



Fact Sheet 4:

## Effluent system design

### Key messages

Effective effluent systems achieve the following objectives:

- All effluent is captured,
- The effluent volume is minimised,
- Solids and grit are managed,
- Provide adequate storage capacity,
- All effluent is utilised, and
- The system is people friendly and safe.

An effluent system must grow as a farm grows. Any increase in herd size, increased use of supplementary feed, or more time spent on pads or yards will result in additional effluent which needs to be managed through the system. When planning any of these changes, it should also be a trigger to review the effluent system. It is worth keeping in mind the objectives that an effluent system should meet:

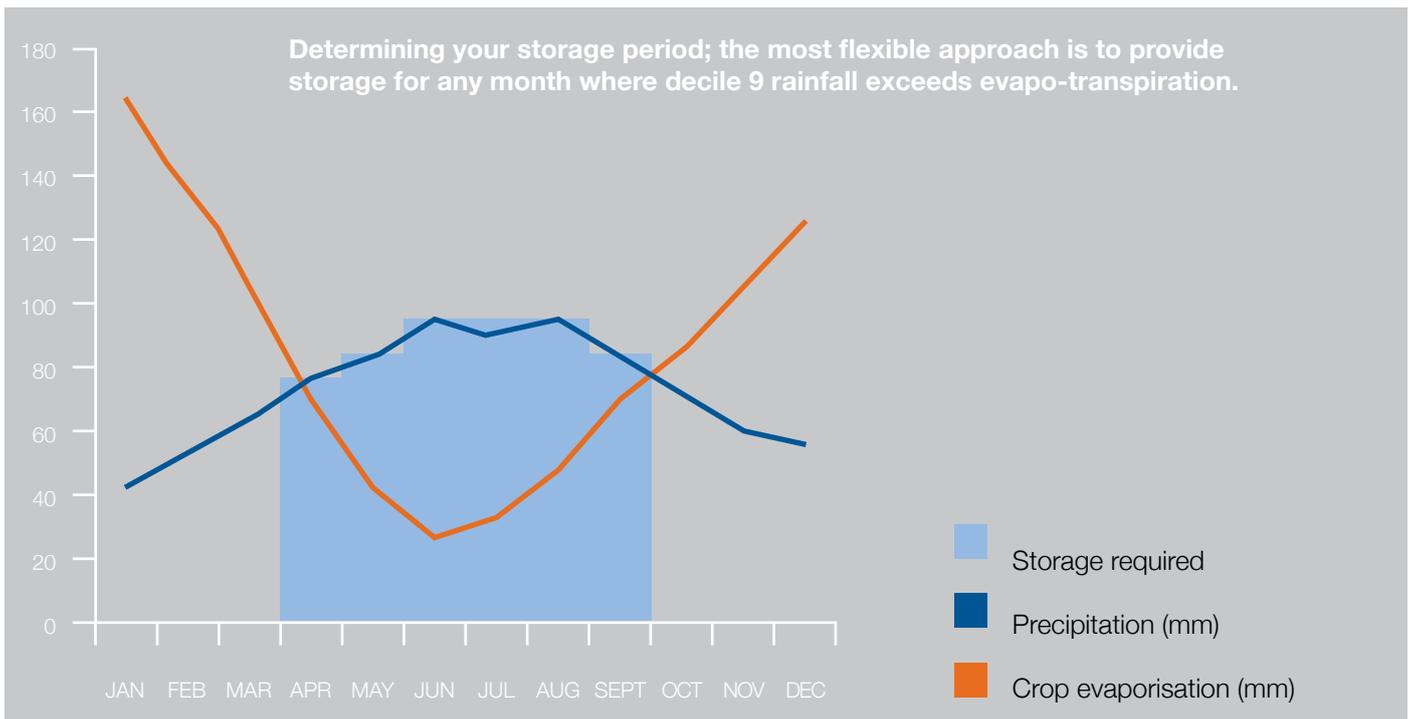
- All effluent is captured. The system needs to be able to capture the effluent from all areas including the yard and feedpad. Concreted areas need to have nib walls to prevent any effluent losses.
- The effluent volume is minimised. This can be through recycling effluent for yard wash, or diverting fresh rainwater away from the system. It is also beneficial to fix any leaks and reduce unnecessary water use.
- Solids and grit are managed. Stone traps capture sand and gravel and prevent it adding to wear and tear on pumps and irrigation equipment. At some point, the solids have to be dealt with; whether they be removed in a separator, settled and removed as sludge from a pond or distributed through a direct application system. If the system cannot cope with solids, then it will not be reliable.

- Provide adequate storage capacity. A storage pond must be large enough to store effluent when conditions don't suit to apply it to land, or life gets too busy on the farm. The pond should be sited well above the groundwater table, and constructed in a way that does not leak or leach effluent. A fence is a good idea to exclude stock and people.



- All effluent is utilised. The best systems will make full use of the nutrients captured, by returning them over a large area to pasture or crops in a way which matches agronomic needs. Refer to Chapter 13 “Using dairy effluent” in the Dairy Soils and Fertiliser Manual (link to be finalised) for more information.
- The system is people friendly and safe. The system must be safe for operators and easy to maintain, with minimal time and labour demands. All staff involved with the effluent system need to be trained in its use and maintenance, as well as any safety considerations. It is possible for a good operator to get the best from a poor system, but a poor operator will never get the best from a good system.

There is no single best system; a number of different approaches may be used to successfully manage effluent.



#### References:

*Dairy Soils and Fertiliser Manual, Chapter 13 Using Dairy Effluent.* <http://fertsmart.dairyingfortomorrow.com.au/dairy-soils-and-fertiliser-manual/chapter-13-using-dairy-effluent/>

*Dairy Effluent: Building and Operating a Safe System (2009).* DEPI Note No. AG0444. [www.dpi.vic.gov.au/agriculture/dairy/managing-waste/safe-effluent-systems](http://www.dpi.vic.gov.au/agriculture/dairy/managing-waste/safe-effluent-systems)

[View Effluent system design on dairy farms video](#)

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