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Livestock and Dairy Problems

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CROPS FOR FEEDING DAIRY COWS

IN A cropping system for the feeding of dairy cows in the South, those crops which are best for the production of suitable roughage—silage and hay—should have first consideration. To what extent the Southern farmer should attempt to produce concentrates or grains for the feeding of dairy cattle will depend on many and varying local conditions, but there can be little question of the absolute necessity of producing the roughage fed to cattle on the farm where fed.

It will also be generally agreed that silage and legume hays should very largely make up the roughage for dairy cattle. A small amount of grass hay and such low-grade roughages as corn stover, straws, and unsalable hays may be used, but by far the greater part of the roughage for dairy cattle should be silage and good legume hays, and these should be produced on the farm. No dairyman can afford to buy hays and other roughage for dairy cows. Freight and handling charges are too great on such a bulky low-priced product, for when bought these add too much to the cost of the roughage.

Silage Crops

OF COURSE all Southern dairy cows will not get silage, but when kept in sufficient numbers, say 15 or more, silage will be found the best and cheapest roughage for dairy cattle, next to pasturage or green grass, and on high-priced lands, probably better than even pasturage. We fully appreciate the high cost of silos and machinery for filling them, but when the number of dairy cows is large enough, the minimum in some cases being as low as 8 or 10 and in others as high as 15 or 20, the silo will be found the most economical means of storing the best roughage for winter and dry weather feeding.

At present the cost of silage is greatly increased by growing corn on poor land, instead of sweet sorghum or some other crop that is more drought resistant than corn and that will do better on poor land than will corn. The use of sorghums instead of corn for silage making will reduce the silage cost, on the average lands of the South and an average year, 20 to 30 per cent. The tonnage of sorghum will be from 25 to 50 per cent higher than of corn, depending on how poor the land is and how dry the season. More tonnage of sorghum can be stored in a silo of any given size than of corn. The quality or feeding value of sorghum silage is not quite equal to that of corn, but nearly so when cottonseed meal is fed with the silage, and beyond doubt the feed produced on an acre will be greater with sorghum than with corn in almost every case and certainly on the average.

The sweet sorghums and, perhaps in the extreme West where the rainfall is less, the grain sorghums, should be used as the chief silage crops in the South. Corn should only be used on rich land and where the rainfall is abundant, and even then the sweet sorghums of the larger growing varieties will probably make more feed per acre at less cost per ton.

The cost of silage is now greatly increased by growing it too far from the silo and by failure to properly manage the labor in filling the silo. But silage is still the best roughage for feeding dairy cattle when there is not plenty of

green grazing, whether in winter or dry spells in summer.

There are many other silage crops but for the average man sweet sorghums meet the requirements best.

Legume Hays

NO DAIRYMAN can afford to buy and ship in legume hays, for the feeding of dairy cattle. If he does not produce all the legume hay required he had better do without. But he cannot afford to do without legume hay in feeding the dairy cow. Five pounds of legume hay will take the place of four pounds of wheat bran. It is putting himself at a disadvantage in his competition with Northern dairymen for the Southern dairyman to buy wheat bran, excellent feed though it be. He has to pay freight and handling charges on the wheat bran, which the Northern dairyman does not pay, and besides, the prices of the Southern dairyman's products are also fixed in Northern markets.

The Southern dairyman must produce at home, saving freight and commissions, some feed that he can substitute for wheat bran. This feed is legume hay. Good legume hay is an entirely satisfactory substitute for wheat bran. It can be produced on the farm for much less than it can be bought for and for much less than equal feeding value in wheat bran will cost. There are other substitutes for wheat bran but for the Southern dairyman we think the best is legume hay.

What legumes shall be used for producing the legume hay required?

In the Mississippi Valley, lespedeza will be found the most reliable crop, except in the lime land sections where alfalfa can be economically produced. In other sections, soy bean hay will be found most satisfactory, while in still others where the soil is rich and well supplied with lime or where it may be cheaply limed, red clover may be used. Even the cowpea may possibly be used for hay making in some cases, although the cowpea yields a low tonnage and is more difficult to cure than either soy beans or lespedeza.

Each section of the South, or rather each dairy farmer, must carefully try out and decide on which legume will give him the best returns as a hay crop. We do not believe there is any part of the South where such a legume cannot be found. Moreover, there is the other important reason why legume hay should be grown and fed on the farm—that soil fertility may be increased. These two reasons, that it may be used for feeding as a substitute for wheat bran and that it will increase soil fertility, are sufficient to justify quite extreme efforts to produce an ample supply of legume hay.

Where alfalfa does well, or even when alfalfa can be grown by adding two to four tons of ground limestone to the acre every four or five years, it will be found a most excellent crop for furnishing the hay required for dairy cows, but as a general rule the average man will find it more satisfactory to depend on some crop which naturally does well on his soils without too great expense for soil improvement. On lands deficient in lime the dairyman will, when he is able, find it profitable to apply ground limestone; but until his lands become fairly rich in other plant foods, it will generally be safer for him to depend on such other legumes as do well on his farm, for in the South both clover and alfalfa

require fairly rich lands. The important point is that he must find one or more legumes which will do well for him and then he must grow them.

When the legumes are grown on the farm the dairyman can afford to feed them both as an additional roughage and as a substitute for wheat bran; but he cannot afford to buy legume hays for either purpose.

How Much to Grow

SUFFICIENT silage should be produced for feeding nine months out of 12. Six months during the winter and three months if necessary during dry summer weather, when the pastures become dry and short. The amount will be 30 to 40 pounds a day per cow.

Sufficient legume hay should be produced to feed the milking cows the entire year five to 10 pounds per cow. In winter, as an additional roughage and all the year through as a substitute for wheat bran, or other protein concentrate, if any such is now purchased. It will require from four to five tons of silage and from two to three tons of legume hay per cow, per year. It will require one-half acre or more of silage and one to two acres of legumes per cow to produce this feed. If more silage is saved than is required it will keep and if more hay is made than is consumed it will sell. In this connection it may be stated that in certain surveys made of dairy farms in the United States it was found that the dairy farmers who sold hay made the most money. The reason would probably not be found in the money received but for the hay sold, but because such farmers made and fed all the hay required—their cows never suffered from a lack of hay—and they were never forced to buy hay, or concentrates for which hay could be substituted.

Concentrates

THE most difficult problem of the Southern dairyman in feeding his cows economically is to find some crop which he can produce economically and that he can afford to use to supply carbohydrates. Until this problem is solved he must depend on silage as the chief source of carbohydrates in his dairy ration. There is nothing to be gained in dodging the real facts. Today, the average Southern farmer cannot produce a concentrate or grain rich in carbohydrates—starch and sugar—at a sufficiently low cost to enable him to feed it to dairy cows in competition with the Northern dairyman who uses corn. He can produce silage and legume hays in competition with any other dairyman, if he puts the same knowledge and good management into their production. He can also supply his cows with protein, either in roughage or concentrates, on an equality with if not to his advantage over other dairymen.

It therefore simmers down to one of two propositions: He must either do without carbohydrate concentrates or he must produce them more economically. With the average dairyman and for average cows it will almost certainly be found more economical to depend on silage chiefly for carbohydrates, than to purchase them or to attempt to produce them in the form of concentrates or grains.

But this is not a condition which the Southern dairyman should be content to continue to labor under. He must make conditions such that he is able to produce and use sparingly and wisely the carbohydrate concentrates required for the most economical production. While the fact must not be lost sight of that dairy production will be found most economical where good pastures, soiling crops, silage and legume hays are the chief feeds, a limited amount of both protein and carbohydrate concentrates used wisely will of-

ten add to the economy of production, especially with the best cows.

Corn and the Grain Sorghums

THE great American carbohydrate feed is beyond doubt corn. In the Southwest, Oklahoma and Texas, the grain sorghums may properly take the place of corn, but in other parts of the South we know no substitute for corn. In the higher sections along the northern border of the cotton-growing areas and to the north of these barley might possibly partly take the place of corn and possibly in some cases oats or other grain might partly take the place of corn, but so far as we can see corn or grain sorghum is the best prospect for a concentrate rich in carbohydrates, that the Southern dairyman can hope to produce cheaply enough to supply his needs for a grain feed of this kind. It will always be necessary that human food grains be used sparingly in livestock production, but as previously stated, the Southern dairyman needs a small quantity of such feed, which he must produce on the farm or at least which must be produced near enough to his farm to avoid the high cost of added freight and handling charges.

At present corn is produced at the rate of from 15 to 25 bushels per acre in the Southern states. These yields must be raised to 30 to 50 bushels per acre, or doubled, before corn will be produced cheaply enough for the Southern dairyman to use it in any appreciable quantities to feed his dairy cows. Until he has improved his lands so they will produce such yields of corn he must, as we see it, depend on better pastures, sorghum silage, legume hays and cottonseed meal or other Southern protein concentrate to feed his dairy cows.

We are told that the rainfall is not sufficiently well distributed to make corn a sure crop. This is not really true except in the Southwest. It is true elsewhere in the present condition of our soils, but it is not true on those of our soils made fertile by the introduction of organic matter. It is true on those lands made fertile for cotton through the use of commercial fertilizers. That is, it is true on nearly all of our Southern soils in their present condition, but it will not be true when our soils are made rich by the introduction of organic matter, as can be proved by numberless examples.

The problem, then, is one of increasing the water-holding powers of our soils by the introduction of organic matter, which will also supply the needed increase in nitrogen, and the addition of acid phosphate where necessary. In brief, the cropping problems of the Southern dairyman for the feeding of his cows are the making of better pastures, the production of sorghum silage and legume hays, and improving his lands so that in due time he can produce corn cheaply enough to use a little of it for feeding his best cows.

Provide Silage for Summer Feeding

THERE are few pastures in America that do not suffer from dry weather sometime during the summer. Nearly every year at some time, usually during the fall, the pasture becomes so dry and short that additional roughage is necessary for the best results. For dairy cows, silage or soiling crops should always be ready to help out the pastures during these times. Silage may be always available for such an emergency if sufficient is provided. Such summer feeding of silage is just about as important as winter feeding. If one goes to the expense of building a silo and providing the machinery needed to fill it, he certainly cannot afford to neglect to have enough silage on hand to feed the cows when the pastures get dry and short in summer. Silage is as valuable at these times as during winter.