Managing feedlot ponds for heavy rainfall events and flooding

Feedlot-controlled drainage areas can reach or exceed capacity during heavy rainfall and flooding events. Intensive livestock operators can reduce the risk of pond spillages and manage the associated environmental risks by implementing best management practice.

Recommended best management practices

Management practices that minimise the risk of effluent ponds spilling are:

- regular irrigation to ensure the ponds are maintained empty for most of the year
- regular pen cleaning to ensure the majority of manure is removed before it is washed into the sedimentation basin
- managing and maintaing the sedimentation basin in a way that maximises the solids collection capacity and minimises the time it takes for the basin to dry out.

Sedimentation basin and effluent holding pond volumes are designed to handle the stormwater run-off including effluent and sediment loading from controlled drainage areas. Regular cleaning is important, particularly through de-sludging the effluent system. The appearance of manure islands, vegetation growth, or pink colouration of effluent due to anaerobic digestion, are all useful indicators that it is time to de-sludge.

De-sludging can be completed by a dragline, agitator and pump or excavator—each method has its own benefits. Some effluent should be left in the bottom of the pond after cleaning to protect the liner and maintain the bacterial population ready to digest the organic matter in the next inflow.

Effluent irrigation on the waste utilisation areas can be a useful activity to control odour and volumes in the ponds as a preparation prior to summer rainfall. This can help reduce pressure during rainfall events where irrigation practices become difficult.

Managing a minimum freeboard of 0.9m between the weir crest and the crest of the holding pond embankment is recommended unless your environmental authority condition specifies otherwise.

Most operational normal feedlot effluent holding ponds are built to spill no more frequently than an average one in 10 years rainfall event.

Managing a pond spillage

If your feedlot pond spills notify the Department of Agriculture and Fisheries by phone on 13 25 23 or email at livestockregulator@daf.qld.gov.au.

It is the obligation of the environmental authority holder to manage ponds appropriately to minimise the risk of effluent pond spillages and to notify the Department when a spillage occurs.

Following notification of a spillage, the Department will recommend the collection of water samples from the pond spill location, and upstream and downstream of any point where the effluent enters a waterway.

More information

National Guidelines for Beef Cattle Feedlots in Australia (3rd Edition), June 2012, Meat & Livestock Australia mla.com.au

Beef cattle feedlots: waste management and utilisation, September 2015, Meat & Livestock Australia mla.com.au

Contact

The intensive livestock environmental regulation unit in Toowoomba is responsible for compliance and development assessment for feedlots in Queensland. Call 13 25 23 or email livestockregulator@daf.qld.gov.au.