

brood sow, we pick the best out of twenty or thirty, and send the rest to the butcher, and see how soon we get the bacon hog; we do the same every year with our ewe lambs, and the effect is evident wherever Ontario sheep meet others. We do the same with our heifers, and the cow-testing association tells how the yield of butter-fat is jumping up. But if we have a pair of good heavy young mares, and a buyer comes along and offers us \$400 for them, away they go, to spend their lives drawing a dray in some city, and we go on breeding from some blemished or broken-down mother worth about \$50. It is a very common thing to hear a farmer say, when buying a work horse, "I would give a little more for a mare, for, then, if anything happens ner and she can't work, I can breed her."

Take the neighborhood in which I am writing, and for the last forty years there have been two and three real good heavy stallions travelling and doing a good business here every year, horses that cost their owners, in many cases, from \$2,000 to \$3,000, all imported, and last summer I asked the owner of one how many mares he was getting, and he said about a hundred. I asked how many of them were mares from which a man should expect a good draft colt. He considered carefully, and said, about ten. Think of it, after forty years, one in ten, and I have seen going away from the station by the carload the best type of young mares, going because they sold well; the culls were kept at home. This is killing the goose that lays the golden egg. If a farmer has two fillies, one worth \$250, the other worth \$75, and a buyer comes along, eight times out of ten he will sell the good one and keep the other; and nine times out of ten he will breed her and raise some more just like her, and then blame the sire and the man who has risked a couple of thousand dollars, often all he has, to place a good horse at his disposal.

#### BREEDING DRAFT HORSES.

The editor of the Scottish Farmer, who is also editor of the Clydesdale Studbook of Great Britain and Ireland, comments as follows on the letter of a correspondent of the London Times, published in "The Farmer's Advocate" of January 23rd:

Under the title, "American Horses," a correspondent of The Times advocates the creation of a new breed of British horses by breeding Clydesdales and Shires indiscriminately, and making the animals that are eligible for the one studbook be eligible for the other. The scheme is simplicity itself, but why its advocate should entitle his article "American Horses," is a puzzle. The probability is that the writer is an amateur—one who never bred a horse of any kind in his life—and has formed his opinions regarding horses at second hand. He has also heard of the movement inaugurated by American College Farms to breed gray Clydesdales or Clydesdale crosses, on the off-chance of being able to secure some share of the demand for gray geldings which is supposed to exist in the States. Our own opinion is that there is, in reality, no such demand. The Americans know that they can only get gray or black Percherons, and they take them, not because of color, but in spite of color. An American teamster, as a rule, prefers the Percheron, because he wants what we would call a "gip," or larger-sized van horse. He also wants for spectacular purposes (vide Armour's team, which visited us last summer) big gray geldings. He knows that the best way to get such is to cross the Percheron or Percheron-grade gray mare with a Shire stallion, and he gets what he wants. As he judges a draft horse's merits as he would judge a bullock—by pounds avoirdupois, he gets what he wants in the result of this cross, without the Clydesdale's vigorous spirit and impatience of Yankee humbug. The American farmer has not the remotest intention of blending the Shire and the Clydesdale. That would not give him what he wants. It would give him a horse with "feathered" limbs, and he does not want that for his badly-paved streets and country "roads," which are only prairie tracks. He blends the Shire and the Percheron, because that gives him a big-bodied, clean-limbed "gip" horse. He may, on occasion, make the cross the Clydesdale and the Percheron, but that may not give him as many pounds avoirdupois as the other, and he prefers the bullock measurement. The Times' correspondent, to put it mildly, simply talks nonsense, not knowing what he speaks nor whereof he affirms concerning American horses.

When he comes to write about the British horses, he is, if possible, further astray. If we are right as to the identity of the writer, he has rarely, if ever, been at a Shire or a Clydesdale stallion show. No one who has been would ever dream of blending the two breeds in the indiscriminate fashion advocated by him. Whatever a breeder might do who wanted to produce big geldings for dray purposes, no one who knows what a horse should be like would ever suppose he could breed the Scotsman's horses by crossing indiscriminately the animals now registered under their separate categories of Clydesdales and Shires. You

can sometimes find, in a large class of Shire females, an odd mare that a Scotsman would like to own; and you could also find in a large class of Clydesdale stallions a bad beast, to which a Shire judge would award a prize; but no Clydesdale judge who knew the A B C of his business would ever imagine that he could do anything but ruin his horses by adopting the policy of the correspondent of The Times. Good Shires are good horses, and the Shire Horse Society has vastly improved the breed by its vigorous veterinary inspection at the London Show. Clydesdale shows should be conducted in the same way, and there should be, as at London, a dual classification for aged stallions—those up to and including 16.2, and those over that height. This would do much to improve the breed, and it is to be hoped the new conditions for the Cawdor Cup and the conditions of the Brydon Challenge Shield may conduce to this end.

Prof. F. R. Marshall, of the Animal Husbandry Department of the Ohio Agricultural College, pays the following tribute to the noblest of beasts: "It is almost impossible to imagine that people could live without horses. Certainly, living in a horseless world would be a sorry experience in contrast to our present enjoyment of comforts and conveniences. In the United States there are about one-quarter as many horses as people. Three-fourths of these horses are on the farms, although there are in the country a great many colts that are to be sold to go to the cities. To the horses that do the work on the farms, we are indebted for the production of most of what we eat. If we live in the city, even though we do not keep horses of our own, we are dependent upon those of the groceryman and the coal dealer to bring us the necessities of life."

The attention of those interested in Percheron horses is called to the fact that the winner of the first prize in our "Horsemen's Experience Competition" is a breeder of high-grade Percherons. While the prize was not awarded him because of this fact, but entirely regardless of it, still the fact that he has won this honor is a convincing answer to the occasional complaint that "A Percheron horse has no show in your columns." The Percheron breed has exactly as fair a show as any other. If its claims are not so aggressively advanced, the breeders themselves must shoulder the responsibility.

## LIVE STOCK.

### FEEDING VALUE OF FROSTED WHEAT AND OATS

RESULTS OF ANALYSES AT THE O.A.C.

Owing to the scarcity of grain, and the consequent high prices that prevail, the farmers of this Province are more than usually interested in the feeding value of the frosted wheat and oats of the Prairie Provinces. It is probable that these frosted grains will vary widely in composition, for it would be unreasonable to expect that all the fields of grain would be touched with frost at the same stage of maturity. Consequently, no one sample of these grains could be representative of the output of the country. The samples we analyzed were secured through the kindness of Mr. C. B. Watt, Secretary of the Dominion Millers' Association, from the elevators at Goderich; and, as they were from cargo lots, they will more nearly represent the average quality of these grains than would be the case if they were forwarded from any particular district, or if they had been taken from a single carload.

The results of our analyses are given in the following table, and along with them, for purposes of comparison, the average composition of well-matured grain:

COMPOSITION OF FROSTED AND NORMAL WHEAT AND OATS.

	Moisture	Protein	Fat	Fibre	Soluble Carbohydrates	Ash
Frosted Wheat.....	11.80	12.87	1.73	2.88	69.21	1.51
Normal Wheat.....	10.40	12.50	2.20	1.80	71.20	1.90
Frosted Oats.....	7.51	9.51	3.84	13.99	62.71	2.44
Normal Oats.....	11.00	11.80	5.00	9.50	59.70	3.00

When consumed, the protein of the grain is used to form the tissues and fluids of the body, such as muscle, blood, bone, and brain; to repair their waste; and, if eaten in excess of the daily requirements, may be stored in the body as fat, and drawn on as required for future consumption. The fat of the food is a source of energy, and, if used in excess, may form fat on the body. Starch and sugar form the larger part of the soluble carbohydrates, and are, generally speaking, the cheapest source of heat and energy in the body. The cellulose, or crude fibre, is the coarse, woody part of the grain, and is found in largest quantities in the hull. Consequently, oats contain more of the crude fibre than wheat. This substance is comparatively indigestible, and, further,

it, for various reasons, decreases the digestibility of the whole food.

It will be noticed that the frosted and normal wheat are very similar in composition, the main difference being that there is a little more crude fibre and a little less fat and soluble carbohydrates in the frosted wheat. All of these factors detract from its food value. As it is not at all likely that the frost has destroyed the nutritive value of any of the constituents of the wheat, it would seem correct to assume that the frosted wheat is of only slightly less value for feeding purposes than the normal wheat.

In the case of the two samples of oats, there is a wide difference in the composition, and, consequently, in their food value. It is impossible to state this difference in dollars and cents, but it is extremely doubtful if the frosted oats can be profitably used when Ontario oats are selling at the present price. With the wheat, the difference in composition is so slight that it is probable that the farmer can safely pay within a few cents per bushel as much for the feed or frosted wheat as for the wheat which was grown in Ontario.

In comparing the value of frosted wheat with Ontario oats, we must bear in mind that oats are selling at 40 to 45 cents per bushel of 34 pounds, and that the feed wheat may be bought for 70 cents per bushel of 60 pounds. The ordinary rough foods of the farm are somewhat deficient in the proteid or flesh-forming materials, and feed wheat is richer in this constituent than oats; therefore, the same amount of money expended on feed wheat will not only give us greater weight of material, but also more pounds of protein, and much less of the indigestible crude fibre than oats. Consequently, at present prices, it would seem as though, under many conditions on Ontario farms, it would pay to sell the oats and buy feed wheat.

In conclusion, it may be pointed out that the wheat should be ground, otherwise a great deal of the material may escape digestion, and that the best results would be got by mixing it with other chopped grain or cut roughage.

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#### MUSLIN - CURTAIN VENTILATION.

An experiment in muslin-curtain ventilation is under way at the Central Experimental Farm, Ottawa, and a preliminary report will be of interest to many of the readers of "The Farmer's Advocate."

The stable in which the experiment is being carried on is well built, well lighted, and well ventilated (otherwise than by muslin-curtain system); building about 100 x 25 feet, with a 10-foot ceiling. It is divided into six box stalls, and is at present occupied by 37 head of cattle (steers one and two years old). During the experiment with muslin-curtain ventilation, the inlets and outlets of the other system of ventilation are being kept closed.

On each side of the building are ten windows, each 2½ feet by 4 feet. These windows are six feet from the floor, and extend to within 18 inches from the ceiling. They are hinged at the bottom, and are, by means of chains, held at an angle of about 60 degrees with the floor, when open. It is evident, therefore, that the air that manages to go through the muslin meets but little further opposition in getting into the stable, the only effect of the windows standing at 60 degrees angle being to start any air currents upwards, rather than downward, and so cause a more perfect intermixture of the incoming air with that already in the stable.

The curtains cover the whole window area, being held in place on the frames outside by means of laths nailed over the margin of the cotton. The cotton used is of two grades: (1) The cheapest grade of gray cotton, costing 6 or 7 cents per yard; (2) cheese-cloth. On the east side are 5 cotton and 4 cheese-cloth curtains. On the west side are 4 cotton and 5 cheese-cloth curtains.

The experiment has been under way for a month or more, and has been most interesting. For instance, during a few warm days, when the thermometer showed about 40 degrees F. outside, and there was no breeze blowing, the inside thermometer showed 82 degrees, in spite of the fact that every curtained window (18 windows, 2½ x 4 feet) was open. As soon as the doors were opened, however, the temperature began to fall, and in a short time the thermometer showed only a few degrees more heat than the outside.

The following record of inside and outside temperatures, as well as record of temperatures in the main barn (where another system of ventilation was in operation), and a few notes on the wind, will be self-explanatory and instructive:

DECEMBER 23rd.				
	12 a.m.	2 p.m.	5 p.m.	10 p.m.
Open Air.....	26°	27°	30°	28°
Cow Stable.....	50°	52°	53°	52°
Steer Stable.....	52°	53°	57°	62°
Wind.....	Very Lgt.	V. L.	V. L.	Calm.

Remarks.—12 a.m., windows open both sides of stable; 2 p.m., ditto; 5 p.m., ditto; 10 p.m., ditto.