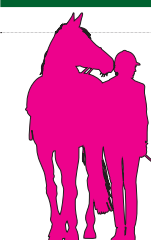




**EXCELLENCE IN EQUINE NUTRITION**

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# Horse Sense

Practical advice for all horse owners

Edited by Rachel Moriarty

Contact: [rmoriarty@theirishfield.ie](mailto:rmoriarty@theirishfield.ie)



# Reduce water pollution on your farm



Teagasc equine specialist **Wendy Conlon** has some practical tips for managing and protecting water on the farm over the winter period

**T**HE Nitrates Directive, implemented by the Nitrates Action Programme, is the key agricultural measure in Ireland's River Basin Management Plan for preventing and reducing water pollution from nutrients (nitrogen and phosphorus) arising from agricultural sources.

For those who apply for the basic payment scheme, the regulations are also part of 'cross compliance'.

In this situation, not only is someone breaking the law if they do not follow the regulations, but they are also putting their basic payment, areas of natural constraint, and other scheme payments at risk.

One aspect of the regulations pertains to how farmyards are managed.

The requirements within the regulations provide a pathway for good management practices for all yards, with the aim to prevent and reduce water pollution.



**Manure pit with channel to divert effluent to underground tank**  
Wendy Conlon

## Key aspects of farmyard management to reduce water pollution:

### 1. Keep soiled water to a minimum:

- Divert all clean water to a clean water outfall (not piped directly to drains/watercourses).
- Prevent clean water from becoming soiled.
- Keep the amount of soiled water produced to a minimum.

stored to prevent run-off or seepage, directly or indirectly, into groundwater or surface water until applied to the land. All storage facilities must be kept leak-proof and structurally sound.

### 2. Collect effluents and organic fertilisers:

- All organic fertilisers, effluents and soiled waters must be collected and

### 3. Maximise storage capacity:

- Eliminate clean water entering storage tanks. Separation of clean and dirty water requires careful planning, and regular maintenance of guttering and down pipes.



**Ensure all paddock gateways are at least 5m away from dry drains/watercourses**

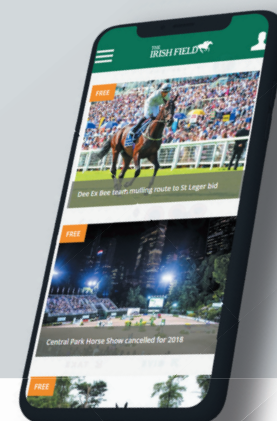
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## How much storage capacity is required?

Firstly, list the existing manure pit and tank storage facilities and their capacity. Get professional advice on required storage capacity.

If capacity for current livestock manure is inadequate the options are to build additional storage, rent storage off the holding with exclusive access; or reduce livestock numbers.

### Farm yard manure (FYM)

The quantity of FYM produced by an adult horse is determined as 0.59 metres cubed of dung per horse per week.

This is based on straw usage of 4kg per day, however where for example 12kg of straw is used daily, FYM output also increases 2.5 fold. The guide figure is used irrespective of straw/shaving/sawdust/paper bedding, etc.

Calculate minimum storage capacity by multiplying the number of horses by 0.59 metres cubed by the number of weeks in the required storage period (dependant on location as per table 1). If other livestock are present their storage requirements must also be factored in.

It is expected that FYM will settle to about 60% of its original volume in uncovered manure pits.

In calculating the capacity of manure pit required where an unroofed structure is used the total capacity required can therefore be decreased by 40%.

If using an unroofed structure a connected storage tank must accommodate the rainfall and subsequent seepage from the FYM as it's then deemed slurry, as well as any excess effluent coming from the bedding itself.

This must be stored for the relevant full period in the accompanying table. In light of this the roofing of such structures may be a good option to consider to reduce tank volume requirements.

### Soiled water

Soiled water includes water from contaminated concreted areas, washing of machinery, and hard standing areas and becomes slurry if mixed/stored with slurry. It is important to minimise soiled water by diverting clean water, and preventing soiled water from entering clean areas.

There must be capacity to store the equivalent of at least 15 days of soiled water at any time of the year. There must be 200mm freeboard in covered tanks and 300mm freeboard for an uncovered tank.

When calculating the storage capacity of a tank, an allowance for the average net rainfall in the county must be made. Also an allowance for any soiled water coming from yard surfaces must be accounted for (see Table 2)

Soiled water generated from washing stabled areas is calculated to provide a minimum capacity of 0.3 metres cubed per week (accommodates six horses), with an additional 0.05 metres cubed per week for each additional horse, with 15 days of storage required.

### Farm roadways

There is now a focus on breaking the pathway of nutrient and sediment loss to waters from roadways by:

- Preventing direct run-off from farm roadways to waters.
- Cambering the roadway directing water to one side into the field.
- Reducing the speed of water flow through earth bundling along the road.

### Managing winter turnout

Manage grazing livestock to ensure the risk of poaching is minimised while also minimising soil erosion and run-off waters generated.

Fields used to out-winter stock should be the drier fields, preferably without watercourses present, and certainly not subject to flooding, to prevent sediment and nutrient run-off and protect the health of stock.

Additional best practice for water quality protection:

- Paddock gateways should be at least 5m away from dry drains/watercourses.
- Water troughs should be at least 20m away from any dry drains/watercourses.
- Drinking points from watercourses should be fenced off to reduce access.
- Supplementary feeding points should be at least 20m away from dry drains/watercourses.
- Field storage of FYM is not permitted during the non-spreading periods in Table 3.

### Precautions when applying fertilisers

Do not spread in the closed period applying to your location (Table 3). All areas are now closed for all fertiliser or farmyard manure application.

Spread chemical fertilisers, livestock manure and other organic fertilisers, effluents and soiled water as accurately and evenly as you can.

Do not use an upward-facing splash plate or sludge irrigator on a tanker.

Do not spread organic fertilisers or soiled water from a road or passageway, even if the road or passageway is on your own holding.

Do not spread chemical fertiliser on land within 2m of a surface watercourse.

Look up the correct buffer zones for

Table 1: required storage periods for farmyard manure

Zones	A (Carlow, Cork, Dublin, Kildare, Kilkenny, Laois, Offaly, Tipperary, Waterford, Wexford, and Wicklow)	B (Clare, Galway, Kerry, Limerick, Longford, Louth, Mayo, Meath, Roscommon, Sligo, and Westmeath)	C (Donegal and Leitrim)	C (Cavan and Monaghan)
Storage Period	16 weeks	18 weeks	20 weeks	22 weeks



Water troughs should be at least 20m away from any dry drains or watercourses

different kinds of water bodies (lakes, rivers, wells, etc.) and do not spread soiled water, effluents, farmyard manures or other organic fertilisers inside these buffer zones.

### Do not spread chemical fertilisers, livestock manure, soiled water or other organic fertilisers when:

- Land is waterlogged
- Land is flooded, or likely to flood.
- Land if frozen or covered with snow.

➤ Heavy rain is forecast within 48 hours.

Around slopes steeply and there is risk of water pollution when factors such as surface runoff pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account. Protecting water resources is a collective responsibility, not only to protect aquatic environments but also drinking-water supplies. Each individual enterprise can contribute to this end.

Table 2: Average net rainfall during the specified storage period

County	Millimetres per week	County	Millimetres per week
Carlow	24	Cavan	27
Clare	32	Cork	37
Donegal	38	Dublin	17
Galway	34	Kerry	45
Kildare	18	Kilkenny	23
Laois	22	Leitrim	33
Limerick	26	Longford	23
Louth	20	Mayo	40
Meath	19	Monaghan	23
Offaly	20	Roscommon	26
Sligo	32	Tipperary	27
Waterford	31	Westmeath	21
Wexford	25	Wicklow	33

Table 3: Prohibited application periods for spreading fertilisers to land

(Dates are inclusive)

Zone	Chemical Fertilisers	Organic Fertilisers	Farmyard Manure
A	Sept 15th – Jan 12th	Oct 15th – Jan 12th	Nov 1st – Jan 12th
B	Sept 15th – Jan 15th	Oct 15th – Jan 15th	Nov 1st – Jan 15th
C (Donegal and Leitrim)	Sept 15th – Jan 31st	Oct 15th – Jan 31st	Nov 1st – Jan 31st
C (Cavan and Monaghan)	Sept 15th – Jan 31st	Oct 15th – Jan 31st	Nov 1st – Jan 31st

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The number of days water storage you need