

Best Practice Information Sheet

Organic by-products

Sheet 7.0a

Silage Liquor

Why change?

Minimising the quantities of silage effluent produced, and ensuring it is well managed, can significantly reduce costs without affecting the value of the feed ensiled. By taking action to reduce the quantity produced you can:

- reduce costs
- reduce problems of storage and handling
- minimise the risk of water pollution.



silage liquor is a serious pollution risk

Steps to success

- 1. Review your current situation** by taking account of when you make silage, the likely weather conditions, the nature of the crop to be ensiled, and the suitability of equipment and storage/baling facilities. Is the work to be completed by a contractor, with possible time constraints, or do you have freedom of timing?
- 2. Identify potential opportunities** such as:
 - wilting to at least 25% dry matter (for clamps), which will reduce effluent from grass by up to 600%
 - considering how to manage early and late cuts, which are likely to be wetter
 - reducing dependence on a contractor, who may need to ensile under wetter conditions
 - using improved mower/conditioner to promote enhanced wilting
 - using whole crop cereals/maize silage, which can be harvested to produce no effluent
 - ensiling in bales/other wraps, which at 35+% dry matter produce little or no effluent
 - roofing stores to reduce volumes of effluent.
- 3. Calculate the cost-benefit of these opportunities** by comparing the costs of acting on the opportunities you have identified with the reduction in costs of handling and land application. The rate for a driver and typical tanker is approximately £2/m³. In addition, factor in an assessment of the benefits of reducing the risk of water pollution.
- 4. Develop an action plan** giving priority to activities that will reduce costs and worry, as well as decreasing the risk of water pollution.
- 5. Implement the action plan** taking care to make certain all concerned are aware of the necessary steps. Routinely inspect and include checks on storage to remove blocks in drains and assess any leaks.
- 6. Specifically inspect** land watercourses for runoff after application because silage effluent is one of the strongest pollutants produced on farms.



Big bale silage reduces effluent production

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Silage Liquor - Practical examples

Grass wilt programme

In this example, a farmer with a herd of 120 Friesians made 1200 tonnes of grass silage in a covered clamp.

He changed from a 6-hour to a 24-hour wilt programme and thereby increased the average dry matter of his ensiled material from 20% to 25%. The amount of effluent produced was reduced by 85%.

This minimised his risk of pollution, reduced the level of management needed, saved land application costs of approximately £130/year and, with a further cost saving, reduced the need for the purchase of additives.



Costing examples

Ensiled grass at 15% dry matter will produce some 33m³ of silage liquor for each 100t ensiled; 20% will produce 22m³/100t; and 25% approximately 11m³/100t. Reducing the quantity of liquor produced can reduce the cost of providing extra storage of £10-20/m³. (N.B. minimum storage regulations.)

Spreading after 1:1 dilution, by low rate irrigation or spreader application at a maximum rate of 50m³/ha (4500 galls/acre) of diluted liquor would cost £2.00-3.75/m³.

Although silage liquor has a relatively low nutritional value (2kg N/1000l; 1kg P/1000l and 1.5 kg K per /1000l (m³), fresh liquor can be used to feed livestock (normally cows or pigs), providing a short-term cost-benefit in both nutrition and reduced disposal costs.



Manage liquor carefully in the first three days when 50% is produced and check for storage leaks

Remember

- Minimising silage effluent production reduces costs, storage and handling problems, and pollution risk.
- Examine land watercourses for runoff after application because silage effluent is one of the strongest water pollutants produced on farms.
- Make certain all concerned are aware of precautionary measures.
- Routinely inspect and check on storage to remove drain blocks and any leaks.

For further information: Defra (www.defra.gov.uk), Environment Agency (www.environment-agency.gov.uk), ECSFDI (<http://www.defra.gov.uk/foodfarm/landmanage/water/csf/delivery-initiative.htm>), Natural England (www.naturalengland.org.uk), Cross Compliance Helpline 0845 345 1302 (www.crosscompliance.org.uk) and ART (www.associationofrivertrusts.org.uk)



This information sheet is part of a series providing farmers with advice on land management practices to protect water bodies, produced by Association of Rivers Trusts with support from the England Catchment Sensitive Farming Delivery Initiative. The advice will also enable farmers to use farm resources more efficiently and help meet Nitrate Vulnerable Zone and Soil Protection Review requirements under Cross Compliance and environmental regulation.



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