

Stable Ventilation Plan.

To the Editor FARMER'S ADVOCATE:

SIR,—The construction of the ventilation in my cow stable (size of basement 36x60) consists of 7-inch tile extending through the wall and along under the feed alley and out through the opposite wall. This channel is always full of fresh air, and can be regulated with registers on outside of walls. As the floors are built of Queenston cement, I elevated the feed alley in order to form the back of the manger. I have 1-inch pipe leading from the tile to the partition block of the mangers. In this way a current of fresh air flows in as the heated air ascends through ventilators in the mows. In this way I can ventilate my cow stables thoroughly without opening windows or doors, avoiding cold drafts over my cows' backs. Previous to this plan of ventilation being put in, when I would open my cow stable in the morning the air would be so foul that it was unbearable, and now the air is wholesome always. This system of ventilation was devised by Mr. Isaac Usher, of Thorold, and while it is somewhat simple and very cheap in its construction, it is perfectly satisfactory.

Ontario Co., Ont.

W. J. DEVITT.

SIR,—On page 111, March 1st ADVOCATE, "J. A. L." asks for system of ventilation for stables. We are putting in Usher's system and are thoroughly satisfied that it is right. If I were building a new barn I should have 8-inch tile run through beneath the center of feed alley, opening through both the outside walls, with pipes of inch gas pipe (waste pipe), costing not more than two and a half cents per foot, connecting the tile tunnel with the stables between each two cattle. The ends of these pipes are perforated where the air escapes into the stable. The openings above to remove the foul air may be made of 10-inch boards carried through roof. I am not certain how many of such might be needed, as this part I have to finish. Having the tile and pipe in the cement, we have a starting point, and can vary as circumstances demand. If air should not be warmed enough coming through tile and pipe, then extend tile underground for a distance. Be sure that you have a way of bringing in the fresh air and distributing it to the stock. It is a simple matter to get the foul air away. Such a scheme as I have outlined need not cost more than about 40c. per animal. Of course, you must use a cement floor and a raised feed alley to do as I have indicated.

ELMER LICK.

Ontario Co., Ont.

Breaking the Road Colt to Harness.

In breaking a colt to harness, we always prefer to give him his first few lessons double, along with a free, sensible, fast-walking horse. A light front bobsleigh answers well for several lessons. As soon as the colt has become used to harness, the bit, etc., and has ceased to be afraid of the driver or vehicle, and has learned to go along with his mate like a horse should, we feel no hesitation in hitching him singly to a cart. It is safe for the first few times to use a kicking strap, being careful that it is properly adjusted about half way between the roots of the tail and coupling, and fastened in the proper position to prevent slipping either way, then buckled loosely to the shafts.

It is not well to take long drives at first; in fact, the colt should be returned to the stable feeling fresh rather than weary. Two short drives in a day are much to be preferred to a long, wearisome trip. It is always bad policy to drive away a distance and then turn around and return by the same road. It is much better to go around a block, a different one at each time, however, so far as practicable, so that he will not acquire notions of his own as to where he should go or turn.

Look well to the colt's feet. Never under any circumstances allow him to become footsore, because if he does it will seriously affect his gait by causing him to step short and "tied up." As soon as the toes begin to break up put on light shoes or tips weighing from 5 to 8 ounces each. Heavy shoes are apt to cause the colt to become leg weary and hit himself—a habit bad to overcome when once acquired. A tip is a thin plate which passes around the hoof about two-thirds of the way to the heel; their advantage is lightness, while they protect the toes, which is all that is required in colts. Should the heels show soreness, light plates of the ordinary sort should be at once put on. A mistake often made is to shoe the colt much heavier in front than behind, with the idea of improving his action. It is much safer to copy nature by endeavoring to keep him balanced than to force a condition which an over-anxious, inexperienced driver may seek to obtain.

Mr. David Birrel's New Stock Barn, Ontario Co., Ont.

The fine barn and stables, the property of Mr. David Birrel, the well-known breeder, drafted on this page, need very little explanation beyond that contained in the plans. There are two iron rods running the full length of the barn for hay fork and slings—one in the center and one half way between the north purline post, which is 33 feet high, and the north main post, which is 18 feet 6 inches high. The bottoms of all mows are filled with hay, except the small mow in center, which is filled to the top, so that it can be got at when the others are covered with grain. The passage from one threshing floor to the other is floored over, same height as the granary, and the cut feed house in center of barn. Stone wall is 9½ feet above the level (or above ground), the windows are very large—about 3 feet by 4 feet. There are three large cupolas: one large glass one in center of barn, which lets in a lot of light; the end ones are connected with the stables by ventilators. The silo is not yet built, but place is left in stone wall for it. The cistern behind the silo is for threshing-water.

The Feeding Value of Ensilage.

An interesting question has arisen among some of our prominent feeders, through the Macpherson correspondence, as to the valuation per ton of corn ensilage, some putting it at \$3, others considering that too high. Reference is not made to the cost of ensilage in the silo, which is usually put at from \$1.00 to \$1.50 per ton. Its feed value must vary greatly when ensilage from well-matured, well-

consider corn silage made from well-eared, ripe corn to be worth from one-fourth to one-third as much as meadow hay, ton for ton.

"Comparing the dry matter in 100 lbs. of either food stuffs, we find, on the average, about 26 lbs. in corn silage and about 84 lbs. in meadow hay; the ratio here is as 1:3.2. If we consider the digestible components of the two food stuffs, we have, on the average, 16.0 lbs. digestible matter in corn silage and about 47.3 lbs. in meadow hay, or a ratio of 1:2.9. If the price of a ton of meadow hay, therefore, is \$10 a ton, the silage will be worth a little more than \$3.

"The results of careful experiments and the teachings of practical feeding experience seem to bear out the correctness of this statement; but, of course, there is good and poor silage, and good and poor hay, and the ratio will vary according to the quality of the feed. If a farmer figures on three tons of silage as equal to one ton of meadow hay, I do not, however, believe he is much out of the way when a good quality of either feed is considered."

C. S. Plumb, B. S., Director Purdue University Experiment Station of Indiana: "It is almost impossible to place a definite feeding value on silage, in a financial way. There is a something in this succulent food that gives it a value that cannot be measured by a chemical analysis, neither can it be expressed in money. This value, furthermore, is more pronounced in the hands of some feeders than others, and with some kinds of animals than others. Silage is better suited to dairy cattle, undoubtedly, than to other kinds of farm stock, though fed to steers or sheep in a limited way it also is of great value.

"For years I have heard it said that three tons of silage had about an equivalent feeding value with one ton of timothy hay, and as based on the food nutrients contained in each, this may be so. For dairy cattle, we feed both clover hay and silage at this institution; the two best coarse winter foods that I know of for such stock. If we measure the value of these two by the digestible matter contained in them, taking well-eared dent corn in the place for the silage, we find that a ton of clover contains about five times as much digestible protein as a ton of silage, and about twice as much of carbohydrates and fat. If the ton of clover hay is worth \$8—a very common price in this vicinity—then on this basis the silage is worth from \$1.50 to \$2. This value, however, I consider fallacious. It is worth some more than this; how much depends on the feeder, the stock to be fed, etc."

Growing Roots and Supplementary Crops.

- 1.—How, when, and in what quantities do you apply manure to land for (a) turnips, (b) mangels and carrots?
- 2.—How much mangel and carrot seed do you sow per acre, how wide apart do you make your drills, and how far apart do you leave the plants?
- 3.—How do you manage to secure uniform germination of mangel and carrot seed, and what time do you prefer to sow?
- 4.—What do you think of sowing cabbage seed with carrots to fill the blanks, and thus secure cabbages for stock, market and other purposes?
- 5.—How do you prepare the ground for turnips, and at what time do you consider it best to sow?
- 6.—Have you ever grown pumpkins alone or with any other crops for fall feed for stock? If so, how do you grow them, and how much value do you place upon them for hogs and milch cows?
- 7.—Have you grown rape alone or with a grain or other crop to be pastured in the fall?

If so, what do you think of it in either or both cases?

8.—What variety each of turnips, mangels, and carrots is giving most general satisfaction?

Turnips, Mangels, and Carrots.

1.—For turnips and mangels, and particularly for carrots, I prefer to spread broadcast, in November or December, manure that has been collected during the summer and turned once, say in September, for the reason that manure which possibly would answer for turnips or mangels might be too coarse and lumpy to give smooth, well-formed carrots. If this is not convenient, then I should mix, during the winter, manure from the horse and cow stables, with sufficient quantity of the former to maintain a moderate heat. Turn the pile in March or April, breaking all lumps and placing the top and sides on the inside of the pile as turned. This will cost say 10 cents a ton, but will be well worth the outlay and will save much valuable time in spreading. Thirty-five tons of this manure spread broadcast to the acre on fairly rich ground should be enough. I estimate three Scotch cartloads to a ton, and for 35 tons to the acre dump a cartload at equal distances of seven yards apart each way, giving about 100 cartloads to the acre. Spring-toothed, disk, and Acme harrows now save cross plowing. If the manure has been spread in the autumn, in the spring harrow it in well. If it is to be spread in the spring, harrow the ground deeply before the carts go on it; plow the manure under, harrow deeply again, and then drill the land up in ridges, 27 inches apart, rolling them nearly flat before sowing the seed. This will bring most

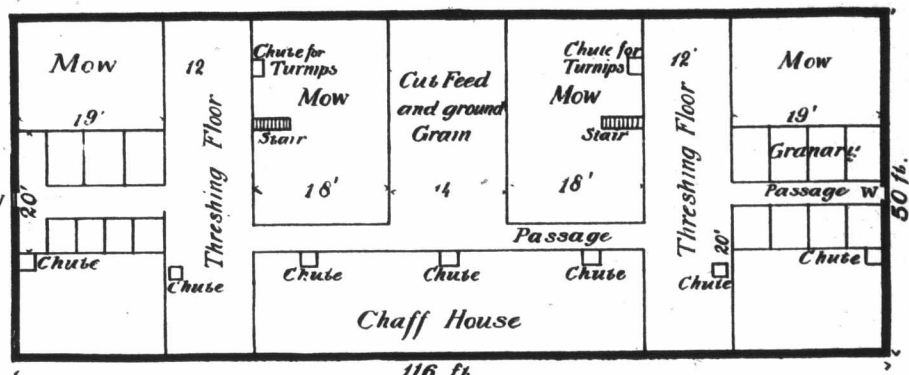


FIG. I.—BARN FLOOR PLAN.

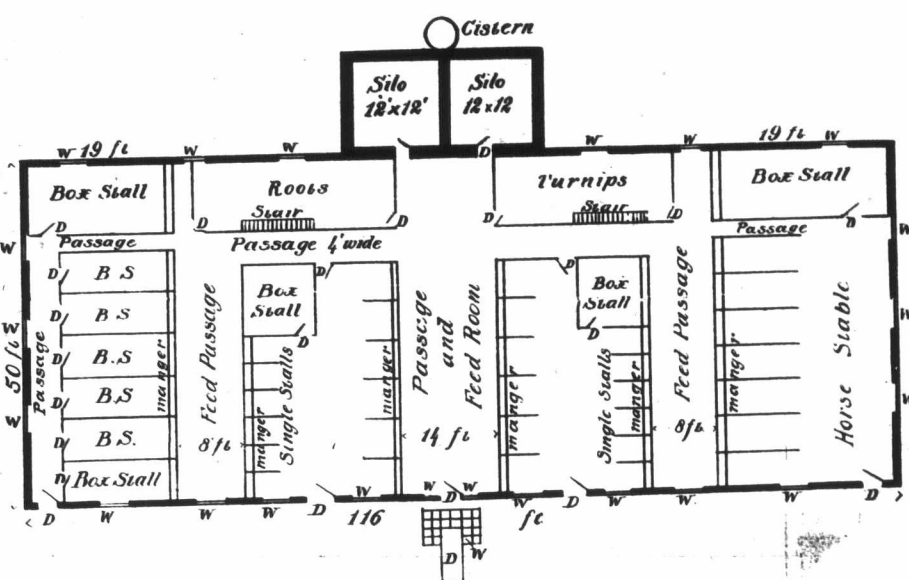


FIG. II.—BASEMENT PLAN.

earied flint corn, for example, is compared with large, immature sorts bearing few good ears. We have submitted the question to a number of prominent scientific investigators, and append their replies as follows:

Prof. G. E. Day, Agriculturist, Ontario Agricultural College: "Re value of corn silage, I would place it at about one-quarter that of red clover hay. Some silage may be worth more than this, and some certainly less, but I believe this value is a fair average. I may further add that I regard six tons of clover hay equal in feeding value to seven tons of timothy hay. Of course, these are approximate figures."

Prof. I. P. Roberts, Director Experimental Station, Cornell University, N. Y.: "From the tables at hand the value of silage would be \$2.60 per ton, as compared with timothy hay at \$10 per ton. In my opinion, at these prices, the hay would be worth more than the silage for feeding mature horses when at work, and the silage would be worth relatively more if one were trying to produce milk in the winter. My observation leads me to the conclusion that much of the silage is not worth more than \$2 per ton, while in other cases, where a large amount of corn has been ensilaged with the stalks, it might be worth \$3 per ton, or even more, as compared with the hay."

Prof. F. W. Woll, Assistant Chemist, Wisconsin Experiment Station: "In reply to your question as to the money value of a ton of corn silage, compared with other feeding stuffs, will say that I