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AN ALFALFA SCIENCE FARM

STORY OF HOW ALFALFA IS MADE TO PAY AND ITS VALUE AS A CATTLE AND HOG FOOD TOLD BY AN EXPERT THAT ALL MAY LEARN

Continued from last week

The hog's digestive process comes nearer to that of man than does that of any other creature; it is easily upset, and to get satisfactory commercial results the delicate digestive machinery of the swine must be artfully, systematically and scientifically pandered to from infancy up. The whole agricultural world is practically agreed on the fact that skim milk and shorts are about the ideal food for pigs. It is also admitted, and cannot be disputed, that if any grains are cooked they are thereby put into a much more digestible form than when raw. Consequently in working out my hog ration, my aim has been to duplicate, and if possible, to improve upon, the heretofore ideal combination of skim milk and shorts.

A Cheap and Nourishing Food

Both chemical analysis and what the farmer would call hog scales analysis prove that the alfalfa tea ration is not only 50 per cent better than the shorts and skim milk combination, but that it costs less than half as much. More than this, it has another immense advantage. It can be produced in large and dependable quantities wherever alfalfa is raised. On the other hand, available skim milk is always limited to the dairy output, while the supply of shorts is always extremely limited; and the demand is so great that no farmer in Montana or an other place that I know of, can go to any mill in this country today and place a contract for five cars of shorts. Why? Because the big mills use their shorts as a bait for the sale of their flour.

Shorts are seldom sold at the mill for less than twenty dollars a ton, and it is not uncommon for them to go as high as twenty-six dollars.

The ordinary mill run of ground alfalfa contains too much coarse, woody fiber to be used in compounding this ration. Therefore I take the mill run and put it over a screen which takes out a certain proportion of the coarse fiber, all that would be injurious to the hog; the result is a meal that contains 17 per cent available protein and less than 15 per cent of fiber and is in a form that compares physically with shorts in practically every particular, having about the same specific gravity and the same general characteristics. By adding a small proportion of corn or barley meal to this alfalfa meal, and wetting the whole down liberally with alfalfa tea, an almost perfect hog ration is secured. The proportion of corn meal used is varied to suit conditions—but at most it is only a small proportion, about one to ten, and even this can be entirely supplanted and the same results obtained by using beet sugar molasses that costs \$8 a ton. This molasses is 64.5 per cent carbohydrates and the corn meal is 74 per cent. Of course the molasses is deficient in fat, but we make that up by adding a little flax meal.

The alfalfa tea takes the place of skim milk, and is highly laxative in its effect. It puts the sows in good condition to farrow and supplies them with an abundance of milk. All the sows on the Broadview Ranch are now fed on this mash of alfalfa tea and alfalfa meal for ten days previous to farrowing. This diet is continued for 2 months after farrowing. The little pigs will begin to eat it at ten days of age; and after they get a good

taste of it they will get right into the trough and fight for it with the sow. The mash is fed twice a day, and when the time comes to bring out his ration every sow and pig in the whole outfit is standing with its front feet up on the fence and squealing as if half starved. If hay or any other feed is given them they pay little attention to it. At the end of two months I take the sows off and leave the pigs, carrying on the diet—which is kept down as low as possible in its protein content—until the end of six months, at which time I increase the carbohydrates and give them almost a carbohydrate diet for two months longer, until we finish our hogs. Under this feeding, pigs 60 days old should weigh 60 pounds, and they will do it easily when all the conditions are right.

In fair weather, without any artificial regulation of conditions, pigs fed on this plan should weigh 60 pounds on 60 days, 150 pounds in six months, and 200 to 225 pounds at the end of eight months. The cost of producing pork on the Broadview Farm, under the feeding system I have described, is ordinarily two and a half cents a pound. Sometimes it is a small fraction of a cent more than this. It is safe to say that this system, conscientiously followed by any farmer in this section of Montana, will produce pork at a cost of three cents a pound.

Shoots Killed by Coarse Fiber

Before dismissing the subject of feeding alfalfa to hogs, it should be said that many hogs are lost every year by feeders in alfalfa sections because they do not understand the digestive machinery and processes of the hog. Let me illustrate this. When I was attending the dry farming congress I repeatedly received word from my superintendent that my shoots were dying off at an alarming rate. The messages said that the pigs were "tucked in the flank," that they dragged around a few days and then died. As they were running on alfalfa pasture, I surmised that they had managed to get hold of some digitals along the river bottom and had been poisoned by it. I wired back to shut the shoots up in a pen. The day I returned home three big husky shoots had just died and other were languishing. I told the boys, who thought cholera had struck the drove, that we had better hold an autopsy and perhaps we could learn something.

In every one of those shoots that had died we found a hard impaction of coarse alfalfa fiber at the upper end of the large intestine. I then made a mash, fortified with one drop of croton oil for each of the shoots and three drops for each of the sows. After that we did not lose any more hogs; but we knew better than to give our swine a chance to impact themselves again with coarse alfalfa fiber.

According to the observations of this specialist, alfalfa is the most abused animal food in the world in the matter of the wastefulness with which it is generally fed; and he insists that this abuse is so common, even among careful feeders, that it may be called universal without danger of slandering more than a few persons. He insists, also, that this waste in most cases begins with harvesting, where, under the common practice, alfalfa is cut so late in its development that a large proportion of the leaves drop off in the process of harvesting and that, under these conditions the straw and remainder of leaves adhering to it have not an actual food value to exceed \$2.50 per ton. Of course the more careful farmer does not lose so high a per centage of the foliage, because he does his cutting before the alfalfa has reached so advanced a stage of overmaturity; but in most cases he makes a considerable sacrifice because of delayed cutting.

Next comes the waste in feeding. This is greatest under the practice of scattering forkfuls of it over the feeding pen. Doctor Sudduth estimates that this wastes fully fifty per cent of the tonnage handled. Second to this in wastefulness is the method of stack feeding so commonly practiced in the west where the stock is allowed to run to the stack, pull out the alfalfa and trample it under foot. He estimates that this method never loses the farmer less than 25 per cent of his tonnage and in most cases the loss is nearer 50 per cent. This means, according to his figures, that open field feeding gives the farmer about \$1.99 a ton in actual food value for the most nourishing forage crop on earth.

That is not putting it too strong he declares; and that is the way most alfalfa is fed today. Even the more careful farmers who feed in racks suffer at least a loss of 25 per cent of the tonnage. There is an old saying that you can force a horse to eat shavings, but the horse will die. In rack feeding you can force your stock to eat a considerable portion of the straw instead of pulling it out and scattering it on the ground, but the forcing will result in a skinny bunch of stock. When chemical analyses demonstrated to me the amount of nutriment—the high percentage of digestible protein—in the stalks and stems of alfalfa, I realized as I had not before, the awful and criminal waste of this wonderful stock food going on all over the west. That, of course, directed my investigation toward getting the straw and stems of alfalfa into a balanced ration that stock would eat as eagerly as they do the alfalfa foliage, and that would render the waste of a pound to the ton unnecessary and inexcusable.

To be Continued

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