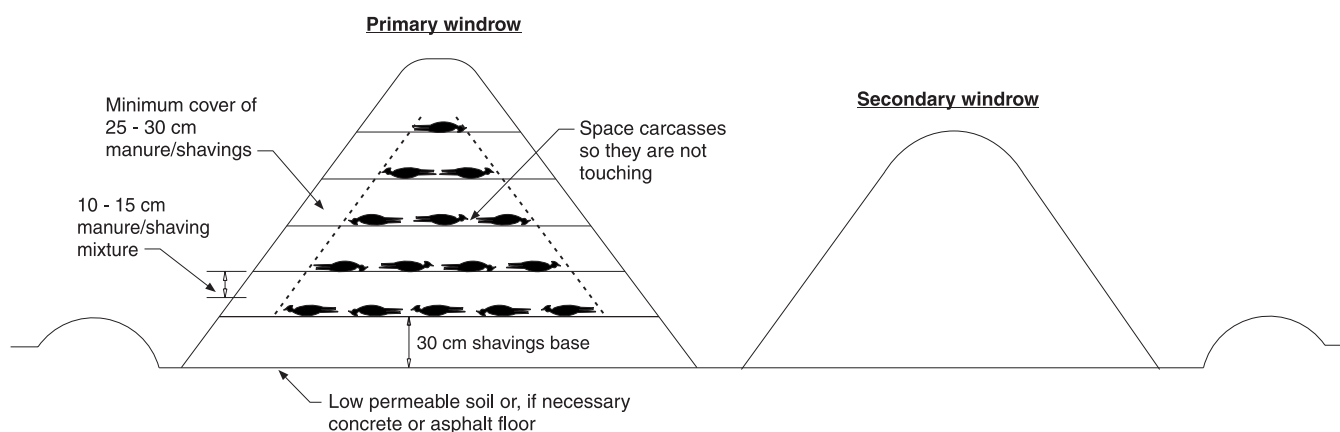


Composting Spent Layers (or Disaster Losses)

Composting poultry mortalities has been proven to be a viable disposal option. Most composting system designs are based on daily flock mortalities and usually involve covered bin facilities. However, the same composting techniques can be used for high mortality numbers, such as for disaster losses or for spent layer flocks, using an outside compost windrow. The following is the current recommended procedure for composting spent hens or disaster losses:

1. Choose a site with good drainage and a low permeability soil. A concrete or asphalt pad may be necessary for coarse soils (see the *Livestock Diseases Act, Destruction and Disposal of Dead Animal Regulation* for location requirements).
2. Spread a 30 cm deep by 3 to 5 m wide base of shavings, sawdust, or straw. Length will depend on volume of the mortality.
3. Place a single layer of dead birds on the base of shavings, making sure they are at least 25 cm from the outside edges, and that they are about 4 to 5 cm from each other.
4. Cover this layer of birds with 10 to 15 cm of substrate of about 1.5 parts (by volume) of layer manure and 1 part shavings or sawdust. The moisture content of the substrate should be about 50 per cent (free moisture on glove after squeezing a sample of the substrate, or use a commercial hay moisture probe).
5. Repeat Step 3 and Step 4 until the windrow is finished.
6. Leave the windrow untouched for the primary composting stage (4 to 6 weeks). Windrow temperatures should be monitored and they should reach over 50°C (preferably 55°C for 15 days).
7. Turn the windrow over with a front-end loader after this initial 4 to 6 weeks or when temperatures fall below 35°C. Add water if the moisture content is below 50 per cent. Re-cover the windrow with a layer of sawdust or shavings, especially if bird parts are visible. Leave the windrow for another 4 to 6 weeks for the secondary composting stage and monitor temperatures.
8. Windrow should be ready to land apply after these primary and secondary treatments. If land application cannot occur immediately, re-pile the material and allow to cure another 3 or 4 weeks.



Composting spent layers (or disaster losses)

Note: If birds are not placed in a single layer as shown, the thickness of substrate layers must be increased to 30 cm, and composting time needs to be increased to 8 to 10 weeks.

Troubleshooting guide – composting spent hens (disaster losses)

Problem	Cause	Possible solution
Temperature too cold		
	1. Too wet	1a. Mix in substrate. 1b. Protect bin from weather or shape surface to shed water.
	2. Low C:N ratio	2. Mix in carbon source, e.g., straw, shavings, etc.
	3. Too porous	3. Mix in sawdust or another small-particle substrate.
	4. Insufficient substrate cover	4. Add substrate ensuring 30 cm (1 ft) of cover.
	5. Too dry	5. Add water to bin.
Failure to decompose		
	1. Low carbon	1. Mix in carbon source, e.g., straw, shavings, etc.
	2. Mortalities layered too closely	2. Adjust pile ensuring 10 to 15 cm (4 - 6 in) of substrate between layers.
	3. Mortalities placed too close together	3. Adjust mortalities ensuring they do not touch each other.
	4. Mortalities placed too close to the side of the pile	4. Adjust bin, ensuring mortalities are placed at least 25 cm (10 in) from the edge of the pile.
	5. Lack of oxygen	5. Turn pile to add oxygen.
Odour		
A. Foul, high sulfur, organic acids	1. Too wet	1a. Mix in substrate. 1b. Protect pile from weather or shape surface to shed water.
	2. Not enough cover substrate	2. Add substrate ensuring 30 cm (1 ft) of cover.
	3. Air flow restricted	3a. Replace or mix existing substrate with a larger-particle substrate. 3b. Adjust pile ensuring mortalities are placed at least 25 cm (10 in) from the edge of the pile.
	4. Excessive crusting on surface	4. Break up crusting on the surface and avoid using substrate that is frozen or too wet.
B. Smell of decaying flesh	1. Not enough cover substrate	1. Add substrate ensuring 30 cm (1 ft) of cover.
	2. Too cold	2. Follow steps outlines above under "temperature too cold."
C. Ammonia	1. Low carbon	1. Mix in carbon source, e.g., straw, shavings, etc.
Flies		
	1. Not enough cover substrate	1. Add substrate ensuring 30 cm (1 ft) of cover.
	2. Poor sanitary conditions	2a. Remove leachate from around bin. 2b. Maintain a clean, debris-free area around compost site.
	3. Too cold	3. Follow steps outlines above under "temperature too cold."
Animals/Vermin		
	1. Inadequate protection	1a. Add substrate ensuring 30 cm (1 ft) of cover. 1b. Construct a fence around the site. 1c. Enclose bin structure.

For additional information see *Poultry Mortality Composting*, Agdex 450/29-1

Available from Alberta Agriculture Publications Office (Phone 1-800-292-5697)
or from Ag-Info Centre (Phone 1-866-882-7677)