

## ADOPT BATCH STORAGE OF SLURRY

first DRAFT

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### *Description*

- Store batches of slurry for at least 90 days before spreading on fields.
- Do not add fresh slurry to the store during this storage period.

### *Rationale, mechanism of action*

Faecal Indicator Organisms (FIOs) die off during storage [1]. There are fewer microorganisms in the material that is spread and therefore less risk of FIOs entering water bodies *via* surface run-off or percolation to field drains. Numbers of FIOs decline during storage and this can be an effective means of reducing bacterial numbers in the slurry. It is less effective for controlling the protozoan parasite, *Cryptosporidium*. If there is run-off or percolation into field drains following slurry application, the transported material will contain many fewer FIOs compared with 'fresh' slurry. The method is primarily directed at reducing pathogen loads and will have little effect on nitrate or P losses.

### *Applicability*

The method is applicable to livestock farms that produce slurry. Potential benefits would be greatest on sloping ground where the risk of surface run-off is greatest and on soils where drainflow is likely to occur following slurry spreading. The method requires that slurry is stored without any additions of fresh material during the 90-day storage period, otherwise the added slurry would contaminate the stored material with fresh, viable microorganisms. In most cases, this will require more than one store.

### *Effectiveness, including certainty*

N: Nil effect.

P: There will be no effect on P losses.

FIOs: 40% reduction on the dairy and indoor pig farms but has less impact on the latter because slurry is already stored for 3 months.

Estimates of effectiveness at the farm-scale assume that the method affects 85% of the farmed area in the Dairy system, and 100% of land within the Indoor Pig system.

### *Time frame*

Once the additional slurry storage has been constructed, the method will be fully effective for FIOs after 90 days.

### *Environmental side-effects / pollution swapping*

Unless precautions were taken to reduce volatilisation (e.g. roofing the store), constructing a second store would increase ammonia losses during storage because of the greater surface area contributing to ammonia emissions [3].

### *Relevance, potential for targeting, administrative handling, control*

#### *Costs: investment, labor*

For additional slurry storage, where no storage currently exists, the amortised cost is calculated per tonne slurry pa for 20 years plus a reception pit at capital cost. The figure calculated for cows excludes youngstock, since they will be on straw. The figure for sows will include slurry from weaners. Capital costs will be amortised.

### *References*

- [1] Cuttle, S., Macleod, C., Chadwick, D., Scholefield, D., Haygarth, P., Newell-Price, P., Harris, D., Shepherd, M., Chambers, B. & Humphrey, R. (2006). An Inventory of Methods to Control Diffuse Water Pollution from Agriculture (DWPA) USER MANUAL. Defra report, project ES0203, 115 pp. p. 56  
[http://www.cost869.alterra.nl/UK\\_Manual.pdf](http://www.cost869.alterra.nl/UK_Manual.pdf)
- [2] Chambers, B.J. (2001). Implications of potential measures to control pathogens associated with livestock manure management. Final Report for Defra, Project WA0656.
- [3] Newell-Price, P. & Morvan, T. (2008). Adopt batch storage of solid manure. Factsheet COST 869.  
[www.cost869.alterra.nl/Fs/FS\\_UK28\\_batch\\_store\\_solid\\_manure.pdf](http://www.cost869.alterra.nl/Fs/FS_UK28_batch_store_solid_manure.pdf)