Soils and Crops

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Profit in Purebred Sires.

The cash value of using a purebred bull has been strikingly proved in an interesting experiment carried out last year by a farmer on the Pacific coast. He was able to show a difference in the selling price of $53.40 between two steers of the same age, out of the same kind of cows which had been reared side by side on the range and had been finished together in the same feed lot—a difference, according to his own statement in an American farm paper, due entirely to the influence of a pure-bred as against a scrub sire. The story of the experiment is thus briefly told in the words of the producer himself: "Both steers were calved in the spring of 1918, their dams being the same kind and quality of cows. They were put together in the fall of 1919 and fed together during the winter of 1919-1920. They were turned into the same pasture in the spring of 1920 and put into the same feed-lot on December 1st, 1920; they were then fed all the alfalfa hay they would eat until January 15th, when about 20 lbs. of silage and 5 to 6 lbs. of corn were added to their daily rations, until March 20th, when they were shipped to Spokane for sale. The steer sired by a purebred bull weighed 1,410 lbs. and sold for 8c per lb., or $112.80. That sired by a scrub bull weighed 990 lbs. and sold for 6c per lb., or $59.40, the difference in the selling price of the two steers being $53.40."

A similar result demonstrated by carloads was recently recorded on the Chicago market. An Illinois feeder shipped two carloads which he had fed since weaning, one carload the progeny of a purebred bull, the other purchased in his immediate vicinity. Throughout the animals were fed and grazed together. The load of his own breeding weighed 1,365 lbs., while the purchased load weighed 938 lbs. The spread in price was 75c per cwt., while the total difference per head was $42.91, a result solely to be credited to the purebred sire.

How Can We Meet the Shortage of Hay and Straw.

The general crop situation in Ontario during the present season indicates the necessity of radical changes in the feeding of roughage this winter. How may roughage be saved? What are the substitutes, if any? It has been shown that live stock may be maintained on a ration of concentrates. This is neither practical, economical, nor necessary, however. In very brief form the situation may be approached under the following headings.

Care in feeding—Possibly in 75 per cent. of our live stock farms hay and straw have been overfed. With the mows full and hay cheap, our live stock have been asked to obtain the nutrients necessary for their maintenance and growth by handling large quantities of crude fibre with a comparatively small percentage of nutrients. Under these particular conditions they have come through the winter at least fairly well. With hay and straw at a premium, however, the question arises to what extent can roughage be cut out of the ration of the horse or cow and substituted with other feeds which are procurable. Very few feeders have ever had occasion to weigh the hay which they are feeding their live stock. The manger is filled and the operation repeated. When it is considered that the standard recommendation for the feeding of hay to horses is at the rate of 1 lb. to every 100 lbs. of live weight, it will be appreciated that many horses have, in the past, eaten hay for their own amusement only. When it is realized that 8 or 9 lbs. of good clover hay and 4 or 5 lbs. of oat straw is all the roughage needed for the milking cow supplied with a well balanced meal mixture and ensilage it will be evident that hay is in the very great majority of cases overfed to cattle. Even for the producing dairy herd where no other roughage appears in the ration and where it is supplemented only by concentrates the very limit of hay that would be required would be 20 lbs. daily with say 8 or 9 lbs. of oat straw and this for the cow that is being held over for better times, and this will describe the situation in many districts that cutting down the quantities used in past feeding practice a full 50 per cent. and substituting with a few pounds of meal would not only effect a great saving in roughage, but incidentally would bring the cattle in question through in as good or better shape than had been the case where roughage was fed in unlimited quantities.

More silage and roots—In many sections of Ontario particularly, hay may be substituted by the use of more ensilage and roots. Where succulent roughages such as the foregoing are available the quantity of hay fed may be cut to the very minimum. These feeds will, however, not be available to any great extent in many parts of Quebec and the greater part of the Maritime Provinces according to present indications.

Meal substitutes—To replace one-half of the ration where dry roughage has been calculated to form the whole ration of the cow, oats, bran and oil cake are particularly to be recommended. Oats in itself is from 10 to 12 per cent. more valuable than bran from a milk producing standpoint. In itself it has a fairly high fibre content. All through Eastern Canada, however, oats is a light crop and we will be forced to depend upon Western production. Wheat by-products should be fairly readily procurable. Oil cake and linseed by-products will be high in price, but will apparently be available fairly generally. Even at this high price it is doubtful if the feeder whose main desire is to cut down on roughage cannot afford to be without some linseed oil meal in the ration. With 10 lbs. of hay of fair quality, 4 to 5 lbs. of straw and depending on the age and condition of the animal, a few pounds of a mixture of bran 2 parts, oats 2 parts, linseed oil meal 1 part, production need not be looked for, but the animal will be well maintained. Corn, from all indications, will be one of the heaviest crops ever recorded in the United States. This means that ground corn may enter largely into our Canadian rations. A mixture of 4 parts bran, 2 parts corn, 2 parts oats and 1 part oil meal would be an excellent concentrated substitute for a roughage. Even bran and corn, as these concentrates are likely to be the most easily procured, could be fed, 4 parts bran, 2 parts corn.

The use of straw—Where roughage is scarce, straw cannot be afforded as a bedding material, particularly oat staw. It must practically all be fed. The practice of feeding cattle entirely on straw is, of course, not economical, but the ruminant must have a certain amount of crude fibre. They should not, however, be asked to obtain their energy from the comparatively low percentage of nutrients contained in straw. Nevertheless, with some grain or concentrates supplied, straw forms an excellent crude fibre filler and in order that the digestive and excretory organs may function properly, straw may be made to take the place of much more valuable roughage. It is safe to say that there will be very little bedding wasted this winter in many parts of the East. Sawdust and shavings are available in many places. There is no reason why considerable bedding material might not be gathered in the form of leaves in the fall. They have been utilized in the past.

The advisability of cutting hay and straw and of mixed feeds—By increasing the labor of feeding in the cutting of roughage and by mixing say cut hay, cut straw, and whatever meal is being fed, there is little doubt that a considerable saving of roughage may be secured. Less energy is required to masticate, digest and assimilate this cut feed, and where it is mixed the palatability is bettered or at least averaged. Under normal feeding practice the advisability of cutting roughage is doubtful in that the cow is fitted by nature to do this work herself. However, this winter the object is to save roughage and the farmer who has facilities for cutting the roughage will find a result in saving. Can the feeding value of such a mixture be further improved?

Molasses—A straight comparison of molasses with such feeds as bran, oats, shorts, corn meal, etc., shows the fact that molasses has a comparatively low feeding value. It is true that the sugars are of considerable value from their carbohydrate nature. However, as a conditioner or as an agent to render other feeds more palatable, and on top of this, with the very fair feeding value in the feed itself, molasses could be highly recommended to feed either mixed with cut feeds, distributed in the undiluted form over hay or straw, or diluted with water and sprinkled by the use of a watering can over the feed in the mangers. It is a wonderful relish and the use of comparatively small quantities of it is easily seen in the better condition of cattle. Apparently the feeding grades of molasses will be fairly readily procurable, particularly in the Maritime Provinces. Prices will be very considerably lower than have applied within the last few years and the comparatively small quantity that would be required would be such as to force the use of this material on the consideration of live stock feeders wherever it may be procured.

The value of chaff and leaves—In the past considerable quantities of the most valuable part of the plant have been wasted in the form of chaff, leaves, etc. These accumulate on the barn floors and too often find their way to the manure pile or barnyard direct. They must, of course, reach the barnyard by way of the manger.

In general it is difficult to offer a recommendation where such a wide variety of cases and conditions arise. The main advice to be given, in conclusion, is after all extreme economy in feeding hay and straw. Weights and quantities are difficult matters to juggle with when speaking in a general way. The eye of the feeder is, after all, of proverbial merit. More or less experimentation will be required by the individual feeders in cutting down little by little the roughage which he has been accustomed to feed and replacing it by minimum quantities of concentrated or grain rations. If hay continues to increase in price and if grains and concentrates do not rise too quickly, it would actually be cheaper to cut down roughage 50 per cent. and replace with some of the grain mixtures recommended.

The man who does not take every possible step to hold over his stock, and who sacrifices his assets, will make an unqualified mistake. True, it were distinctly better to dispose of, practically give away, a judiciously culled few, and winter the balance fairly well, than to stint all. Such a loss though immediate, may prove a blessing in disguise. After all, the problem resolves itself into one of distribution and control of supply, a question which may have to be handled by the province most affected. In Ontario, with not more than 10 per cent. of last year's crop held over in the form of low grade hay and with a 60 to 65 per cent. normal crop this year there is no "bullish" movement to the hay market as yet.

Poultry

No colony house should have more than fifty chickens in it at one time.

More eggs, less feed and more money has been the result of culling out the poor hens early.

A ragged bird that has just begun to molt should not be culled now just because she is not laying.

Head lice on chickens or turkeys can be killed by rubbing on a little camphorated oil.

Keeping young roosters after they weigh five pounds to the pair is a waste of food, for after their combs grow they are classified in market as "old roosters," which bring considerably less in price.

Do not overcrowd. A great many farm poultry keepers in their enthusiasm for making money attempt to keep twice as many birds as they have room for and, by overcrowding, almost entirely cut off the production of winter eggs. Each bird should have about three square feet of floor space in the house. Either build more houses or market the extra birds before winter sets in.

Corner nests save room, and, being semi-dark, hens prefer them. They can be built in any style desired—can have solid walls, or they may be made slatted, with plastering lath. The latter plan might be preferable in most climates, as the air could enter them more freely. The opening to the lower nest should be about three inches from the floor. A perching board had best be erected for the hen to alight on in flying up to the top nest.

He Got One.

Uncle—"You ought to be ashamed of yourself, Tommy. See what a lot of prizes your sister has got, and you haven't even earned a certificate."

"Oh, but I got a certificate once, uncle," said Tommy.

"Indeed! What for, I should like to know?"

"For being born."

"Barnyard golf links" are a pretty sure sign of a happy farm or community. Pitching horseshoes is a one hundred per cent. Canadian sport.

The World's Live Stock Situation.

The new United States protective tariff is having a depressing effect on the live stock situation in this country, particularly as regards western provinces. This situation, however, is not without hopeful signs; statistics gathered by the International Institute of Agriculture show that in Europe there was a tremendous decrease in live stock at the end of 1920 compared with pre-war years, excepting only in sheep in Germany. In Britain the decreases shown were of cattle 421,657, of sheep 4,638,617, of swine 523,748, or about a fifth of the number in the country in 1914. In France the decrease of cattle was 2,414,050, of sheep 7,140,400, or nearly fifty per cent. less than in 1914, of swine 2,955,290, or 30 per cent. less than before the war. In Italy the decreases were of cattle 400,259, of sheep 2,070,000, and of swine 383,074, or a seventh of the whole. In Germany there were decreases of cattle 4,089,963, or more than a fifth and of swine 11,389,643, or nearly forty-five per cent. Belgium showed decreases of 557,213 cattle, of 59,171 sheep, and of 866,519 swine, being a decline of over thirty per cent. in both cattle and sheep and of more than 50 per cent. in swine. Not only the countries that participated in the war show decreases but every country in Europe, excepting only Spain and Portugal, is in the same position. Thus Denmark shows a decline of 60 per cent. in swine and the Netherlands 65 per cent., these being Canada's principal competitors in hog products. Returns from Russia and Austria for obvious reasons are not given, but Czecho-Slovakia shows a decline of 30 per cent. in cattle and nearly 55 per cent. in swine. The United States shows an increase of close upon 17 per cent. in cattle, a loss of nearly 10 per cent. in sheep, and a gain of over 12 per cent. in swine.

Robber Bees.

During a honey dearth while the weather is still warm, the bee-keeper should in all his work carefully avoid doing anything that will excite robbing, for robber-bees are a constant annoyance and danger in the apiary. Bees that have nothing else to do in warm weather will readily yield to any temptation to obtain honey in this way. After more or less fighting they will overpower any very weak colonies, especially those that have lost their queen, and will carry the honey to their own hives. Robbing is frequently started by the carelessness of the bee-keeper during manipulation, especially when removing the honey.

In dealing with this subject in Bulletin No. 26, Second Series, available at the Publications Branch of the Department of Agriculture, Ottawa, the Dominion Apiarist points out that to prevent robbing, no colony should be allowed to grow weak and no honey or syrup should be exposed in the apiary. If robbing has begun, the attacked colonies should have a bunch of wet grass or weeds thrown over the entrance. Hives should be opened as little as possible, and then only during the hour before sunset, or early in the morning, or under a net tent. It is advisable, after the honey flow is ended, to contract the entrances of all hives. One can tell if a colony is being robbed by seeing the robbers enter hurriedly with the abdomen contracted and leave with the addomen distended, flying straight home.

Making the Old Farm Well Do New Tricks

No more wading through snow-choked paths on a freezing January day for the farmer, loaded down with immense pails of water for the barnyard drinking trough! No more carrying of water from the old pump on "blue Monday" for the farmer's wife! The modern farmer revolts against being civilization's drudge, and one of the oustanding signs of his revolt is his determination to have an up-to-date water system on his farm. Heretofore, the storage tank has found favor in various quarters as a successor to the old-fashioned, back-breaking, pump-and-pail method. Users of the storage tank, however, find that its water supply is not fresh, but stale and brackish and at times contaminated with deposits of slime and rust.

One of the best systems available for farm use to-day discards the storage tank altogether and substitutes an air tank and an air-operated pump submerged in the well. The other essentials of the equipment are an air-compressor, an air-trap, and an engine or motor to supply the power. The first advantage of this system appears in the process of installing it; the engine, air tank and connecting apparatus may be located in any convenient place about the farm buildings, and the owner is saved the expense of building a pump house or digging a pit in which to bury a tank, as is necessary in many storage-tank systems. Often he finds an outbuilding the best location if he wants to get double use from his gasoline engine in operating other farm machinery. A good place is the basement of the farmhouse, from which pipes can easily be run to the kitchen and bathroom upstairs, as well as to hydrants in the yard and the stable.

A gasoline engine or electric motor operates the air-compressor by means of a belt. The compressor sends the air in the tank through a galvanized iron pipe into the well, driving it into the pump, which is submerged at least six feet below the surface of the water. Besides the air-pipe leading into the pump, an air exhaust-pipe leads out of it, also a water discharge-pipe which connects with the air-trap and the faucets. The pressure of the air, driven by the compressor, forces the water downward in the pump cylinder and upward again through the water discharge-pipe. As it travels out of the well to the air-trap and the faucets, the air escapes into the upper part of the well through the exhaust-pipe.

The expansion of the air in the trap, after each discharge of the pump, exerts enough pressure on the water in the trap to secure a constant flow from the faucets. Not even a city water-system could maintain a steadier pressure on its pipes.

If the farmhouse has a cistern, a second pump with pipe attachments may be sunk into it, with a special air-trap, while the same engine, air-tank and compressor that supply the hard-water faucets will provide soft water for laundry and bathroom purposes. With equal facility water may be piped to the farm buildings from a spring, lake or a running stream.

If a gasoline engine is used, an automatic cut-off is provided to stop it when the proper pressure is reached. Thus the farm owner may start the engine and leave it, secure in knowing that there is no chance of the air tank's becoming overcompressed.

The advantages of this system are almost endless. With an hourly capacity of 300 gallons at a total lift of seventy-five feet and 200 gallons at a lift of 150 feet, is there anything a man can not do with it? Besides saving unlimited time and strength, it insures an inexhaustible supply of fresh drinking water, free from contact with the open air and dirt, not only for the family but for the stock. It makes possible the more frequent watering of dairy cows than under the old systems, also the indoor watering which wise farmers prize highly. It brings water of just the right temperature, thus encouraging the cows to drink all they need and increasing the milk output to a surprising degree.

The system furnishes plenty of water to sprinkle the farm lawn and garden and to keep the housewife's flower beds flourishing. Owners of "show country places" may even gratify their cravings for a lily pool or a fountain, if their water-supply warrants it.

The farm owner need not be afraid that the system will monopolize his gasoline engine. In fact, he may use the engine at the same time to furnish electric lights, grind feed and separate milk, thus considerably reducing the cost of his water-supply. All of which means that the pump-and-air-tank system loses no time in paying for itself.

There is no best water-system for farm homes, but there are many good ones. Whoever has a gas engine or electricity should have running water.

Destroy weeds this fall and they won't get a chance to grow next spring.

A neighborhood without a community house is like a family without a home.

A few minutes given at a definite time each day will keep a record of the farm business; and with accurate figures at the end of the season a man can see at a glance where he is making money and where he is losing it.

The fall hotbed will supply the table with a few fresh vegetables during the late fall and early winter. Select the warmest and sunniest spot in the garden, where water never stands, and put the hotbed there. Dig a pit from fifteen to eighteen inches deep, six feet wide, and as long as the hotbed is to be. Let the pit extend east and west. Build a frame around the pit, preferably of two-inch boards for a permanent structure, having the rear or north wall fifteen inches high and the south wall eight inches above the margin of the pit. Bank part of the excavated soil around the outside of the frame, to give additional protection. Fill the pit with fresh strawy stable manure to a depth of fifteen inches after it is packed down by tramping. Above this, place four inches of rich garden soil, in which the seeds are to be sown.

A septic tank may save your life.

Simple Methods of Preserving Vegetables

While many garden vegetables can be stored in a well constructed cellar for use during the winter and spring months, there are advantages in preserving some of them in crocks, bottles, and other containers. A simple method of preserving vegetables by fermentation and salting is described in Bulletin 93 of the Experimental Farms, Ottawa. Such containers as old kegs, butter tubs or stone crocks may be used. The preservation may be carried out either by salting without fermentation, fermentation with dry salting, and fermentation in brine.

Salting Without Fermentation.

The vegetables best suited for salting without fermentation are spinach, string beans, green peas, corn and cabbage. The vegetables are washed, the water drained off, and the vegetables weighed. The best results are obtained by using 25 lbs. of salt to every 100 lbs. of vegetables. Spread a layer of the vegetables one inch deep in the bottom of the crock and sprinkle with salt, being careful to distribute the salt evenly. Continue making alternate layers of vegetables and salt until the crock is nearly full. Cover with a piece of cotton or a double thickness of cheesecloth. Over this put a plate or a piece of board and a weight. A clean brick or stone may be used as a weight.

The container should now be set aside in a cool place. If at the end of 24 hours the salt and the pressure on the vegetables have not extracted brine enough to cover, add a brine made by dissolving 1 pound of salt in 2 quarts of water. Enough brine should be added to come above the plate or board. Set aside in a place where it will not be disturbed and cover with hot paraffin wax.

Beans should be cut in two-inch pieces; peas should be shelled; while corn should be cooked for ten minutes to set the milk, after which it is cut off the cob with a sharp knife.

It has been found that in preparing salted beans for the table, it is much better to soak the beans for two hours in the morning, changing the water several times, and also changing the water while cooking, rather than to allow them to soak over night, as long soaking softens the beans.

Fermentation With Dry Salting.

In preparing vegetables for fermentation with dry salting, the vegetables are washed, drained and weighed. Use about 3 lbs. of salt for 100 lbs. of vegetables. No water is necessary, because the salt extracts the necessary moisture from the vegetables. Cabbage, string beans, and beet tops may be treated in this way. Spread a layer of vegetables one inch thick in the bottom of the crock, covering with a very thin layer of salt, being careful to distribute the salt evenly. If more salt has to be added the finished product will be too salty. Fill the crock only three-qauters full, placing a cloth over the top, then a plate turned upside down or a piece of clean board, and a weight. A ten-pound weight is sufficient for a five-gallon crock.

The container should be allowed to stand in a warm room for from eight to ten days. When bubbles of gas cease to appear the fermentation is complete.

A layer of hot paraffin wax, about one-half inch thick, is poured over the top to prevent a scum forming. It is very important that the wax should not be added before the fermentation ceases.

Fermentation in Brine.

Cucumbers, string beans, green tomatoes, beets, peas, and corn may all be preserved in brine. Wash the vegetables, drain off the water, and pack in a crock until nearly full. Prepare a weak brine, using one-half a pint of vinegar and three-fourths of a cup of salt to each gallon of water. If a five-gallon crock is used, two and one-half gallons of brine will be necessary. This must be covered with a cloth, a piece of clean board or a plate, and a weight. The containers must be left in a warm place until the fermentation has ceased and then taken to a cool place, where it will not be disturbed after covering with hot paraffin wax.

When salting cucumbers, a layer of dill and a handful of mixed spice may be placed on the bottom and top of the crock. Green tomatoes may also be prepared with dill and spices. Beets should not be peeled or sliced before being fermented or they will lose their color and flavor. Fermented corn may be used in the preparation of such dishes as chowders or omelets, where the acid taste may not be objectionable, as it might be to some people if the corn were eaten alone.

The Welfare of the Home

Dealing With the Angry Child—By Jennie S. Clough.

Of the many problems which confront a mother, one of the hardest is that of meeting in the wisest way the undesirable traits that appear in children. In dealing with these problems there are two great helps. First, a sense of humor. If a child comes down to breakfast sullen and bad-tempered, make some little joke, it helps to clarify the atmosphere. I don't mean laugh at the child, that only adds fuel to the fire; but do some amusing thing, or tell a funny story and you will make the clouds vanish like magic. Parents who appreciate fun and who are the real companions of their little ones have the happiest and most affectionate children. But most important of all is grace. Grace is that lovely, loving spirit which, no matter how trying the children are, cannot be disturbed. We cannot have this of ourselves, it is the gift of God. He says, "My grace is sufficient for thee," so, when the children are noisy and naughty and our nerves seem just about in pieces, let us say this over and over mentally and we shall be surprised at the peace and quietness within ourselves that will follow.

Granted that we have sympathy and poise ourselves, we are in a fit condition to help our children to overcome their faults. Often children are cross and naughty because they are overtired, over-excited or hungry. We must be sure that their naughtiness does not come from some physical reason that we can help. If a child is in a bad temper the first thing to do is to quiet him. How? By being very quiet ourselves, but very firm, letting him see our strength and poise and then trying to find out what has stirred him. By our talking it over with him and letting him pour it out, his nerves will be freed and he will have an outlet for his passion. If he seems uncontrollable, and it is impossible to talk with him, put him by himself until he is more calm. While he is in a temper be careful not to leave him where he can break or destroy anything. Often his outburst is like a thunder storm, the thunder and lightning are tremendous while they last, but are soon over. Then, just as soon as possible, divert the child, get him interested and busy about something.

A much harder type of child to deal with and one that tries our patience more, is the sullen child. He makes no outlet for himself like the angry child who vents his temper in screams and passionate talk. His bad temper works all on the inside. He broods over the trouble, distorting and enlarging it by dwelling upon it. He usually refuses comfort or sympathy and seems to enjoy shutting himself away from everyone. He is usually a sensitive child—shy, lacking confidence in himself, inclined to dwell upon himself too much. What can we do with such a child? He won't talk the trouble out, like the high-tempered child, and it is unwise to put him by himself as you would the high-tempered child. Give him something to be busy about as soon as possible. Work is even more necessary for him than for any other type of child, for we must get him out of himself. If possible, have him work where he will have the companionship of his brothers and sisters, or perhaps he can help you in what you are doing. Work is a blessing for most persons, but for no one more than for the child who is inclined to live his little life inside of himself. This type of child is usually reserved and takes things hard, but to the few people he loves he gives a wealth of affection and loyalty and usually he has a deep, strong nature which is sincere and true.