
- Manure runoff visible.
- Lack of good vegetative cover for filtering storm runoff between waste storage structures, composters, or ends of the poultry houses, and drainage outlets.
- Overall farm appearance (a farm that “looks good” is less likely to generate complaints from neighbors).

Any other problems or issues at the farm?

**Conservation Practices Needed?**
- Manure Storage
- Composter
- Windbreaks
- Concrete Pads
- Other (describe)

NRCS January-2008
Preventing Fires in Manure Storage Structure
Factsheet 820

Poultry litter is a valuable resource, not just a byproduct of poultry production. A manure storage structure is an important part of managing poultry litter to preserve nutrient content and store litter in an environmentally sound manner. Storing litter provides flexibility in the timing of application, allowing field applications at the best time for plant nutrient uptake. Storage structures provide protection from weather, preserve nutrients in manure, and prevent nutrient losses to surface water. It is essential that poultry litter be stored properly to avoid the danger of fire caused by heat generated within the manure pile. As microbial activity occurs within the pile, heat and methane gas are produced. Heat is also produced at the boundary between moist and dry litter. If the pile is insulated or compacted, overheating and resultant spontaneous combustion may occur as temperatures climb above 190° Fahrenheit.

The following conditions can contribute to manure storage structure fires:

- Moisture: When dry litter comes into contact with moist litter, the dry litter absorbs moisture and heat is released.
- In a large pile, the heat released is significant. If heat cannot escape, overheating may result.
- Layering: If new litter is stacked on top of old litter or pushed up against an older pile of litter this will allow moist (new) litter to come in contact with dry (old) litter. As a result, the area between new and old litter becomes a heat producing zone.
- Compaction: Litter may be compacted by driving equipment on the manure pile while loading the storage structure. Heat is trapped in a compacted pile. Never drive equipment on a pile when loading manure in a storage structure.
- Pile Size: Heat is more easily released from a smaller pile. The larger the pile size, the greater the chance of excessive heat buildup and fire. Pile height is most critical. When creating a pile in the storage structure, limit the height to 5-7 feet in the middle of the pile, and 4 feet against walls. Piles that are stacked too high create an insulating compacted layer that traps heat.

Recommendations for Preventing Fires:

- Never mix moist litter or composted dead birds with dry litter.
- Protect litter in shed from wind driven rain.
- Do not wet litter down in hopes of preventing a fire, just the opposite may occur!
- Avoid layering new litter on top of or next to old litter. Do not add composted birds to manure pile.
- Avoid compaction. Never drive equipment on a manure pile.
- Limit pile height to 5-7 feet in the middle of the pile, and 4 feet against walls.
- Because of the danger of fire, do not store expensive equipment in a manure storage structure.

Monitor the temperature within the manure pile: if the temperature exceeds 190°F or smoldering occurs, manure will need to be removed from the pile. If overheating is expected, the fire department should always be on hand when manure is removed from the pile as it may burst into flames when exposed to air. A garden hose will be inadequate to extinguish such a fire. For more information, contact your local University of Maryland Extension Office.

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Preventing Fires in Manure Storage Structures
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**RECIPE**

1-5 gallon bucket of birds
2-5 gallon bucket of litter
1-5 gallon bucket of bulking agent (sawdust, shavings, straw, grass clippings, leaves, etc.)
Water (saturate feathers)
Monitor temperatures (should reach 135°F-150°F within 3-4 days)

Turn pile or bin once temperatures begins to drop (10-15 days).
To turn, remove from bin or pile and place in another bin or pile or secondary alleyway mixing the existing material
Most of the flesh should be composted with mostly bones and feathers remaining (may need to add litter to ensure that all carcasses are covered)
Bring temperature back up to 135°F-150°F.
Once fully composted, place composted material in the waste storage structure.
Keep the parent material separate from dry manure to prevent the possibility of fire.
Every farm needs a mass mortality plan. Consult your Poultry Company for advice on compost methods. For more assistance contact your local USDA - NRCS office, Conservation District Office or Cooperative Extension Service. A detailed presentation is available at the following website: [http://www.poultryextension.com](http://www.poultryextension.com)

### Poultry Mass Mortality Composting Options

**Procedure:**

1. Select a composting option that matches the nature and extent of losses, resources available and farm situation.
2. Place a uniform mixture of carcasses and litter in the area selected.
3. Move litter and carcasses from the place of death to the compost area.
4. In-field composting (in-floor) is not an option.
5. Outside composting (on-floor) is recommended.

**Diagram:**

- Composting strategy designed for large operations.
- Components used include:
  - Excavation: Dug out the area and clean the ground.
  - Mixing: Use manure, bedding and other materials.
  - Composting: Add nutrients and cover.
  - Overwintering: Extended time for composting.
  - Collection: Gather and move the compost.

**Additional Information:**

- Composting is a cost-effective and environmentally friendly method for managing poultry waste.
- Proper composting can reduce odor, attract pests and reduce the amount of waste that needs to be transported off-site.
- Contact your local Cooperative Extension Service or NRCS office for more information on composting methods.

**Notes:**

- Composting is a viable option for managing poultry waste.
- Proper composting can reduce odor, attract pests and reduce the amount of waste that needs to be transported off-site.
- Contact your local Cooperative Extension Service or NRCS office for more information on composting methods.