Septic manure ponds at Lower Kalgan

R Sprivulis

Follow this and additional works at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4

Part of the Construction Engineering and Management Commons, Dairy Science Commons, Other Animal Sciences Commons, and the Other Biochemistry, Biophysics, and Structural Biology Commons

Recommended Citation
Available at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4/vol8/iss7/8

This article is brought to you for free and open access by Research Library. It has been accepted for inclusion in Journal of the Department of Agriculture, Western Australia, Series 4 by an authorized administrator of Research Library. For more information, please contact jennifer.heathcote@agric.wa.gov.au, sandra.papenfus@agric.wa.gov.au, paul.orange@dpird.wa.gov.au.
SEPTIC MANURE PONDS AT LOWER KALGAN

By R. SPRIVULIS, Agricultural Adviser—Albany

BETTER pastures, increasing herd sizes and better quality cows are all contributing to increased production of skim milk and an expansion in pig and calf raising in the dairying areas.

However, this increase in numbers in individual farm projects has brought a new problem—dung and urine disposal.

The construction of intensive piggeries with slatted floors and provision for floor feeding is allowing larger numbers of pigs to be raised.

It is obvious that manure must be removed effectively, quickly and easily, to minimise risk of disease infection and of parasitism and to avoid conditions suitable for the breeding of flies.

Of the several manure disposal systems known, handling manure in liquid form is gaining popularity. It offers relatively cheap and easy manure removal where plenty of water is available. The principle is relatively simple and is shown in the diagram.

A two-pond septic system has been in operation on the property of E. R. Bocquet & Son at Lower Kalgan for nearly a year.

**Primary dam**

The dam or earth tank receiving the inflow from the piggery is at least 8 ft. deep and all the dung and urine is regularly washed into it. After a while some of the harder digestible material forms a thick crust on the surface which

Typical modern intensive piggery
acts as in the same way as a lid on the ordinary household septic tank. The decomposition taking place in this dam is caused by bacteria living in the absence of air. Such a dam must be large enough to hold all fresh supplies.

The inflow pipe should be below the surface so that fresh supplies do not break the crust, allowing gasses to escape and cause offensive smells. The new material must be deposited a few feet from the wall to avoid accumulation near the edge of the pond and there should be provision for directing the liquid containing partially-digested material into a secondary pond.

The overflow must be well away from the inlet pipe and below the surface crust to avoid solids passing direct into the secondary pond.

Since the primary pond will need occasional emptying of silt and sludge, its

---

**Secondary Pond**

- **Aerobic conditions**: 3' 6"
- **Well Decomposed Effluent**

**Primary Pond**

- **Overflow Pipe**
- **Undigested Organic Matter**
- **Crust**
- **Inflow Pipe**
- **Anaerobic conditions**: 8'
- **Silt Accumulation**
- **Partly Decomposed Effluent**

---

Septic manure ponds. Note (a) Inflow pipe leading into the primary pond. (b) Crust formation of the primary pond. (c) Clear liquid in the secondary pond.
length should be three times its width. This allows for a dragline to be used for de-sludging.

Secondary Pond

In the secondary pond bacteria acting on the remaining material require free oxygen. This oxygen is absorbed into the liquid from the air or is released in the water by algae in the water.

To be effective oxygen producers, the algae must be in relatively shallow ponds in which sunlight penetrates to the bottom. A suitable depth is 3 ft. 6 in. The larger the surface area the more effective are these ponds. During the summer months evaporation may balance the inflow from the primary dams. If pumping out is necessary, the liquid should be pumped onto freely draining soil. This liquid contains considerable nutritive value for pasture plants.

MR. E. R. BOCQUET'S EXPERIENCE

The approximate dimensions of Mr. Bocquet's septic dam system are:

Primary pond—
2 chains x 1 chain x 8 ft.

Secondary pond—
2 chains x 1½ chains x 5 ft.

This system has effectively handled all manure from 20 breeding sows and their litters raised as baconers for nearly a year without any special attention.

COMMENTS

The pond size depends on the number of pigs kept. The figures often quoted in literature for the size of anaerobic dams range from about 60 cu. ft. to 120 cu. ft. per pig.

PRIMARY POND:
15 sq. ft. per pig with a depth of 8 ft.
This gives 120 cu. ft. per pig.

SECONDARY POND:
15 sq. ft. per pig with a depth of 3 ft. 6 in.

For effective operation, provision must be made for the diversion of excessive runoff from rain. At other times this runoff might be used for flushing the inflow drain. Straw, sawdust and other bedding must be kept out to prolong the effective life of the primary dam. It is very likely that the secondary ponds will need to be emptied in winter when evaporation is low and rainfall is high.
5 machines in 1 — the year 'round work horse

SLASHES NOW!
CUTS HAY LATER!

PAGE
multi-purpose
rotary slashers

Topping, Mulching, Slashing, Stubble Shaving
Making Meadow Hay and Lucerne Hay
Windrowing and Conditioning

Haymaker Models 5 ft. and 6 ft.
Other Models from 4 ft. to mammoth 15 ft. 6 ins.
As low as £5 a year maintenance

Let Page put more money in your pocket — get free details now!

name and address

A. V. Page Pty. Ltd.
Princes H’way, Springvale, Victoria. 546 3144

Interstate offices:
N.S.W.: 84 Dartbrook Road, Auburn. 648 1557
Qld.: 69 Mayne Road, Mayne. 51 5347
S.A. & W.A.:
Elders-G.M., Adelaide 51 0331; Perth 21 0141

Please mention the "Journal of Agriculture of W.A." when writing to advertisers