

**Ventilating System?**

the process of creating diffused air currents, and introducing sufficient to a building, so that a of purity, healthful to at all times maintained. forty days without food without water.

a few minutes without

longer than a few pure air; but the more in the air she breathes, be the tax upon her her ability to produce will be the tax upon upon life itself. In barns, the air is breathed in, and becomes poison- a stable become less ase, and cannot recover easily.

ood are the three great and of the three, air is considered the most im- it is the first great ment for all animals. are air is to life and to of vitality and energy by many interesting ters on the subject.

aly, is the famous Dog lled to a certain height ide, the same element the lungs. So power- dioxide, or rather so k of oxygen because of a dog brought into the insensible within a few periment is often per- of a small fee, for travellers.

breathed air has been in schools where for a tilation had been cut at first complained of was found necessary ature from 70 to 80 re the occupants of the This, no doubt, was on in vitality owing to the air and a lack of gs. After the ventila- off for twenty to thirty began to complain of

how quick impure air ch or lecture hall for e a person to become y, and how it destroys

at school, we used to k Hole of Calcutta, 6 prisoners were con- et 10 inches by 18 feet, all windows—all but he night for lack of

ly illustrates the vital the animal by pointing would be for to carry a 3-gallon pail, as one To supply a cow in quire 5½ full pails of te, or a total of 7,718 our hours.

resh air would contain dioxide; after the cow t would contain 307½ dioxide; and almost would be given off her lungs and pores. twice the weight of oes of food and water you realize what an

tions of hay and silage t puts pails of water drink in a day. The d and water equals the weight of the air during the 24 hours, on the basis of pure,

l us that air is not a but consists of a of the gases oxygen about 1 per cent. by Atmospheric air of most always contains a e, together with more ter, and a very active own as ozone. The n of air is given as

20.588  
76.765  
0.039  
1.686  
0.922  
100.00

The air, as thrown off by the lungs at 90 to 98 degrees Fahr. is nearly saturated with water, and contains from 3 to 5 per cent. carbon dioxide; hence it is from 1 to 3 per cent. lighter than the air inhaled.

The following table shows the approximate effect of respiration on the composition of air:—

	Enter- ing Air	Respired Gases
Oxygen, per cent. of volume.....	20.59	15.74
Nitrogen and other constituents.....	77.68	75.29
Carbon dioxide.....	0.04	4.00
Water.....	1.69	4.97
	100.00	100.00

It is the oxygen that is the energy and life-producing element; without it there can be no animal life. Oxygen is not to be considered as having any properties as a food, but is rather the necessary element which makes it possible to assimilate and utilize the food.

While the air is in the lungs, the oxygen which is imparted to the tissues acts upon the carbon of the blood, forming chemical compounds which are thrown off in respiration; this process resulting in the production of heat and energy so necessary to life.

A similar process occurs with the burning of coal or wood in the stove.

The oxygen of the air unites with elements in the fuel to produce that energy we call heat, and the same waste products are formed—carbon dioxide, ammonia gas and water vapor. This waste—the smoke and the ashes—must be removed from the stove, and oxygen supplied—or the fire will cease to turn.

In the same way, the respired or breathed air must be removed from the stable, and fresh air supplied, so that the cow may have oxygen on which to live and supply the energy necessary to produce milk.

If the stable is air-tight, and no fresh air introduced, the cow would die, just as the fire choked with ashes will soon go out, though it may be plentifully supplied with good coal or wood.

Fortunately no stable is air-tight; but in the colder states of the north, most stables are built as tight as possible, to insure warmth for the cows. Conditions in this respect are rapidly improving; but even to-day very few stables, comparatively, provide sufficient ventilation—enough oxygen—to enable the cows to make the most milk possible from the feed and water they consume.

In all such cases, providing plenty of fresh, pure air will result in greater yields of milk.

Actual experiments have proven that cows stabled in ordinary barns without adequate ventilation, will give more milk when the proper ventilation is provided; and when the operation of the ventilation system is stopped, their milk yields will immediately decrease to the former amount.

Not only is oxygen more necessary to life than food and water—not only does the lack of sufficient oxygen reduce the milk yield—but it effects the health and vitality of the animal, making her less able to resist disease. Now, out-of-doors the cow gets all the pure air, all the oxygen she needs. But it is far different in the winter time, when she is confined to the barn.

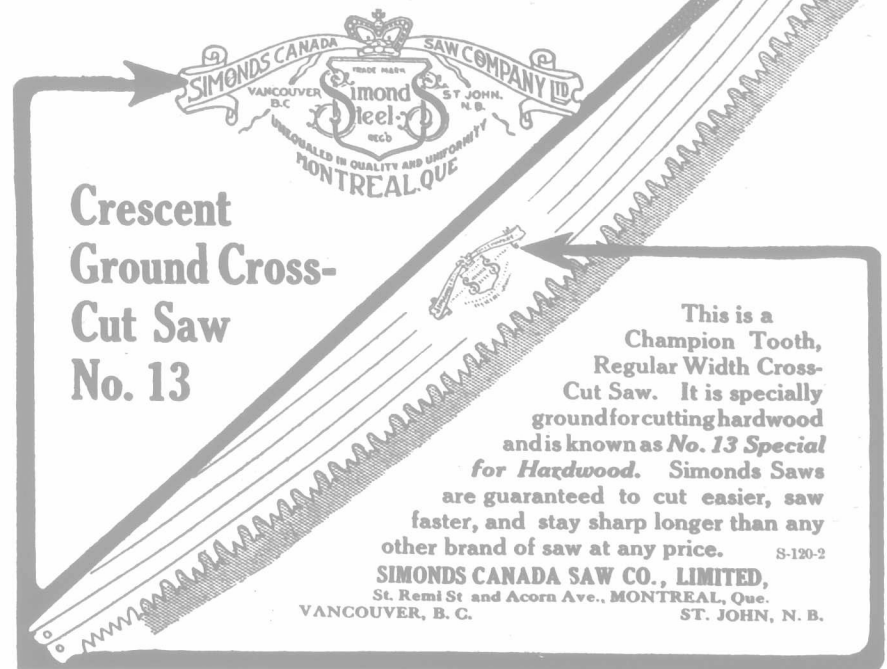
In many barns, the cows must breathe the same air over and over, excepting for the small proportion which may leak in from outside through cracks and through the occasional opening of the door.

To get the most milk possible from his cows and to make more profits, the owner must in some way bring plenty of pure air to the cows' nostrils. Since air is the most important element in maintaining life and energy—since a cow consumes twice the weight of air that she does of food and water combined—and since air costs absolutely nothing—the owner of cows can afford to study this matter carefully, and make certain that his animals are being fed all the oxygen they need.

The water vapor present in breathed air must also be removed from the barn. The moisture thrown off by the average cow in 24 hours amounts to 11¼ pounds, or 12.5 gallons of water.

Thirty cows will load the air in the stable with 1½ barrels of water daily. If that amount of excess moisture is permitted to stay in the barn, the results

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On the other hand, the Citizens' Liberty League sincerely believes that the present situation demands a repeal of the unsatisfactory Ontario Temperance Act, and the inauguration of sane, moderate temperance legislation.

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