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THE ADAPTABILITY OF BARLEY IN LIVE STOCK FEEDING.

As a utility feed for live stock, the value of barley is generally accepted, but its particular value in this respect is less fully appreciated. Barley, like corn, is a carbonaceous feed and, generally speaking, it may successfully be used to replace corn in the rations. When fed alone it is open to criticism because of its lack of palatability as compared with oats, corn or wheat; but when fed in grain mixtures this objection is negligible. It is rather heating in character, and because of this must be fed with discretion to such classes of stock as idle work horses and pregnant brood sows, if used at all.

When fed in an experimental way to work horses, it was not consumed with the same relish as oats, nor did it posses as high a food value. The difference in this latter respect was, however, comparatively slight.

For the feeding of steers or beef cattle, barley has a high commercial value. In a test conducted at the Brandon Experimental Farm, in which barley and frozen wheat were compared, the barley chop gave an average daily gain per steer of 1 lb. 13 oz., while the frozen wheat gave a gain of 1 lb. 3 ozs. At the Indian Head Experimental Farm, in a test covering a period of 77 days, barley was compared with elevator screenings. The barley-fed lot made an average daily gain per steer of 2.18 lbs. while the screenings-fed lot made a gain of 1.78 lbs. Barley also holds a prominent place in the meal ration of dairy cattle.

The suitability of barley for bacon production has been repeatedly demonstrated by the Dominion Experimental Farms, particularly for finishing. It is not a desirable feed for brood sows before farrowing or during the early part of the nursing period, but may be introduced into the sow's ration after the pigs are a week or two of age. Because of its carbonaceous nature it should not be fed to newly-weaned pigs in any appreciable quantity but find its chief use in the rations of bacon hogs after they have attained the age of about three months. At this time it may safely be introduced and gradually increased until it comprises upwards of 50 or 60 per cent. of the meal ration as the hog approaches marketable weight.

In comparison with corn for the feeding of market hogs it has given 0.11 of a lb. lower daily gain per hog and cost 0.26 of a cent more per lb. of gain in feeding tests recently conducted at three Dominion Experimental Farms in Eastern Canada. The deductions drawn from these tests with swine were as follows: 1. That bacon hogs are capable of making slightly greater gains on corn. 2. That pound for pound, barley has a slightly lower feeding value than corn. 3. That barley-fed hogs are more evenly fleshed. 4. That barley-fed hogs give a superior quality of bacon. 5. That home-grown barley can be fed more economically than corn (generally an imported feed).

It might be well to emphasize the importance of using home-grown feeds for economical production under present market conditions. Barley can be universally grown, is a relatively heavy yielder, and is particularly well suited for adding to the rations of cattle, sheep, and swine where a carbonaceous feed is required.

VALUE OF SELECTION ON MILK PRODUCTION COSTS.

During the late summer the majority of the cows on the well-managed dairy farm are nearing the end of their lactation period. That is, then, the time to make a selection of all profitable producers, and cull out those which have not proven their ability to produce above a certain standard. Just what this standard should be in a grade herd depends to some extent on the locality in which the herd is situated, the marketing facilities and prices obtainable for feeds as well as for milk or butter-fat.

The Experimental Farm, Nappan, N.S., working under average conditions for the Maritime Provinces along these lines, is conducting a grading-up experiment, using pure-bred sires on heifers of unknown parentage and of the average type and production of the dairy cattle throughout the country. The progeny from these matings are also fred to pure-bred sires and a record is kept of the production of milk and butter-fat, the feed consumed, and the profit over feed cost with each individual. It was found that a heifer producing less than 5,000 pounds as a two-year-old did not, except in a very few cases, show a profitable increase during her three and four-year-old form. To illustrate, fourteen heifers, grade Holstein and Ayrshires, which went over 5,000 pounds as two-year-olds, showed in that years an average production of 5,621 pounds of 3.9 per cent. milk in 346 days, or a daily average production of 16.2 pounds. The profit over cost of feed was $31.74 per cow or 14.5 cents for every pound of butter-fat produced. The three-year-old period of these same cows, averaging 327 days, showed a production of 6,819 pounds of 4 per cent. milk, or 20.8 pounds per day. The profit was $49.90 or 18.3 cents per pound of butter-fat produced. As four-year-olds, they produced an average of 7,238.3 pounds milk, testing 3.9 per cent. fat in 308 days. This was a daily average of 23.5 per cent. and the profit realized was $56.57 or 20 cents per pound of butter-fat.

The results obtained from twenty-seven heifers with less than 5,000 pounds of milk as two-year-olds were striking in their contrast with the above. Their first lactation period (344 days) showed an average production of 3,819 pounds of 4.2 per cent. milk, a higher butter-fat test, truly, than the fourteen in the first group, but the profit over feed cost was only $14.08 or 8.8 cents per pound of fat produced. As three-year-olds, they averaged 4,173 pounds milk, 3.9 per cent. fat in 286 days or 2,646 pounds less than did the first group of fourteen, and the profit was only $22.07 or 13.5 cents per pound of fat, one cent less than the first group of two-year-olds. In their four-year-old form (in 290 days), they averaged 4,799.6 pounds of milk testing 3.9 per cent. fat, gave a total profit over feed cost of $26.67 or 14.2 cents per pound of fat produced. The increase shown by Group 1 over Group 2 in this period was 2,438.7 pounds milk, $29.90 in profit over feed cost, and 5.8 cents per pound of butter fat. Ten cows in Group 1 would give more profit as four-year-olds than twenty-one cows in Group 2. This shows that the average heifer in this case with a production of over 5,000 pounds of milk as a two-year-old is 110 per cent. superior to the average heifer below 5,000 pounds at the same age.

Considering the fact that the average production of milk from all cows in Canada is less than 4,000 pounds per year, something must be done to bring up the average and cut down the number of unprofitable producers. By adopting a reasonable standard upon which to base our selection, we may materially decrease the cost of milk production and increase the labor income which at the present time is far too low.

POULTRY

During warm weather it is highly important that special attention be given to the water supply of both hens and young chickens in order to insure an abundant supply of clean, cool water at all times.

Growth and egg production are both severely handicapped when the water supply is insufficient.

An easy way to handle the summer watering problem where running water is available is to run a line of half-inch pipe out to the range, letting it lie right on the ground. Branch lines may be run to each section of the range or, if desired, to each colony house.

If the pipes are laid in a deep furrow and covered the water will be kept much cooler than if they are left above ground, yet there will be no serious inconvenience when the time comes for taking the pipes up in the fall.

A simple and cheap watering trough for the range may be made by soldering a flat piece of tin or galvanized iron to each end of a section of rain gutter or eavestrough.

When one is attempting to keep the mash consumption of a flock of hens in some definite relation to the grain consumption, as for instance equal quantities by weight, he may find it difficult to measure the results and tell just how well he is succeeding. Especially is this true when dry mash is hopper fed and is constantly available to the hens.

Two ways of accomplishing the object are in use by careful poultrymen. One is to weigh out the approximate quantities of grain and mash needed for a week with the expectation that the two mixtures will become exhausted at the same time. Any surplus that remains may be weighed back at the end of the week.

Another method is to use grain and mash supply boxes on the inside of which have been marked scales to indicate at a glance just how much feed is in the box. When mash is fed in large hoppers the scale may be marked on the inside of the hopper itself.

With the facts at hand week by week and necessary variation may be made in the quantity of scratch feed given daily in order to keep the desired ratio of grain to mash.

Sun and light make for sanitation in the pig sty.

A feature of the Canadian exhibit at the British Empire Exhibition is a model, made entirely of butter, of the Prince of Wales standing outside his Canadian ranch house. Two and a half tons of butter were required for this model. It is contained in a very fine refrigerator cabinet and attracts an unusual amount of attention.

Spraying Potatoes is Necessary in Order to Keep Them Free From Beetles, Blight and Rot and Other Diseases.

Spraying, in order to be effective, must be timely and thorough, and should be commenced when the potato beetle eggs are just hatching, which is usually about the time the plants are from five to eight inches high, and the foliage should be kept covered throughout the season, special precautions being taken to see that it is well covered during wet weather, so says Prof. J. E. Howitt, Dept. of Botany, O.A.C. Never put off spraying because it looks like rain for once dry the spray mixture will withstand rain and be on the plants at the critical time. Bordeaux is by all means the best fungicide for potatoes. For the first application use four pounds copper sulphate, eight to twelve pounds hydrated lime and forty gallons of water, and 1½ pounds of arsenate of lime to each forty gallons of the liquid spray. Paris green and arsenate of lead may be used as a poison instead of arsenate of lime but are much more costly and no more effective in keeping bettles under control. Repeat spraying with the Bordeaux mixture often enough to keep the foliage covered. Add a poison to the Bordeaux only when required for beetles. No stated number of applications of the Bordeaux can be recommended. The number depends on the weather, the wetter the weather the larger the number. If the season is favorable for blight and rot continue spraying until the plants have finished their growth and died. This is necessary to prevent tubers rotting after they are dug. Be sure and use plenty of Bordeaux at each application. Forty gallons may be sufficient to cover the plants when they are small, but eighty to one hundred gallons will be required when the plants are large in order to do thorough spraying. The best type of spray is one with the nozzles which provides for spraying the under-surface of the leaves. Bordeaux dust is also recommended for the control of late blight and rot, but sufficient experiments have not been conducted to demonstrate its superiority over the liquid spray.

Jelly Sold Green Apples.

After a bad windstorm the ground under our apple trees was strewn with small, very green apples. Although they were extra good for jelly, merchants said people generally didn't think of that, and such fruit was hard to sell. So they wouldn't pay us enough to make it profitable to haul the apples to town.

We made glasses of jelly, and left one with each merchant for him to display on top of a pile of the fruit. People caught the idea, and soon we sold all the green apples at the current price for cooking apples. Since then, when we thin the apples on our trees, we use the same plan.—N. S. Ives.

As the margin of profit grows narrower the more important it is to weed out the poor cows, and the greater the percentage of cows falling below the profit line.

Home Education

"The Child's First School is the Family"—Froebel."

Mine and Thine—By Jennie Ellis Burdick

Just the other day I received a letter from a mother which was a cry for help.

"My boy, John, has been taking money from my pocket-book. What shall I do? I do not want him to grow up a thief."

Alas! this mother is not the only one with such a problem; unfortunately there are many parents who at some time or another are confronted with this same unpleasant experience. The mother facing the problem must take drastic measures to break off a habit which should not have been allowed to form and to teach the principle of "Mine and Thine". Whipping will not do it; more patient and painstaking methods are required.

Laughingly we often say: "What's mine is my own, and what's yours is mine, too." This expression is all right as a joke, but it is all wrong when we put it into practice. Yet so many young married people practice it. The wife assumes that the home is absolutely hers, and her husband's things are gradually pushed aside. If she wants to use any of his belongings—tools, handkerchiefs, slippers, or even his razor—she takes them, regardless of the value he places on them. Occasionally he protests, sometimes emphatically, but more often to gently for her to realize his justification in doing so, and she continues to treat his things as though they were her own. He states his objections less and less strenuously until he ceases; he consoles himself by saying, "She does not interfere at my place of business and I ought not to object to what she does at home, for that is her place of business." But he keeps his treasures at the office and club.

By and by the children come. Mother punishes John when he objects to Mary's taking his toys. "It is not kind and generous," she tells him. When Mary cries because John has taken her prized plaything, the little girl is punished for being sulky and selfish. Grandmother gives John a toy, but Mother acts as if the gift had been made equally to the two children. In every way she kills in them that natural instinct for pride in ownership.

Then comes a day when she fusses because the children do not take care of their toys, do not pick them up, do not realize that they have money value. But why should they? Those things are common property—there is no sense of personal responsibility.

If John can take Mary's things without leave or license, and she can take his, and Mother can do the same with Father's, what's the difference if they take Mother's? The children are old enough now to know that money buys candy, money will get admission to the movies, money is needed for that "tweeny-weeny" doll or those marbles down at the corner store. They have seen Mother pay for the things she bought at the store. So now, not having any money of their own, they take it out of the pocketbook which belongs to Mother, but which to their way of thinking is a family affair.

Each member of the family should understand and should practice the principles relating to ownership. There should be no appropriating of one another's belongings without a request and a "thank you." The forming of this habit will require persistent patience on the part of the adult members of the family. A penalty might be imposed for every infringement of the rule.

Of course, each child should have an allowance out of which he must purchase some necessary article. At first the amount should be small and the requirement a simple one. For example, when he first enters school, it might be well to insist that he pay for his own pencils. As he grows older, add an item at a time, and at the same time increase his allowance.

This allowance should not be "something for nothing." Each child should have certain duties about the house, the performance of which will entitle him to his allowance, and the neglect of which will cause the withholding of it.

Thus the child learns that money is obtained by rendering service, that each member of a family has work to do, if the house is to be a home, and that respect for the rights of others is one of the first rules of life.

THE WOODLOT ON THE FARM

Greatest Harm Done by Allowing Cattle to Graze Where Young Trees Should Have a Chance to Develop.

BY ARTHUR HERBERT RICHARDSON.

During last summer a survey was made in one of the old settled parts of Ontario, to determine the amount of forest land available for tree planting, and to classify the kinds and conditions of farmers' woodlots. The work was done in a county where the prevailing species are hard woods, such as beech, birch, maples, etc., and where the valuable sugar or hard maple was so common that by some it was considered a weed. Each piece of woodland one and one-half acre in size, or over, was examined and a report was made out giving answers to carefully prepared questions.

One of these was "Has the woodlot been seriously damaged by cattle?" in 4 townships examined, where the above hardwood species are common, the answer too frequently was in the affirmative, and of the total number of woodlots examined during the summer, a large per cent. had been given over to cattle to be browsed, weakened, retarded in growth and finally to produce inferior timber for fuel.

When Nature is allowed to produce trees in her own way without the devastating effects of stock, the floor of the forest is made a source of food and recuperation. If the woodlot is made up of mixed hardwoods of nearly the same age, or if it consists of cut-over land which is beginning to sprout or seed in itself, an examination of the underbrush and forest floor will be instructive to the man who is interested in the betterment of his bush. On the ground, beneath the larger trees, if these are present, is a thick network of young growth ranging in size from a match to a whip-stalk. These are the children of the forest and on them, just like the children in any community, depends the future of the woodlot. Beneath these is an accumulation of forest debris made up of leaves of successive summers, droppings of twigs and pieces of bark, pressed down by snow of many winters. This layer, which is often called duff, serves as a mulch to the forest trees. On top it is coarse and irregular but as it nears the ground it becomes finer and richer until it mixes with the virgin soil. This is Nature's seed bed, her storehouse for food, her reservoir for moisture. If the forest floor is therefore destroyed, the children of the forest are killed, food is not permitted to accumulate and moisture is denied the trees. All this means that the life of the wood lot is shortened and the chance for perpetuity destroyed. Horses, cattle, sheep and hogs, if allowed to run continually in a hardwood bush, destroy the young trees and destroy the forest mulch. Horses nibble the tender shoots of seedlings, feed on leaves and tear the branches as far as they can reach. Cattle damage the young growth and expose and injure the roots of larger trees with their sharp hoofs. Sheep are destructive by nibbling and tramping, hogs destroy seed and nature's seed bed. Many farmers have noticed the trees of their wood-lots beginning to die in the tops. Branches cease to bear foliage and give trees an unhealthy appearance.

Then in some windstorm these are the first to be thrown. This "stag-headed" appearance on the part of the trees is seldom connected with the unfair treatment of the forest by the owner. Due to lack of food and moisture, caused by the destruction of the forest floor by cattle, the trees have been unable to obatin nourishment and consequently have declined in vigor.

With many farmers and stock owners, the woodlot section of the farm forms a part of the general pasture and the cattle move freely from one to the other. In some sections of the province, large tracts of cut-over hardwood land are purchased as a "ranch" for the purpose of pasturing young cattle in the summer. Such large areas, of course, consisting as they often do of inferior hardwoods, are not under discussion in this article, but where the farmer has a few acres of good bush, and is proud of it, and wishes to give it a chance so that it will continually provide him with fuel and an odd stick of timber, he should keep the cattle out. Where, however, the wood lot consists of a number of acres, and where it might prove a hardship to fence it entirely from cattle, a plan should be adopted whereby a small section is given over to cattle and the remainder is fenced on for recuperation. In the protected part the young tree growth will come on uninterrupted, additional seed will germinate, the forest floor will be protected and the woodlot will take on a much healthier and more natural appearance.—Canadian Forest and Outdoors.

HUMAN NATURE IN HENS

For the summer vacation there are few more diverting recreations than studying animals. And to observe animal nature you need not go far afield or be equipped with expensive apparatus. It is enough to use your eyes and ears near home. There is much to be learned about all the barnyard inhabitants, and the most interesting of them, perhaps because they are the most irritating, are the hens.

They are the most widely distributed of all the domesticated animals, for they are found in almost every part of the globe that is inhabited by human beings, among the savages of little-explored regions as well as in the back yards of civilization. Even the families who make their homes on the canal and river barges of Europe keep hens.

Hens have been associated with man for a long time; they are mentioned in some of the oldest texts. Many of their traits are so like those of human beings that certain observers have concluded that a hen on the highroad is the ultimate symbol of human nature.

However that may be, it is easy for anyone to notice instances in which hens act like the higher bipeds. They are snobbish. If you introduce a new hen to a flock, the older residents will at once attack her; and until she has proved her qualities she will be kept away from the feed box at least until the old-timers have had their fill. At night she will not be permitted to roost among the native daughters, but must find a peg apart in the slum corner of the henhouse. When the flock is roaming in the fields she will be "cut" and left to scratch for herself; but if she finds a good place for worms, the old settlers will "jump her claim" as soon as they discover her luck.

But in time of fear or trouble hens, like human beings, are likely to forget their social distinctions. If at the end of the day the flock finds that the wind has shut the henhouse door and that they must seek shelter under a bush, they will all huddle together, immigrants and native stock, without discrimination.

Among hens as among human beings the strongest and boldest rule. If there is a rooster, his leadership is accepted without a dissenting squawk; but if all are hens, there is sure to be a fight to determine who is to be the social arbiter. In picking roosting places for the night hens observe a system of rank as rigid as that of a diplomatic dinner in London. If a pariah ventures to push in among the aristocrats on the top roost, the others peck her until she returns to her proper station.

Once the hen leader has been chosen there is little insurgency, but let the social boss weaken and woe unto her! A rival is always ready to take her place. And in eliminating competitors hens are most businesslike. If a hen feels under the weather or is injured, there is none so magnanimous as to refrain from giving her a stab. If she disappears for a time to hatch a brood, she must give a strict account of herself upon her return. But no matter how meek a hen has been she will when she becomes a mother defy the queen of the flock in defence of her young. Similar new courage has been noticed in human mothers.

YOUNG SCOTS IN QUEST OF FORTUNE

Finding the routine of city office life uncongenial, four young men from Glasgow, who were college chums together, have set out to jointly try conclusions with fortune in Canada's broad spaces.

Of ages ranging from 19 to 21, the young adventurers — Frederick S. Binnie, Walter Mortimer, James C. Fleming, and Norman J. M'Gaw—sailed from Liverpool for the Dominion recently on the Canadian Pacific S. S. "Montroyal," as third-class passengers. Educated at the Fettes College, Edinburgh, they worked for some months in stockbrokers' and shipping offices in Glasgow, but found a clerical occupation unpalatable. Each of them secured £100 capital from his parents before starting out on their venture, and they will travel right through Canada from Quebec to Vancouver. All four are fine speciments of young Scots, and they expect to take up farming or fruit growing in the west.

A Prayer.

If I have faltered more or less
In my great task of happiness;
If I have moved among my race
And shown no glorious morning face;
If beams from happy human eyes
Have moved me not; if morning skies,
Books, and my food, and summer rain
Knocked on my sullen heart in vain;
Lord, thy most pointed pleasure take,
And stab my spirit wide awake.

—Robert Louis Stephenson.

If the slats in the pig creep are placed vertically instead of horizontally, the creep can be used without changing until the pigs are much older.