

Ventilating the Cow Barn

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superstructure then it might be necessary to change positions of BB to CC, where shafts would need to be constructed as shown in Fig. 2 by dotted lines BCD. The fact of the outlet shaft changing directions at C and D will not interfere materially with its efficiency. These outlet shafts, provided they are staunchly built as described further on, may take almost any desired course so long as it is always more or less upwards.

The area indicated, 1 foot x 2 feet each, or 4 square feet for the two outlet shafts, is somewhat greater than is really necessary, but it is much better to have shafts slightly larger than any smaller than the minimum of 15 square inches per cow mentioned above.

(The intakes A A A A might, if necessary, be changed to pass under or

thru walls at D D D D with slightly increased dimensions in each case, say 7 inches by 12 inches, to make up for one opening less. This new arrangement would be advisable in case outlet openings had to be placed at C C.

In the intakes fresh air enters at 1, passes under wall and enters stable at 2, with an upward tendency. The wall, 3, should be about 6 inches thick, and on this wall should be built the little guard shown at M in Fig. 2. The inner wall corresponding to 3 need not be over 4 inches thick.

Fig. 2, showing a stable in cross-section, will indicate the best method of building walls and ceiling, and also illustrate two different methods of introducing the fresh air in the Rutherford System. There is very little to choose between these two methods; that on the left is somewhat more cheaply installed and can be introduced at any time, while the method on the right is

probably somewhat more effective, slightly more expensive, and must be installed when the building is being erected. The following explanatory paragraphs will help to a full understanding of the features illustrated:—

Foul Air Outlet

The outlet shaft for foul air, W D, should be in duplicate, and should be about 1 foot by 2 feet inside measurement. The best construction is boards running vertically, two ply, with inch air space and two papers between. The opening at the top should be roofed (see Fig. 2). The roof should be supported on four posts, A A, leaving a clear space about 15 or 16 inches between top of shaft and bottom of roof, B. The amount of air to escape by these shafts in any given time may be controlled by means of a key as at E. The key may be regulated by cords F F. The key should never be entirely

closed. Where the shafts are large enough there is no objection to their being used as chutes for feed or litter, but care should be taken to so hang the door as to insure its remaining tightly closed when not held open to allow of shaft being used as a chute.

Fresh Air Intake

The fresh air inlets require careful consideration. The method on the left is very simple of installation. The passage thru from H to I should be about 12 inches by 6 inches, the greater dimension being horizontal. K is a protection or roof, H the intake, I the outlet into the stable thru which the air passes with an upward tendency. J is a guard or band so placed as to direct air currents upwards. To do this it will need to extend about 4 inches above top of opening thru wall. It will, of course, be nailed to the projecting 6 inch sides of this fresh air shaft inside the building, just as K will be nailed to the same sides outside the building. These passages might be controlled by means of small keys or hinged covers, but it is not usually necessary or advisable to so control the intake shafts.

The method on the right hand side (Fig. 2) admits air by the passage N, 12 inches by 6 inches below the level of the floor. Air enters this passage L under shelter of the snow and rain guard M and flows into the stable at O, with an upward tendency. The cement or wooden guard X is to prevent dirt or dust being knocked or swept in. The top or opening should be protected by a grating of some description. It is possible, but seldom necessary or advisable, to provide these inlets with keys or controls. If it is found necessary to use some system of control, then the control P had better be outside the building but inside the guard cabin M, where it can be regulated by a cord passing out at Z.

The careful installation of this system of ventilation, with either method of fresh air intake, will ensure an abundance of good fresh air at all times, provided it is allowed to operate. If, however, it is left to the mercies of the average hired man, it, like any other system, will be found useless.

To get best results in ventilating any stable and to ensure a comfortable, dry building possible of being kept well ventilated, clean and hygienic, attention to the following small details in construction will be found very helpful:—

1. Use simple fixings.
2. Ceil under joists.
3. Put in all the windows the superstructure will permit.
4. Let windows be high.
5. Hinge windows in bottom at C.
6. Use chains at V to allow them to open inwards at top.
7. Provide double windows for winter.
8. Walls should be built to include air space. Starting from the outside inward, the following construction for stable walls will be found satisfactory: Batten, inch dressed lumber, two tar papers, studding 2 by 6 and air space two tar papers, V-joint.

Construction of the Ventilating Flues

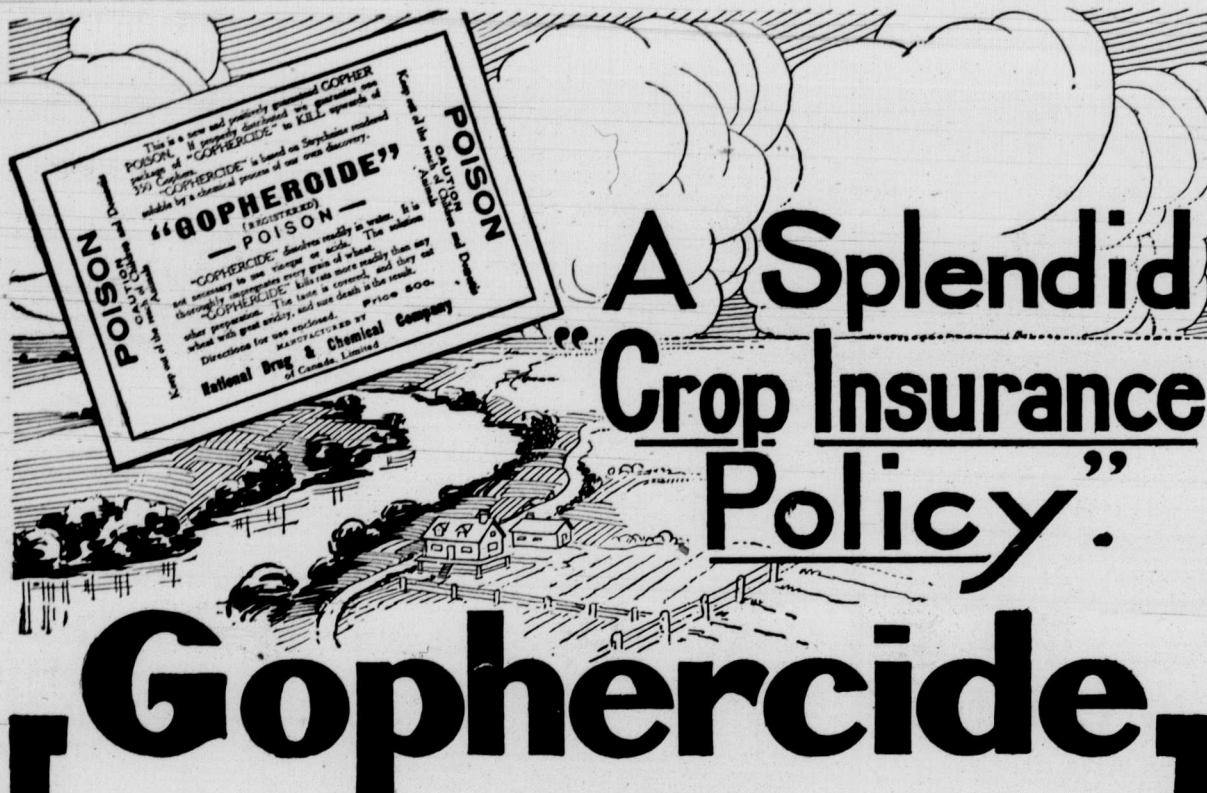
A good ventilating flue should have all the characteristics of a good chimney. It should be constructed with airtight walls, so that no air can enter except from the stable. It should rise above the highest portions of the roof, so as to get the full force of the wind.

Stronger currents thru the ventilators will be secured by making one or more larger ones than where many small ones are provided, and it is usually best to have as few as possible, and not leave the impure air in distant parts of the stable.

A good form of ventilating flue is made of half-inch matched stuff with building paper or deadening felt between to make it airtight, for every hole and crack lessens the ventilative power.

A dead air space in wall of flue prevents cold from penetrating thus precluding the possibility of condensation in flue.

"Why didn't you toot your horn if you saw the man in the road ahead?" "I figured," replied the chauffeur, "that it would be more merciful if he never knew what struck him."—From Judge.



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YOU believe, of course, in insurance against hail, though the best it can do is to partially repay you for the damage to your crops.

"Gophercide" provides an insurance against gophers that PREVENTS the damage you would otherwise suffer.

Until our chemists devised Gophercide, strychnine was the most effective gopher poison known. Its drawbacks were its intense bitterness and the trouble of dissolving it and soaking it into the grain.

Here are a few examples of what Gophercide did on Western farms last spring:

Redvers, Sask., May 8th, 1914.

Gophercide is all right. I used two packages on the east half of one section, and strychnine on the other half of the same section, and the Gophercide was by far the most effective.

Yours truly, J. R. SPROULE.

A gallon of wheat soaked over night in half a gallon of water in which a 50c package of Gophercide has been dissolved, will kill 350 gophers. Even though they do not get the wheat for days, it will get them just the same.

If by any chance your Druggist should not have Gophercide on hand, write for it to our nearest Branch, enclosing 50c. for each package required.

National Drug and Chemical Co. of Canada, Limited, Montreal.

Branches at Winnipeg, Regina, Calgary, Edmonton, Nelson, Vancouver, Victoria, Toronto, Hamilton, London, Ottawa, Montreal, St. John, Halifax.

GOPHERCIDE is a preparation of strychnine in which these faults are overcome. It is 80 times as soluble as strychnine, dissolving readily in warm water, without the use of vinegar or acids. Preparing it is very easy, and the solution soaks right into the wheat and stays there.

GOPHERCIDE is quite free from the bitter taste of strychnine, so that the gophers eat the poisoned grain greedily -- and it kills them quick and sure.

Neville, Sask., June 6th, 1914.

I used the two packages of Gophercide mixed according to your direction, and the next day I was surprised to see the dead gophers lying all over. I have been using gopher poison for years, and the Gophercide is the best I have ever used.

Yours truly, J. M. MINOUX.