Soils and Crops

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Skim-Milk Tops the Feed List.

Though few farmers seem to appreciate the fact, skim-milk, a common, too often wasted dairy by-product, is a composition of body-building combinations not contained in any concentrated ration that can be mixed and fed. In face of these facts, demonstrated beyond the experimental stage, we find in many dairy communities skim-milk being poured into the creeks and sewers, because its value is unappreciated.

And so the real value of skim-milk, from a feeding standpoint, for farm animals is very often overlooked by those who are fortunate enough to have this product on their farms. Quite a few breeders of live stock, especially dairy farmers, when using milk for raising their calves, use skim-milk.

The dry matter in one hundred pounds of skim-milk is usually less than ten pounds, but it is concentrated and easily digested, and the elements in its composition are the kinds needed that make them unusually efficient, when properly balanced. These elements are in the approximate proportion: Protein (muscle-building material), four per cent.; sugar, five per cent.; mineral matter or ash (bone-building material), nine per cent, and fat, ten per cent. It is, therefore, essentially a protein feed, with a nutritive ratio of one to two, and is preferably supplemented in feeding animals with feeds less concentrated like cereals, shorts, etc.

There are certain constituents that are absolutely essential to life. Some feeds contain constituents that produce only one essential in the life process, such as growth or maintenance. Therefore, a ration must have proteins or muscle-building feeds, essential for maintenance and growth. Experimenters have found with pigs, particularly, that the growth and maintenance constituents were most available in skim-milk followed by corn, wheat, oats, linseed meal, etc.

Skim-milk is used exclusively for feeding calves and pigs more than with any other class of farm animals. It is sometimes fed to poultry also. Some people have expressed disfavor on the appearance of calves fed skim-milk and blame this condition on the removal of the fat from the milk. However, in a great majority of the cases the feeder is to blame, as it is usually due to his ignorance and carelessness.

In a trial at the Kansas Experiment Station some time ago with dairy type steer calves, one lot was fed skim-milk, another lot whole milk, while a third lot ran and sucked their dams at pasture. In addition, the calves receiving skim-milk and whole milk were given equal parts of corn meal and kaffir corn meal with alfalfa hay. The skim-milk fed calves up to weaning time, made average daily gains of about one-quarter pound less than the other calves. But the total feed cost for all calves for one hundred pounds of gain, that of the calves receiving skim-milk was only 16.5 per cent., as compared to 51.5 per cent. for the whole milk calves, and thirty-two per cent. for the calves running with their mothers.

After weaning, the whole group of calves were placed in a feed lot and fed the same rations and the skim-milk calves made the highest daily gains and required less feed for one hundred pounds of gain than the other calves. An interesting sidelight of this experiment is that the suckling calves after weaning, lost four pounds in weight each the week following.

In hog feeding, the feeding values of skim-milk are perhaps more clearly demonstrated. Everything considered, it is safe to assume of all supplementary feeds, it is one of the very best. It is especially fine for suckling sows, and particularly for the young growing pigs, and can also be used for bred sows, breeding boars and show stock.

A summary of work done by seven experiment stations, comparing corn alone as contrasted to corn supplemented with skim-milk, shows some rather interesting results. The data involves the use of one hundred and six pigs averaging about one hundred pounds in weight when the experiments started. One-half of these pigs received corn alone and the other half corn and skim-milk.

Those receiving the milk supplement gained practically sixty per cent. faster than the pigs fed corn alone, effecting a savings of thirty-six days in time required to produce each one hundred pounds gain. The average weight of the corn and milk-fed pigs at the close of the feeding trials was two hundred and twenty-nine pounds, that of the corn-fed pigs one hundred and eighty-four pounds. To have made the latter equal in weight to those receiving the milk supplement would have required forty-three days more.

This summary shows that practically eight hundred pounds of skim-milk saved one hundred and ninety-one pounds of corn, or in other words, a trifle over four pounds of milk is the equivalent to one pound of corn.

There is a limit to the ratio of feeding skim-milk to corn from the standpoint of greatest efficiency of the feeds involved. When feeding corn only and skim-milk, it has been found by several feeders that the skim-milk has its greatest utilization when fed in the proportion of from one to three pounds of skim-milk to one pound of corn. If fed in amounts of three to five pounds to one pound of corn its efficiency is decreased twenty-six per cent., and if the proportion is five to seven pounds of skim-milk to one of corn, the efficiency decreased forty-three per cent. over the one to three to one combination. Naturally, if the skim-milk and corn are cheap and plentiful, the best thing to do if a quick finish is desired, is to feed as much of both as it is possible to get the hogs to consume.

Certain precautionary measures are essential in feeding skim-milk, as follows:

Never feed sour milk one day and sweet milk the next. This results in disordered digestive systems, decreased gains and subsequent larger amounts of feed for a pound of gain.

Feed milk from tuberculin-tested cows only, or have it pasteurized.

Keep all buckets, pails and feed as clean as possible.

Feed regularly at a stated time each day.

In feeding poultry skim-milk, especially the lobbered kind, is the very best feed possible. This is mare particularly true with the little chicks, since it not only puts more gain on them than any other ration, but it serves to carry off the dangerous and poisonous gases, which otherwise retard their growth, ofttimes causing their untimely death.

Locating the Incubator.

The ideal place for the incubator is in the cellar. But some poultry breeders do not have a cellar suited for an incubator. In such cases they may try to do without the machine. By experience and observation we have found that many fine hatches can be brought off in upstairs rooms. It means some co-operation from the family to prevent careless walking or the banging of doors. Hatching eggs are injured by vibration and unnecessary jars.

The machine should not be located near a stove as this may cause too high a temperature during the day, followed by a chilling at night. The fresh air from the outside must be constantly passing through an incubator so the temperature of the machine is always influenced by the amount of heat in the room where it is operated. Some breeders have managed machines in large kitchens by using a small oil stove for cooking instead of operating a cooking stove during the period of incubation. In such cases the machine is handy and can be given regular attention without running up and down stairs from the cellar.

An incubator should be placed on a level floor. Often a kitchen floor will not be level near the wall, but the machine can be properly regulated by the use of old shingles. Place a spirit level on top of the machine and shove shingles under the short legs until the machine is level and on a firm foundation where it cannot slip.

It is not best to operate an incubator in a living-room that must be used all day. The fumes from the machine and the burning of the large lamp help to exhaust the air. In a kitchen that is not used more than a few hours a day the machine will not cause serious inconvenience. It does not pay to try and do without an incubator just because the conditions for running it are not absolutely ideal.

The Dairy

Some men waste enough time milking scrub cows that they are lucky to be outside the poorhouse, according to E. M. Harmon, dairyman. Few of us realize the tremendous amount of time and effort lost in feeding and milking the scrub cow. Cow-testing associations are throwing some interesting sidelights on this subject.

For instance, they found last year that the cow that averaged 100 pounds of fat per year produced only 0.38 pounds of butter-fat and nine pounds of milk for each milking day. The cows that averaged 200 pounds of fat per year averaged 0.68 pounds of butter-fat and fifteen pounds of milk for each milking day. Those that averaged 400 pounds of fat per year produced 1.83 pounds of butter-fat and 25.1 pounds of milk per milking day. In other words, one man got thirty-eight pounds of butter-fat and 900 pounds of milk per cow for each 100 days milking while his neighbor got 133 pounds of butter-fat and 2,500 pounds of milk for the same number of days' work. This does not take into account the fact that the feed cost of producing butter-fat in the low-producing cow was 37.3 cents per pound while the good cow produced it at 17.3 cents per pound.

Is it any wonder that some men can own cars and build modern homes while others cannot? The cow-testing associations are building up production and profits. They constitute a powerful factor for benefiting the dairy farmer.

Hammer handles all in? Soon be time to fix fences.

Poultry

Adequate ventilation helps to keep the house free from moisture. Plenty of ventilation without drafts keeps the fowls healthy and vigorous. When fowls are allowed to roost in a draft they catch cold easily.

Hens to be marketed are those that have a decidedly crooked breast-bone, scaly legs or long toe-nails, or are "broken down" behind, or have abdomens that are fat and hard.

Any poultry house should be so constructed that it may be easily cleaned and disinfected. Most common poultry diseases are highly contagious. Mites breed rapidly, and in houses which are hard to clean are extremely hard to eradicate.

Sunlight is a good germicide, helps to keep the house dry and warm, and therefore helps to approximate spring conditions. Provison should be made so that the sunlight will strike all parts of the floor of the house at some time during the day.

All feed and litter should be strictly sweet, clean and free from mustiness, mold or decay. Serious losses frequently occur from decayed or moldy feed or litter, due to the spores which may develop into fungous molds in the lungs or intestines of the fowls.

Dressing ducks ordinarily is a tiresome job, but it can be made less tiresome by first dipping the duck in hot water and then sprinkling powdered resin over it. This will cause the feathers to come out in handfuls.

Sudden changes of temperature lower production. It is therefore necessary to protect the poultry house from north winds. This may be accomplished by locating it in the lee of another farm building, an orchard, or a row of trees. Shade should be provided for the fowls in hot weather.

A hen too closely confined soon becomes restless and uneasy. Restlessness results in discomfort and the development of such vices as egg-eating, feather-pulling and cannibalism. There should be plenty of room in the house for proper exercise, not less than four square feet per bird in flocks of fewer than 100.

The damp, cold house saps the vitality of the fowls, lowers production and aids the spread of disease. The hen can eliminate moisture from the body only through the respiratory organs. A damp, cold atmosphere causes the fowl to be uncomfortable, breathe rapidly, pant, and finally to become completely exhausted. Fowls weakened or in an exhausted condition are easily susceptible to disease.

To give castor oil or other liquids to poultry, where individual birds are to be treated, put the dose into a two or three-ounce vial, open the bird's bill and pour it down, being careful not to pour fast enough to cause choking. In the case of castor oil, set the bottle and contents in quite warm water for a short time, until the bottle is comfortably warm and the oil flows freely, but not hot enough to give discomfort to the patient.

If a heavy load of snow or ice comes on the berry bushes and shrubbery, go around and knock off what you can with a pole. May save their breaking down. The careful fruit culturist keeps a watchful eye on his plants and bushes at all times.

Management of the Dairy Herd.

Breeding, feeding and culling, are the three cardinal points in keeping dairy herds with profit. In an address before the Nova Scotia Dairymen's Association, Mr. A. H. White, Senior Dairy Promoter for the Dominion, dealt largely with these three points, showing emphatically how much each meant to the successful dairyman. The object of the dairy farmer should be to obtain the greatest quantity of marketable products with the least expense. This could be accomplished only by careful observance of the maxims laid down. A poor cow costs as much to feed as a good cow and in the long run a great deal more. To breed well, a pure-bred sire is essential; to feed well is to see not only that the food is nutritious and well balanced, but that it is sufficient to enable the cow to produce as much milk as she is capable of giving; to weed or cull well, involves the keeping of records of production—to eliminate the low producers and to retain only those animals that are worth while.

The speaker referred to the help the cow-testing associations had been in connection He gave examples of what had been accomplished, but regretted that many farmers and breeders had not continued as they should have done to keep records and therefore had failed to make returns. He knew of a herd of fours cows, one of which produced 410 lbs. of fat and another 137.9 lbs. in the same period. In the case of two three-year-olds in the same herd, one produced 3,899 lbs. of milk and 146.1 lbs. of fat in ten months. These instances were quoted in proof of the advantage in culling. By turning the poor producers adrift, the average production and average profit would be greatly increased.

Mr. White gave examples of a like tenor as regards the use of pure-bred bulls, and as regards the cost of feed and its bearing on the quantity and quality of production. If one cow, he said, returns three dollars from a dollar's worth of feed and another only two dollars it is rarely noticed, and yet the difference within a year would easily enough amount to a hundred dollars. The only way to arrive at an understanding in these matters was to use the Babcock test and the milk scales. Another thing to remember was that good feeding must begin with the calf. Another point was that cows should be studied individually and not be fed promiscuously and all alike.

It's not what you expect but what you deserve that counts.

Preparedness is the national watchword. Are you prepared for the spring work? Is your seed cleaned and ready to sow? Are your work harnesses and farm tools ready for use? No time to go to town after repairs when the rush begins.

The man who made our fine farm tools knew a lot more about them than we do; but we can find out all the different parts are for if we set out about it. Now is the time to study up on all such things. Worth it, too, for a well-adjusted implement does better work and does it easier than one which is not quite in rig.

Advantages of the Consolidated School

Every reform measure has had its bitter antagonists. When the reaper was introduced into England, the farm laborers wrecked and burned the machines because it was thought it would throw them all out of work. Far be it from me to criticize the antagonists of the consolidated school. They are sincere and no doubt very kindly folks. I write this with the hope that it will shed some light upon this debated question.

Here are some arguments against the one-room rural school; I speak from knowledge born of experience.

The rural schools are unsanitary. There is rarely any provision for ventilation. The floors are in a filthy condition. The toilets are unspeakably filthy; this last is especially true of the boys' toilet, if the teacher is a woman and no adult janitor is employed. Investigate for yourself if you doubt this.

The water supply is almost always poor. Very few rural schools are equipped with sanitary drinking fountains, and where there is one, it is almost always out of order. Individual drinking cups are not a success. They are used for about the first week and then you will find most of the pupils drinking water from a common cup.

In the last rural school I taught there was a water pail and one cup. Two of the pupils had tuberculosis, yet all drank from the same cup. Five of the pupils have died from tuberculosis since I taught there a few years ago.

The rural schoolhouse gets cleaned once a year whether it needs it or not. Between times the janitor—often one of the boys—sweeps without sweeping compound and dusts with a feather duster. As a consequence the dust of ages settles on everything, that is, the dust which does not find its way into the pupils' lungs.

The teacher in the rural school must hear at the least twenty-four classes a day, and some have over thirty. Divide the actual school time into twenty-four parts and it leaves but a very few minutes to a class. Class periods in the consolidated school average forty-five minutes, with ten minutes more for supervised study.

In rebuttal people will say: "All those things were true of the schools we older ones attended, yet we made strong and healthy adults." That is true enough, but it was the work of the old law of the survival of the fittest. Study the old graveyards and read the pitiful records of the little ones. Note again how the number of little mounds is all out of proportion with the natural number of large mounds.

There is but little if any playground supervision in rural schools, and as a consequence iniquity abounds. Right now my wife and I are struggling impotently against the rotten filthiness which is being dinned into the ears of our little girl who is attending a rural school for the first year.

It is better for the children to wade a mile or two through mud or snow or be taken in a school bus. The old argument against the school bus is not applicable now that we are rapidly building improved roads.

Too large a proportion of pupils in rural schools quit school at the end of the fourth book. This is because there is no connection between the public and high schools. In the consolidated school, especially with the junior high school, there is no perceptible break between the fourth book and form I. of the high school.

Teachers in consolidated schools are hired for their fitness for a special work. The primary teacher is trained for that one work, the high school teacher ditto. In the rural school one teacher teaches all subjects and all classes, regardless of her training. Obviously she cannot be good in all subjects. The pupils reflect her weakness in any one or more subjects.

I do not condemn all rural schools. Here and there we find a teacher of exceptional merit and her school reflects her personality. There are many good rural schools but the best of them are not as good as a consolidated school. In their very nature they cannot be. No one teacher can do it all, no matter how good she may be.
—L. B. Reber.

SMOKE
OLD
CHUM
The Tobacco of Quality
½ LB. TINS
and in packages

THE SUNDAY SCHOOL

MARCH 12

Amos Warns Israel, Amos 6: 1-8. Golden Text — Prov. 20: 1 (Rev. Ver.)

Lesson Foreword—Amos was the first prophet whose discourses we possess. Very little is known of his personal life (see ch. 7: 10-17). He had been a shepherd in Tekoa, in the wilderness of Judaea, southeast of Bethlehem. Used to a shepherd's simple life in stern surroundings he was indignant at the corruption and luxury of town life among his countrymen. The main idea in his gospel was that God is a righteous God and that nothing short of righteousness in his people could win or hold his favor.

I. The Godless Rich, 1-3.

V. 1. Amos pronounces woe upon both Zion, the capital of the southern kingdom and Samaria, the capital of the northern kingdom, because they were living in a false security. Their sense of security was due to at least three reasons: First, Assyria, their enemy, seemed to be on the decline and its armies were inoperative in the neighborhood of Palestine. This allowed Israel to live at peace and to prosper and expand. Second, both Zion and Samaria were situated on high hills which were considered almost impregnable against the attack of an invading army. Third, Jehovah was on their side with His protecting power; they were His special people and as long as they worshipped Him with costly ritual He would never deliver them over to their enemies. **Chief of the nations.** Amos is here addressing the well-to-do aristocracy to whom the people came to render homage and for the settlement of their disputes.

V. 2. **Calneh;** probably a prosperous city-state in Northern Syria near Aleppo. It was captured by the Assyrians in B.C. 738. **Hamath the Great;** situated on the Orontes river at the entrance to the Lebanons was the royal city of the Hittites. It was finally subjugated by the Assyrians under Sargon, in B.C., 720. **Gath;** one of the five royal cities of the Philistines. It was the home of Goliath (see 1 Sam. 17: 4), and for a time the refuge of David (see 1 Sam. 21: 10). It fell before the Assyrians, about the same time as Hamath. **Be they better,** etc? The meaning seems to be—great and prosperous as these kingdoms were, they were subdued by their enemies. How then can your kingdom which is no greater than theirs escape a similar fate?

V. 3. **The evil day.** The contemporaries of Amos believed that there would come a day when Jehovah would interpose on their behalf against their enemies. It would be a day of judgment for the surrounding nations but of great blessing for Israel. This was the popular notion. Amos did not deny that the day of the Lord would come but he declared that it would be a day of judgment for Israel as well as for the heathen. It would be an evil day for all wrong-doers and such were the whole nation of Israel. (See ch. 5 :18-20.) When the wrong-doers heard this they tried to make themselves think that the "day" would be long in coming. They refused to see the "signs of the times." **The seat of violence.** This doubtless refers to the mal-administration of justice.

II. Luxurious Livers, 4-6.

V. 4. **Beds of ivory; beds inlaid with ivory.** Ivory was imported into Palestine by the caravan trade. It was regarded by the stern prophet as an unnecessary luxury. **Stretch themselves upon their couches.** They sprawled on divans to eat their meals. This was a mark of indolence and effeminacy. **Eat the lambs,** etc. They were gluttonous and were satisfied only with the finest delicacies.

V. 5. They enlivened their feast with music. "Idle songs were sung to a strumming accompaniment." **Like David.** David was popularly supposed to have been a musician and to have invented musical instruments. While these debauchees may have claimed to have been only following the example of David, they forgot they were profaning music by using it at their drunken carousals while David employed it for the service of God.

V. 6. **Drink wine in bowls.** The word "bowls" emphasized their debauchery. Instead of the ordinary drinking vessel, the cup, they used the larger sized bowl for their wine. This shows how far their self-indulgence had gone. **Anoint themselves,** etc. Oil was rubbed on the skin to allay the irritation caused by the heat and to conceal the odor of perspiration. These dandies, not content with mere oil, must have extravagant perfumes. **They are not grieved for the affliction of Joseph.** So absorbed in their luxury and pleasure were these dissolute leaders of the nation that they were indifferent to the morally unsound condition of their nation.

III. The Inevitable Punishment, 7, 8.

V. 7. **Part of Amos'** work consisted in exposing his nation's sins and part also in announcing the doom which was sure to come upon them. God was about to undo all that he had done for Israel. He was going to cause them to be taken captive out of the land which he had once given them. **They shall go captive with the first.** The debauched leaders of the people whom Amos had been denouncing will be the foremost among the captives to go into the sorrows of exile. **And the banquet,** etc. In the day that Israel is carried into exile all its mad carousals will cease; it will be a time of sorrow rather than of revelry.

V. 8. **The Lord hath sworn by Himself.** (See Jer. 51: 14.) Elsewhere Amos says that God swears by His holiness (see ch. 4: 2). The meaning is that since God is a righteous God he can do nothing else but punish Israel. **I abhor the excellency of Jacob.** The excellency of Jacob would be the things in which Israel prided themselves: their rich palaces and strong cities. **I will deliver up the city.** This refers to the coming siege and capture which Amos foresees will be the outcome of the nation's wickedness. No specific mention is made by Amos of the nation which is to work God's punishment on Israel but there is little doubt that he had in mind the mighty Assyrian Empire.

Application.

1. **A faithful prophet**—what a contrast to Jonah. Amos was a shepherd from the south country, and his stern duty was to unmask the villainy and injustice prevailing in Northern Israel. The high priest, Amaziah, ordered Amos to leave the country, but the fearless prophet only reiterated his message of doom. In particular he denounced the rich grandees who crushed the poor, and lolled in luxury on beds of ivory. They were "at ease in Zion," and felt that no harm could befall the nation. Were not the mountains, and the Lord also, about the city of Samaria? It wounded the heart of Amos to proclaim his word of woe, but he was obedient to the heavenly vision.

2. **Prosperity blinds men to danger.** Israel was at the height of her prosperity when Amos burst into her religious worship at Bethel, with a cry of warning that God would no longer tolerate the wrongs that were being pepetrated in the land by the leaders and "notable men." Prosperity had hardened the hearts and blinded the eyes of the leaders. They could not believe that calamity would overtake them, for were they not "very religious?"

3. **The true foundations of national life—practical religion that includes not only the worship of God but brotherly treatment of all men.** The people of Israel had any amount of religious machinery, the external ceremonies of faith, but they lacked brotherhood, mercy and justice.

4. **A sin that sapped the life of the nation and destroyed the vision of the leaders and rulers in particular was drunkenness.** We know what ravages the liquor traffic made with many of our own British and Canadian men during the war. The effect of the drinking habit was to render the rulers of Israel callous about the condition of the people.