

less fluid in order to maintain this optimum body temperature. The air comes in closer touch with the skin itself, and the cooling effect of evaporation is direct in its application. In a skin clogged with dust and dried-up sweat, and with long, matty hair protecting it from the cooling action of the atmosphere, more perspiration must be secreted and exuded, more work is required of the sweat glands, and energy which might be applied in useful work is employed in sweating out moisture to hold the temperature down to normal.

Anything that adds to the comfort of a horse while he is at work increases the amount of work which he can do, and decreases the amount of food which he must consume and the energy which he must expend in doing it. Irritation and discomfort of any nature decreases a horse's ability to work, and any means that can be taken to reduce irritation discomfort will enhance to the extent they are effective in so doing, a horse's value to his owner. What shoeing is to the feet, clipping is to the body. The horse feels better, and does not require one-quarter the grooming that is required by the shaggy-haired, dispirited nag. There is no shedding of hair all the season through to blow over everybody and everything; no sores or skin disorders, but healthy, well-conditioned horses, comfortable in body, active in spirit, capable of performing the maximum amount of work. Clip the horses early in spring, before seeding begins.

TO PREVENT SORE SHOULDERS.

With reference to the article on "Preparing Horses for Spring Work," in "The Farmer's Advocate" of March 12th, an experienced reader, Mr. John Hunter, of Lambton Co., Ont., says he considers one of the most important points is to bathe the shoulders daily with salt-water for a week before spring work commences. If the horses can be moderately exercised, and bathing done evenings, after they come in from work, so much the better. It tends to toughen the skin, allay inflammation, and prevent or heal any abrasions. Of course, it is also necessary to see that the collars fit. Observing these precautions, he informs us that he has never had sore shoulders on a colt. We might add that this suggestion was offered editorially in the above-mentioned issue, and is approved by a large number of careful horsemen. It is simple, and well worth while.

HORSE - COLLAR SUGGESTIONS.

Editor "The Farmer's Advocate":

The question as to which is the best style of collars, leather-lined, cloth-lined, with or without sweat-pads, seems at first an easy question to answer; but, after a little consideration, my answer is, "You pay your money and take your choice."

The best collar is the collar that fits best! Here, of course, comes the difficulty. A collar should fit snugly, with just room to insert the fingers between the collar and the windpipe when the horse has his head in the position in which he will carry it when working. Here is when we come to the use of the sweat-pad. When a horse goes to work in the spring, presumably, he is fatter and bigger in the neck than he will be later on. So the teamster must watch carefully and put in the sweat-pad before the loosened collar gives the horse a sore shoulder.

Personally, I like a cloth-faced collar; their pattern is slightly different to that of the leather-lined ones, being heavier and thicker through. Therefore, keeping the traces further out from the shoulders, avoid rubs on the side of the shoulders. Also, the cloth absorbs the sweat. When I use leather-lined collars, I always use sweat-pads; the leather lining seems to me to get too hard. Of course, I can understand that the collar itself must be rigid, but I can think of no reason why a nice soft surface, such as is provided by a sweat-pad, would not make the horse more comfortable, especially when drawing hard.

Perhaps your subscribers are not aware that there is a big difference in quality between collars of much the same appearance; i. e., whether they are short straw or long straw. The short-strawed collars are just "stuffed" full of short straws, and are liable to become "lumpy." The long-straw collars are hand-made, with the straw placed in position "up and down" the collar. The stuffed collars are about fifty cents cheaper, but that is only a small matter when compared with the good qualities possessed by the long-straw, hand-made collars.

In harvest, horses are liable to get sore on the top of the neck. So far as I know, the best remedy for this is to use a zinc pad; this idea was traded off by an English-army veteran to an American for a glass of beer, who patented the device, and lived happy ever afterwards (on the royalties).

Another point worth watching is the point of the shoulder! Horses that carry a low head quite often get a sore here. To avoid this, put up the draft of the traces about an inch.

Perhaps your subscriber would be interested in

a story about a man who had trouble in getting a collar big enough to fit himself! Well, a friend of mine took a trip to the Old Country, and when in Dublin wanted some new collars, so he went into a men's furnishing store, and asked the girl behind the counter to show him some collars; she did so, but they were all far too small (he weighed about 250 pounds). The bold Alex. then asked the girl if she could direct him to a place where he could get collars to fit him. The girl said, "Certainly; I am sure they will be able to suit you with collars next door." On going out into the street, Alex. found "next door" to be a harness shop! G. H. BRADSHAW.
Russel Mun., Man.

LIVE STOCK.

FROZEN WHEAT AS FEED FOR STOCK.

RESULTS OF EXPERIMENTS AT THE CENTRAL EXPERIMENTAL FARM.

As soon as it was known that frozen wheat would be on the market in considerable quantities, it was decided to make some tests of its feeding qualities at the Central Experimental Farm. A carload was accordingly purchased from a farmer near Indian Head, Sask. It reached Ottawa in December. It was made up of about equal parts No. 1 frozen and No. 2 frozen. No. 1 cost \$1.06, and No. 2, 98c. per 100 lbs. delivered at Ottawa.

The feeding tests conducted were quite varied, and on a fairly large scale, but it is not proposed to do anything more at the present than give mere summaries.

HORSES.

It was fed to horses, where it made up about one-third of the meal ration, the other two-thirds consisting of bran and whole oats. It proved unsatisfactory as a feed for this class of stock. It appeared to be unpalatable to them, and when eaten seemed to be the cause of digestive troubles. No. 1 frozen was used.

DAIRY CATTLE.

When fed to milch cows results were quite satisfactory. A number of cows receiving as a meal ration a mixture of 8 parts bran and 3 parts gluten were changed to a meal ration of 5 parts No. 1 frozen wheat and 3 parts bran. They did as well on the new ration as on the old. By this change the cost of the meal ration was reduced by about one-fifth. For this class of stock it appeared very important to grind the wheat very fine. For the benefit of those not familiar with gluten, it may be said that in feeding qualities and composition, the gluten used compares very favorably with oil-cake meal.

BEEF CATTLE.

Since steers are the class of cattle to which it is likely to be fed in considerable quantities in the West a fairly large experiment was planned. For the most part No. 1 frozen was used. On a small number, however, No. 2 frozen was used with quite as satisfactory results.

The No. 1 frozen wheat was fed in varying quantities and in different mixtures to 24 cattle. These were divided into three groups of 8 each. Another lot of cattle of similar quality but somewhat heavier, was fed during the same period on a mixture of bran and gluten. This mixture is one that has always given most excellent results here, so it will be understood that the wheat mixtures were up against a difficult proposition when running in comparison with the bran and gluten mixture. The feeding experiments with cattle were continued for ten weeks.

LOT B.—YEARLINGS.		Lbs.
Weight December 24 (average)	.....	730
Weight March 3 (average)	.....	881
Gain in 70 days (average)	.....	151
Daily rate of gain (average)	.....	2.15

Average Daily Ration per Head for Lot B.

	Lbs.
Corn Silage	40
Oat Straw	5
Clover Hay	3
Oats (crushed)	2
Frozen Wheat No. 1	4½

LOT C.—TWO-YEAR-OLDS.		Lbs.
Weight December 24 (average)	.....	884
Weight March 3 (average)	.....	1001
Gain in 70 days (average)	.....	167
Daily rate of gain (average)	.....	2.4

Average Daily Ration per Head for Lot C.

	Lbs.
Corn Silage	44
Oat Straw	6
Clover Hay	3
Bran	3
Frozen Wheat No. 1	4

LOT D.—TWO-YEAR-OLDS.		Lbs.
Weight December 24 (average)	.....	945
Weight March 3 (average)	.....	1090
Gain in 70 days (average)	.....	145
Daily rate of gain (average)	.....	2.07

Average Daily Ration per Head for Lot D.

	Lbs.
Corn Silage	44
Oat Straw	6
Clover Hay	3
Bran	2
Frozen Wheat No. 1	5

LOT E.—TWO-YEAR-OLDS.		Lbs.
Weight December 24 (average)	.....	1068
Weight March 3 (average)	.....	1252
Gain in 70 days (average)	.....	190
Daily rate of gain (average)	.....	2.71

Average Daily Ration per Head for Lot E.

	Lbs.
Corn Silage	50
Oat Straw	6½
Gluten	5
Clover Hay	3
Bran	3

In every case it will be observed the steers made good gains. It was found necessary to grind the wheat very fine, or part of it passed through undigested.

SWINE.

Since swine are supposed to be particularly suited for making use of this sort of feed, it was decided to give as thorough a test as possible. The results given below are quite incomplete, but will serve to indicate the high value of different grades of frozen wheat for pork production. The hogs were divided into groups of 5 each, and fed as follows:

Lot 1—Frozen Wheat No. 1, 200 lbs., with shorts 100 lbs.	
" 2— " " No. 1, 200 lbs., " shorts 100 lbs.	
" 3— " " No. 2, 200 lbs., " corn 100 lbs.	
" 4— " " No. 2, only.	
" 5— " " No. 2, only.	
" 6— " " No. 2, 200 lbs., " barley 100 lbs.	
" 7— " " No. 1, 200 lbs., " oats 100 lbs.	
" 8— " " No. 1, 200 lbs., " oats 100 lbs.	
" 9— " " No. 2, with skim milk, 3 lbs. daily	
" 10— " " No. 1, only.	[per pig.]
" 11— " " No. 1, only.	
" 12— " " No. 1, 100; No. 2, 200; corn 200 lbs.	

Lots 13 and 14—Check lots, both fed with following ration:—Shorts, 500 lbs.; Imperial flour, 100 lbs. (coarse feeding flour); corn, 100 lbs.; skim milk, 2 lbs. per day per pig; roots, equal parts by weight with meal fed.

All pigs were fed on these rations for 56 days, exclusive of 7 days allowed for change of ration. Pigs were weighed every Tuesday and careful notes made of results each week. The summary is as follows:

	Lbs. per day per pig.	Lbs. meal for 1 lb. gain
Lot 1 gained.....	.76	3.9
Lot 2 gained.....	.77	3.7
Lot 3 gained.....	1.03	3.9
Lot 4 gained.....	1.23	3.6
Lot 5 gained.....	.71	3.8
Lot 6 gained.....	.81	4.1
Lot 7 gained.....	1.02	3.9
Lot 8 gained.....	.66	3.9
Lot 9 gained.....	.86	3.4
Lot 10 gained.....	.94	4.1
Lot 11 gained.....	.79	3.9
Lot 12 gained.....	.94	4.7
Lots 13—14 gained.....	.92	3.2

The pigs enjoyed uniformly good health. The lots were fairly uniform in size, except in cases where two lots were on the same ration when one was a heavy lot and the other a light lot; as, for instance, in lots 10 and 11, where pigs in lot 10 averaged at finish 203.2 lbs., and pigs in lot 11 averaged at finish 140.8 lbs. Weights are given below:

AVERAGE WEIGHT PER PIG IN LOT, IN EACH CASE.

	Weight to Start.	To Finish.
Lot 1.....	99.1 lbs.	141.8 lbs.
Lot 2.....	76.0 lbs.	119.2 lbs.
Lot 3.....	118.2 lbs.	176.2 lbs.
Lot 4.....	140.0 lbs.	209.2 lbs.
Lot 5.....	85.0 lbs.	124.8 lbs.
Lot 6.....	104.1 lbs.	149.6 lbs.
Lot 7.....	112.1 lbs.	169.4 lbs.
Lot 8.....	74.2 lbs.	111.6 lbs.
Lot 9.....	99.0 lbs.	147.2 lbs.
Lot 10.....	150.4 lbs.	203.2 lbs.
Lot 11.....	96.3 lbs.	140.8 lbs.
Lot 12.....	124.8 lbs.	176.7 lbs.
Lot 13.....	108.6 lbs.	159.3 lbs.
Lot 14.....	83.8 lbs.	137.2 lbs.

It will be observed that pigs on pure frozen wheat made excellent gains. It must be noted, however, that very careful feeding was necessary in lots where pure wheat was used. On averaging up the wheat lots it will be found that gains cost on pure frozen wheat less than 4 cents per pound live weight. This compares very favorably with gains made on other feeds or mixtures. The wheat should be finely ground.

POULTRY.

Mr. A. G. Gilbert informs me that No. 1 frozen wheat has given him good results with his hens. The wheat should, however, he asserts, constitute only a part of the grain ration.

CONCLUSION.

Frozen wheat may be fed with profit to dairy cattle, steers, swine and poultry. It should, however, be finely ground. It is better to mix with it some other meal. Bran or oats are most suitable for this purpose.

J. H. GRISDALE,
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