

HOME COURSE IN SCIENTIFIC AGRICULTURE

TWELFTH ARTICLE. FEEDING FARM ANI- MALS, NO. 2.

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In judging the value of a feeding standard for animals it should be borne in mind that feeding standards are simply a concise and approximate statement of the amounts of the different nutrients required by animals, as indicated by the results of experiments and observation. They are intended to apply to the average conditions. The local conditions will have much to do in determining how closely the feeder can afford to adhere to the standard.

The standard for a cow of 1,000 pounds weight and giving sixteen and one-half pints of milk per day and one-half pints of milk per quart of milk per day calls for two pounds of protein, eleven pounds of carbohydrates, and four-tenths pound of fat, which would furnish 25,850 calories of heat, but as the carbohydrates and fat serve practically the same purpose in nutrition an excess of one may make up for a slight deficiency of the other.

In making allowance for the difference in milk yield of different cows a uniform basal ration can be fed to all the cows and the amount of the richer grain mixture varied to suit the demands. For example, a basal ration might be made up of twenty-five pounds of corn silage, eight pounds of cornmeal and wheat bran, which would supply 1,433 pounds of protein and a fuel value of 23,712 calories. To this could be added a richer grain mixture composed of two parts of gluten meal and one part of cottonseed meal, the amount of this being varied according to the milk yield of the cow. Two

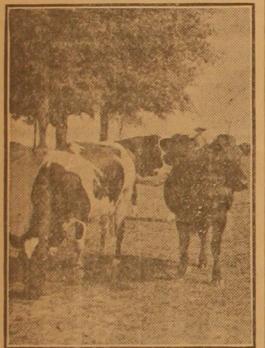


Photo by Hampton Institute.

IN THE PASTURE

pounds of this mixture would bring the ration up to 1.97 pounds of protein and 26,999 calories, which would meet the requirements of cows giving twelve to fifteen pounds of milk a day, while four pounds would bring it up to 2.50 pounds of protein and 30,256 calories of heat, suitable for the cows giving twenty to twenty-five pounds of milk, and so on, five or six pounds of the grain mixture being fed to the heavier milkers.

A ration composed of ten pounds of shelled corn, five pounds of wheat bran, two pounds of linseed meal (new process) and ten pounds of corn fodder per steer would furnish protein and energy corresponding approximately to the requirements of yearling steers. The exclusive feeding of shelled corn, as is often practiced in the middle west, gives a poorly balanced ration. Mixtures of other grains or by-products give better balanced rations, and such rations have usually been found more profitable. A common practice in fattening steers in the south is to feed fifteen to twenty-four pounds of cottonseed hulls and six to eight pounds of cottonseed meal. This is not a well balanced ration. It could be improved by substituting two pounds of cornmeal in place of an equal amount of cottonseed meal or by substituting silage for a part of the hulls.

As a result of experiments made for several years at the Massachusetts state station the following proportions of skim milk and cornmeal, according to the weight of the pig:

Pigs weighing 50 to 70 pounds, two ounces of cornmeal per quart of skim milk.

Pigs weighing 70 to 120 pounds, four ounces of cornmeal per quart of skim milk.

Pigs weighing 120 to 200 pounds, six ounces of cornmeal per quart of skim milk.

Pound for pound buttermilk has not usually given quite as good results as skim milk.

But another important consideration where fertilizers or manures have to be relied upon is the manurial value of a feeding stuff. Feeding stuffs differ widely in this respect, wheat bran and cottonseed meal having a high manurial value, while that of cornmeal is relatively low. If the manure is carefully preserved a large proportion of the fertilizing constituents of the feed

is recovered in the manure and goes to enrich the land. Hay from the leguminous crops—clover, lupines, alfalfa, cowpea, etc.—contains about twice the quantity of digestible protein that hay from the grasses does. The seeds of these plants (cowpea, soy bean, etc.) are exceedingly rich in protein and can take the place of expensive commercial feeds. By growing and feeding more leguminous crops the amount of grain required is diminished, the value of the manure is increased, and the soil is enriched in fertility.

The byproducts resulting from the manufacture of flour, glucose, starch, cottonseed oil, linseed oil, fermented liquors, etc., are extensively used for feeding purposes and include many of the richest and most prized feeding stuffs. Hominy chop, meal and feed result from the manufacture of hominy and contain the gum and coarser portions of the corn.

The establishment of beet sugar factories in this country has led to the production of immense quantities of sugar beet pulp as a waste material. Professor Thomas Shaw expresses his belief that sugar beet pulp can be fed more advantageously to cattle and sheep than are being fattened than to dairy cows. The New York Cornell experiment station, however, found that this material gave good results with milk cows. In practice about ten pounds of pulp per day are fed to sheep and fifty to seventy-five pounds to cattle. The amount in the latter case, however, is said to depend on the cow, and more may be given up to 100 pounds if they will eat it. The pulp is believed to effect a considerable saving in the amount of grain required for fattening.

Sugar beet pulp can be successfully preserved in silos and makes a very fair quality of silage. It is relished by cattle, even the slightly spoiled portions not being distasteful to them. As the sugar beet crop is an exhaustive one and the fertility of the soil can be maintained by feeding the pulp it becomes quite an important matter that farmers growing sugar beets should combine with it the feeding of the pulp where practicable.

Molasses is another product of the beet sugar manufacture which accumulates in large quantities. In Europe it has been found to possess considerable value for feeding. For this purpose it has been mixed with peat, dried blood, beet pulp or with a mixture of feeding stuffs, such as bran and palm oil meal, in order that it might be more conveniently handled.

The effect of drying hay is not to lessen its digestibility, as is often believed. Hay stored for a long time, even when kept dry and not allowed to heat, appears to lose a part of its value as food.

Experiments abroad have indicated that cooking or steaming coarse or unpalatable food was advantageous, not on account of making the food more nutritious, but in inducing the animals to eat larger quantities of it. In ten trials made by experiment stations there has not only been no gain from cooking, but there has been a positive loss.

The Mississippi station concludes from three years' work that "the milk and butter from cows fed on steamed cottonseed cost less than that from cows fed on raw cottonseed and but little more than one-half as much as that from cows fed on cottonseed meal. The butter from steamed cottonseed is superior in quality to that from either raw cottonseed or cottonseed meal." The Texas station finds it advantageous to boll cottonseed for steers.

Experiments show that it will pay to soak corn for steers if it can be done for 6 cents a bushel. Soaking wheat for pigs is quite generally recommended. The Maine station compared the value of chopped and unchopped hay for cows and found no evidence that the chopping had any effect. The Indiana station found that steers made better gains on cut than on uncut clover hay. Cutting corn stover was found advantageous at the Wisconsin station.

The use in this country of some kind of succulent feed nearly the whole year round, to keep up the appetite and the general condition of the animals, has become quite general. In Europe roots are largely grown for this purpose. In this country roots are not grown to any great extent in comparison with corn, which furnishes a larger and cheaper supply of food material from a given area than any other crop. Silage proves more acceptable to stock than dry fodder, and they will consume a larger amount of dry matter in that form. It is found adapted to nearly all kinds of farm animals, including horses, sheep and pigs.

Rolling means the feeding of farm animals more or less confined on green forage fresh from the fields. Partial rolling is much more common, being relied upon to carry the animals over a period when pastures are short. The Wisconsin station found that one acre of rolling crops was equal to about two and one-half acres of good blue grass pasture for feeding dairy cows, and the Connecticut station station kept four cows from June 1 to Nov. 1 on rolling crops produced on two and one-half acres of land. Partial rolling properly conducted will be found a profitable practice on many farms.

A considerable number of proprietary articles sold under trade names are found on the markets in this country. Analyses of samples of these feeding stuffs collected from time to time show that none of them can be regarded as concentrated feeds in the common acceptance of the term. The basis of the better ones is linseed or flaxseed meal or some cereal byproduct. They are usually sold at exorbitant prices, ranging from 10 to 20 cents a pound.

ERA MARKED BY GREEDINESS

Present Generation Demands Too Much of Everything, Is the Opinion of Woman Writer.

"It is the mark of our era to want more or everything than we can use, yet when we get the too much we demand, we are crushed by it, as Tarpeia was crushed by the shield," writes Cornelia A. P. Comber in the Atlantic.

"I have often thought that the sheer, brute mass of life—of people to know, of books to read, of plays to hear, of pictures to see, of things to do, buy, learn, enjoy—within reach of the well-to-do person in the modern world, far outruns the capacity of any human being to take it in and make of it the same whole that a life should be.

"Yes—yet we go crazily on, trying to expand to illimitable possibilities, thinking we shall be happier so soon as we have discarded all our present belongings and opportunities for bigger, newer, richer ones. How many people do you know who have not met a substantial increase of income with a corresponding enlargement of the whole scale of living, a senseless expansion sometimes outrunning their increased ability to provide for it? There is no future but chaos for a society with such ambitions. They are centrifugal and can only lead to disintegration."

THOUGHT NIGHT HAD PASSED

Tired Farm Hand Lost All Track of Time in His Brief but Evidently Deep Slumber.

Even when you are wide awake it is frequently hard to estimate the passage of time. On one occasion you find it hard to believe that several hours have elapsed, and on another the day may drag so slowly that the clock seems to have shirked its duty. While you are asleep the calculation of time is, of course, almost impossible, as this incident, told by a farmer's son at the corner store, one rainy morning, aptly illustrates:

Father hired a new hand last night—a big, good-natured Dutchman. Evidently the poor fellow was tired from tramping about the country, for he went to bed immediately after supper.

As usual, father went down to the cellar about 9:30 to throw some coal in the furnace and adjust the drafts for the night. Evidently this made enough noise to rouse the new hired man, for mother, who was sitting beside the table in the dining-room, saw the stair door suddenly open and disclose the broad form of the Dutchman. Blinking drowsily before the light, he exclaimed:

"Good morning, Missis! Good morning! I could chust as well haf come down von hour ago if you had only woke me up!"—Youth's Companion.

Practical Opposed to Ideal.

Among the legends connected with the great Cardinal Borromeo, the following is told to visitors to the huge palace of that ancient family on the Borromeo Islands in the Italian lakes. When Cardinal Borromeo had shown Cardinal Giulio the vast shade which he had just completed, the latter maintained a strict silence until they had inspected the whole. When departing, he said: "Your eminence, I have been reflecting that the huge sums spent on this place might have been given to the poor." Cardinal Borromeo replied: "Your eminence, they have been given to the poor. But our notions of charity differ. I pay the poor for their labor, and your eminence for their idleness."

Rural Solomon.

"The court has taken your case into consideration, Mr. Silthers," said the judge, at Silthers' trial for violating the motor ordinances at Crickett's Corners, "and, in view of what ye've said, and with some trowth, about the badness of our roads hereabouts in your sworn testimony, I've decided not to fine ye \$50, as the law permits."

"That's very square of you, Judge," said Silthers.

"We try to be square, Mr. Silthers," said the judge, "and, instead of the \$50 fine, we're goin' to sentence ye to work on them roads for ten days, in the hope that your superior wisdom as a road expert will make 'em considerably better."

Indeed, It Brought Results!

The bald-headed man burst violently into the barber shop and bustled up to the proprietor.

"See here, sir!" he said, "that hair restorer—"

"Why," interrupted the barber, "you bought that only two days ago—you can't expect—"

"No, no," the man broke in, "our green maid-of-all-work mistook it for furniture polish and—"

"Oh, you want another bottle?"

"Not by a jugful! I want you to come and shave our parlor set and four bedroom chairs."

Why Married Men Live Long.

The reason a married man lives longer than a single man is because the single man leads a selfish existence. A married man can double his pleasure. Any time he has a streak of good luck it tickles him all over, but it makes him feel twice as good when he tells his wife about it. And she is so pleased and proud that he feels like a two-year-old. There isn't a chance in the world of a man's arteries hardening or his heart weakening when he can get a million dollars' worth of pleasure out of making his wife happy.—Cincinnati Enquirer.

THREE GAMES OF BALL.

Home Team Wins Two and Loses One —All Fast Games.

Sunday, August 10th, the F. L. Smiths journeyed to Cabery and met the K. C. Defenders in the fifth game of the season. Flood brothers were the battery for the Smiths and J. F. Flood pitched a fine game, the Cabery boys getting only five hits from him.

Doekle Miller pitched for the Cabery boys and showed excellent form, fanning fourteen of the Smiths and allowing but five hits.

A base on balls to Jo Naas in the third inning, followed by a two-base hit by Brenela and a single by J. Miller, scored the only two runs made by Cabery. The Smiths scored their only in the sixth. Lannon started things with a nice two-base hit; Kern was safe on an error by J. Miller; Boyer singled, scoring Lannon and putting Kern on third, Boyer going to second on throw to J. Naas. Kern tried to score on a short passed ball and was out. Brown to Miller. Flood and Paderni both struck out.

Paderni singled in the seventh with two down; J. F. Flood struck out.

In the ninth Gutel singled with one down; Nielson lined one to Naas and J. Burns was out on fly to J. Naas. Following is score by innings:

	1	2	3	4	5	6	7	8	9	H.R.E.
F. L. Smiths	0	0	0	0	1	0	0	0	0	5 11
Cabery	0	0	0	0	0	0	0	0	0	5 21

F. L. Smiths vs Cabery.
At the West Side park, Friday, August 15th, the F. L. Smiths defeated the Cabery Defenders by a score of 2 to 1, in one of the best played games of the season.

Slim Walsh of Campus pitched for Cabery and was in fine form, allowing the Smiths but five hits. Mickelson was on the mound for the Smiths and pitched one of the best games of his career. Twelve of the Cabery boys retired and only four safe hits were made.

The Smiths scored their two runs in the sixth. Kern started things with a two base hit; Boyer was safe at first when J. Naas made a bad throw to first, Kern scoring and Boyer going to second. F. Flood scored Boyer with a three-base drive to center. Nielson and Burns struck out with Flood on third base.

The Cabery Defenders scored their only run in the ninth inning on a single by D. Miller and a two-base hit by W. Naas.

Following is the score:

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FRANK L. SMITHS.

	1	2	3	4	5	6	7	8	9	H.R.E.
Smiths	0	0	0	0	2	0	0	0	0	2 5 0
Cabery	0	0	0	0	0	0	0	0	1	1 5 1

CABERY.

	R.	H.	P.	O.	A.	E.
J. Naas, ss	0	0	1	0	0	1
Brenela, lf	0	0	3	0	0	0
D. Miller, 2b	1	1	1	2	0	0
J. Miller, 1b	0	1	5	0	0	0
N. Naas, 2b	0	1	4	0	0	0
Brown, c	0	1	8	2	0	0
C. Miller, cf	0	0	0	0	0	0
N. Adams, rf	0	0	2	0	0	0
Walsh, p	0	0	0	0	0	0

Two-base hits—Kern, W. Naas. Three-base hits, F. Flood. Bases on balls, off Mickelson, 2; Walsh, 2. Hit by pitcher, Brenela. Struck out, by Mickelson, 12; by Walsh, 6. Umpires, Dolan, of Joliet and Goodman of Dwight.

The F. L. Smiths had charge of the celebration on that day and it was a success in every way. Everyone was well pleased with the entertainment furnished and it was a success financially. A detailed statement of donations and money paid out for attractions and advertising will be found elsewhere in this issue.

F. L. Smiths vs Saunemin.

Sunday at West Side park the F. L. Smiths won an eleven inning battle from the Saunemin Stars by a score of 5 to 4. A good sized crowd of enthusiastic fans were out to see the game and many were kept at home by threatening weather.

The Stars started out as though they meant to put the game on ice by scoring two runs in the first inning. Cady hit a fly to right field that Burns misjudged and it went for a two-base hit. S. Lannon hit one for two-bases scoring Cady. Naas struck out Miller was out on fly to Burns. Hamilton singled to right, scoring Lannon. F. Flood got Hamilton at third retiring the side.

The Smiths went out in order in their half of the first inning.

The Stars threatened again in the second. Smith was safe on Paderni's bad throw to Boyer. J. Lannon walk-

ed. J. Flood threw Bennett out at first. Smith and Lannon both advancing. Watts was out on a high one to Paderni. Boyer got Cady's high one.

Gutel started things in second with a single. Flood followed with another safe one. Paderni advanced them but was out, Miller to Hamilton. Chief Bacon Rind who was playing centerfield for the Smiths, scored them with a single through Naas. J. Flood went to first when the 3rd strike went by J. Lannon. Nielson was out Miller to Hamilton.

Saunemin scored another in the third. Naas was hit by pitched ball. Miller singled, Naas going to third and scoring on an infield hit.

The Saunemin boys added one more in the fifth. S. Lannon walked, stole second and scored on a two-base hit by Donahue.

The home boys tied the score in the eighth. Nielson singled. Kern was out for bunting on the 3rd strike. Boyer walked. Gutel forced Nielson at second. Flood was safe on an error by Watts, Boyer and Gutel scoring. Paderni was out on a fly to Cady.

The Smiths won the game in the eleventh. Gutel struck out Flood singled and stole second, Paderni was out, Smith to Sennet. Flood scored from second on a bad throw by Doekle Miller.

Following is the score:

	1	2	3	4	5	6	7	8	9	10	11	H.R.E.
Smiths	0	2	0	0	0	0	2	0	0	1	5	5 2
Saunemin	2	0	1	0	0	0	0	0	0	0	4	3 4 3

FRANK L. SMITHS.

	R.	H.	P.	O.	A.	E.
Nielson, lf	0	1	11	0	0	0
Kern, 2b	0	0	2	1	0	0
Boyer, 1b	0	1	14	0	0	0
Gutel, 2b	0	2	1	2	0	0
F. Flood, c	0	2	2	2	0	0
Paderni, ss	0	0	4	1	0	0
Burns, rf	0	0	1	0	0	0
Bacon Rind, cf	0	1	0	0	0	0
Mickelson, cf	0	0	0	0	0	0
J. Flood, p	0	0	0	0	0	0

SAUNEMIN STARS.

	R.	H.	P.	O.	A.	E.
Cady, rf	1	1	2	0	0	0
S. Lannon, cf	2	2	1	0	0	0
Naas, ss	1	0	0	0	0	0
D. Miller, p	0	1	0	3	1	0
Donahue, lf	0	1	0	0	0	0
Hamilton, 2b	0	1	5	1	0	0
Smith, 1b	0	0	2	0	0	0
J. Lannon, c	0	0	14	2	0	0
Sennett, 2b	0	2	6	1	0	0
Watts, 3b	0	1	2	1	0	0

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