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**Saccharine
Feeds
And
Feeding**

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Saccharine Feeds and Feeding

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You may starve on a pound or thrive on an ounce,
And it shouldn't excite surprise,
For it isn't the food that you eat that counts,
But the food that you utilize.

And what is true of you is
true of your farm animals.

INTRODUCTION

Farmers, feeders and dairymen are going to school these days. From six to twenty-one, no longer forms the limits of "school age." The movement started in the State of Iowa a few years ago, to furnish short courses for farmers during the winter months, has become so popular that every winter, thousands of farmers, from twenty-five years of age up to the limit of natural life, are found at the State Universities of the western states, or at convenient branches, diligently attending and deeply interested in lectures and classes where practical methods of agriculture in all its branches and connections are taught.

The farmer used to be considered "fogyish," but today he is recognized not only as the producer of the wealth upon which all other wealth is based and must depend, but also as a progressive thinker and experimenter in scientific methods of breeding and feeding live stock, and producing the food products for himself and the rest of mankind.

He is a discriminating reader, open to

any argument that will bear the test of science and common sense combined. He believes in books, and he is such a persistent reader of farm journals that those periodicals are becoming more and more important factors in the educational, literary, and advertising interests of the country. Every successful farm paper must be in effect a continuous "correspondence course" in all branches of husbandry, and books on agricultural subjects must be fresh and up-to-date in order to meet the demands of the farmer reader.

We realize, in presenting this little volume, that it will meet the eyes of discriminating readers; but we present it with the full confidence that it will be of more than passing interest and we trust of lasting profit to the farmer-feeder.

It will not present any "newfangled," untried theories, but the results of tested methods of making feeds and feeding them.

We are not only making Sugarota Feeds in accordance with the most advanced scientific methods of mixing and balancing, but we are proving out the feeds upon the animals for which such is made, on our experimental farm. We are not depending on science alone nor on exper-

ience alone, but we are doing just what every agricultural college, and every advanced farmer, dairyman and feeder is doing—proving science by continued and progressive experiment.

The great and growing popularity of Saccharine (Molasses) feeds at this time seems to call for a common sense talk upon the subject, accompanied by a mild warning against accepting any sort of sweetened mixture as an effective feed, or crediting the extravagant claims of so-called “general purpose” feeds.

Sane methods of making and feeding Saccharine Feeds is the subject to which this book is devoted, and our best wish is that it may meet the approval of the conservative but progressive farmers, dairy-men, and feeders, and be “worth keeping.”

NORTH-WEST MILLS Co.

Balanced feeds and "balanced brains,"
Sunlight, air and proper pains,
Bring the feeder certain gains.

There is as much reason
as rhyme in that.

CHAPTER I.

Progress in Feeding Methods

Not so many years ago, it was deemed unnecessary to "prepare" feed for farm animals. Each farmer aimed to raise his own hay and grain and feed it whole, just as it came from the mow and the bin. Steers and hogs were fed for market on whole corn, almost exclusively. It was not even considered worth while to shell the corn, excepting in the far west where wood and coal were scarce and cobs were utilized for fuel.

It was common to hear feeders discuss the question as to the relative economy of feeding steers corn in the ear, shelled corn, or "crushed" corn. This crushing was done in a crude grinder that simply crushed the cobs and possibly broke a few of the grains, but left the corn practically whole.

Cooked Feeds

Then came the advance to cooking feeds, more especially for hogs; and the feed cooker was a largely advertised and widely used convenience. The cooker was a great advance from the

feeding of hard grains and indigestible cobs, that exhaust the muscular activities and derange the chemical processes of digestion. It was the first step in the use of "prepared" feed as far as feeding for fat is concerned.

The First Special Feeds

It has been recognized for generations that one must feed a milch cow somewhat differently than hogs, horses, sheep and beef cattle, in order to obtain the best results; so bran and middlings slops were given at milking time for the dual purpose of increasing the milk flow and inducing "bossy" to stand still and give down. The advance of dairying to a distinct branch of animal husbandry encouraged special feeding methods, and dairy-men were the first farmers to study the mixing and balancing of feeds and to depend upon purchasing their feeds. The advance of feed dealers' business owes its greatest impetus to the scientific methods of progressive dairymen.

Later, it began to dawn upon feeders that if specially mixed and balanced feeds would produce more profitable results in milk production, the same might be true in fat production. So the balanc-

ing of feeds with reference to digestibility and fat-producing elements began with advanced feeders for market.

The great fat stock shows of the past twenty years have given progressive feeders opportunities to observe the results of the different feeds and methods of feeding, as well as to study the adaptability of different breeds to various conditions of climate and environment.

The national dairy shows are of more recent origin, and provide similar opportunities for dairymen.

These great shows are real schools, "short courses" in animal husbandry, based on the experience of different breeders, feeders and dairymen; and they have had a powerful influence in promoting the scientific study of these subjects at State Universities and Agricultural Colleges, leading up finally to the establishment of college courses of several years for young farmers, and "short courses" for the older and actively engaged farmer.

Government Encouragement

In passing, it is impossible to ignore the help given to animal husbandry as well as general farming by our National Agricultural department. To look back

over our history, it seems strange, that while agriculture was ever considered by economists to be of first importance to the welfare of the nation, no special department was established by the government for its promotion, for almost a century.

The first Cabinet of a President consisted of Secretaries of State, War, Navy, Treasury, and Attorney General. That would indicate that it was considered the chief business of the nation to carry on war and regulate relations with foreign nations, to raise money to pay expenses, and to enforce the laws. Later, a slight realization of the importance of interior development dawned upon the government, and the postal service was elevated to the dignity of a department. Still later, the Department of Interior was added, including in its many bureaus an agricultural bureau. Finally, in 1885, ninety-six years after Washington's first inauguration, this agricultural bureau was advanced to a department, its chief being considered worthy to sit in council with the nation's ruler.

All From the West

The first Secretary of Agriculture, Norman J. Coleman, of Missouri, we believe

is still living. The second, "Jerry" Rusk, was from Wisconsin. The third, J. Sterling Morton, was from Nebraska. The present incumbent, James Wilson, is from Iowa.

Thus, the great agricultural region of the farther west and northwest, that has never been represented in the presidency, has been compensated by monopolizing a department which, wisely and efficiently administered, is of more importance to the nation and the world than is the presidency.

And this leads us to the connection between this bit of political history and the subject of animal industry. The Agricultural Department, from a seed-distributing bureau, has risen to a position that commands the respect of agriculturists and furnishes facts and methods that have increased enormously the production of food and bread-stuffs and the efficiency of feeds and feeding methods.

But it must not be forgotten that it was the pressure brought to bear by the farmers, feeders, and dairymen themselves that elevated the department and made possible its accomplishments.

The advanced methods of producing feeds have brought into existence great

mills, producing daily, in the aggregate, thousands of tons of manufactured feeds, the best of which are much more economical than the whole grain and hay feeds; and the farmer finds it profitable to sell a large proportion of his grain, and purchase the prepared and balanced feed for his particular purpose of dairying, or stock feeding, as the case may be.

In the course of the chapters that follow, we want to call attention to another important step in feeding methods which simply scientifically "balanced feeds" do not accomplish.

CHAPTER II.

Development of Saccharine Feeding

The old prophet foretold that the waste places of the earth should rejoice with fruit, but he did not mention that the waste products from industry would also be brought to serve the needs of men.

The beautiful dyes of every hue now used in manufacture of all sorts of fabrics are derived from what was once a black and worthless refuse—coal tar. Another former waste product is now used to purify the water supply of our great cities. Still other products that were once rejected have become most important elements of food for man and feed for farm animals.

Farmers past middle life can remember when wheat bran was not considered a staple product, but rather the waste part of the grain. And that was when more of the strictly nutritive elements were left in the bran than at present. But now, when bran is almost literally only the “overcoat” of the wheat, it is so much in demand as to make it a factor

in the market price of wheat and an important part of the dairyman's feed supply.

The latest by-product to assume importance as a feed element is molasses—the old despised and rejected “black strap” or “nigger heel” of the southern cane plantations. Molasses feeds under various names are produced in immense quantities now, and yet the supply scarcely keeps pace with the demand, so popular have such feeds become.

Facts Overlooked

In view of the recognized value of saccharine elements in animal nutrition today, it is astonishing that they were not utilized before; especially since such plain indications of their value were long ago apparent. We used to study about food values in our books on physiology and hygiene, and there it was recorded that sugar contained a remarkable amount of fat and flesh-producing nutriment. It was noted that “niggers and mules got powerful fat and sleek at sugar making time in the South.” And, although it was allowed that the eating of molasses caused this improvement in flesh and condition, no one for many years

seemed to move on to the conclusion that what was good for man and beast at sugar-making time would be good at all times and for all men and domestic animals.

We Had to Be Shown

Like many other good things, we were too busy with the main product and let the by-products go to waste until our attention was called to their value by people of other countries, where more rigid economy is required and everything available is utilized.

For some years, the beet sugar factories of Germany have been distributing the residue to dairies, in tank wagons, and the dairymen purchase it in small or large quantities, as they demand, and mix it with their feed, or what is more common with them, put it in the drinking water of the cows.

The frugal and far-seeing Scotchman has long known the value of molasses as stock feed, and it is reported that for many years the dairymen and stock owners of Scotland and the north of England have laid in a supply of molasses as a part of their stock feed. Here also it is common to mix it with the drinking water.

Cane molasses is a much more valuable feed product than the residue from beet sugar factories. In Louisiana the planters who formerly threw away the "black strap" now reserve enough to feed their mules and other animals from one sugar season to another. Large quantities of it are now purchased by the manufacturers of saccharine feeds, and the time will soon be here when this former waste will all be utilized and transformed into milk, by the dairyman, meat, by the feeder, or energy, by the horse and mule owner.

Saccharine Feeds the Latest

The history of the manufactured and balanced saccharine feed is a short one. The man who left the farm ten years ago and plunged into other lines, forgetting his former occupation, smiles with incredulity when he picks up a farm or feed journal and sees "Molasses Feeds" advertised and discussed.

The term "Molasses Feeds" is a little misleading, as applied to the best present-day manufactured article. It gives the impression that the article is in a more or less liquid or sticky state, which is not true. For this reason, we use the expression, "Saccharine Feeds," as better

describing the product. Saccharine means simply containing sugar or of the nature of sugar, and is, therefore, more descriptive. Our own Saccharine Feed we call "Sugarota," which is both descriptive and easy to remember.

We are not going to have much to say about the value of saccharine feeds as a general proposition; for the up-to-date farmer, dairyman and feeder already understand these facts. The overwhelming demand for such feeds prove this.

Warning to Feeders

But the very fact that this demand is so great has produced conditions in the manufacture of saccharine feeds of which feeders should be informed and of which they should make a note.

Demand will induce supply of some kind, and where the demand increases rapidly, the supply is very liable to be inferior to what it would be were the demand limited and steady, and manufacturers forced to sell strictly on superior merit.

This rapidly growing demand for saccharine feeds has induced scores of feed manufacturers to place such feeds on the market, under various names, and with

almost as various ingredients. Analyses of many of these feeds reveal the fact that they contain a large amount of indigestible matter that is not even legitimate or healthy roughage; in fact, much of it is absolutely injurious to the stock. Oat hulls, rice hulls, weed seeds, scourings and screenings from mills, and other matter of neutral or harmful character have been found in large proportions by the experimental departments of animal industry in the various states.

Weed Seeds in Manure

The presence of weed seeds in such feeds constitutes not only a worthless element as far as nutrition is concerned, but is sometimes the cause of irritation of the intestines and resulting disorders of digestion. Further, the manure from stock fed on such feeds is a cause of trouble to the farmer on whose land it is spread, being a fertile source of weed propagation and distribution.

Value of Protein

Many have reasoned, that because protein is found to be a very important element of all feeds, that the larger the proportion of protein the more efficient the

feed. But this theory is being discarded by advanced feeders and doubted generally.

Dried blood contains nearly 96 per cent of protein, but who could induce a farm animal to eat it, and who doubts that their stomachs would reject it even if they were compelled to swallow it?

The plain truth is that any element in a feed, no matter how important in a correct proportion, is worthless, or worse, when it exceeds that proportion. All feed is wasted that is not digested and assimilated.

Langworthy's report, Farmers' Bulletin No. 170, says that about 20 per cent of the nutrient value of feeds is wasted when fed in the ordinary haphazard way.

Remember this is only the waste in the *nutrient* elements which are not digested. Add to this the percentage of weed seeds and screenings found in the ordinary molasses feeds and there is an actual waste of 30 to 40 per cent of the money paid for feeds which are overbalanced in certain elements and mixed with mill offal.

We have met all these shortcomings and have eliminated them, by actually testing out our own feeds on the stock for which it is prepared. We have an experi-

mental farm within easy access of our mill, and there, after meeting the approximate chemical requirements, we test dairy feed on milch cows, cattle feed on fattening animals, horse feed on horses, and so on throughout our entire list of feeds.

Ninety-six Per Cent Efficiency

The result is that we have produced, in SUGAROTA feeds, a product of which 96 per cent of the nutrients are digested and assimilated instead of 80 per cent, as in the average feeds.

That alone represents a saving of 16 per cent or one-sixth of the price of your feed in actual money.

The elimination of all worthless offal and weed seeds accomplishes a further saving of from 10 to 20 per cent over common molasses feeds. The total saving in buying a pure, perfectly balanced Sugarota feed is not less than 30 per cent.

True, it costs more to make Sugarota feeds, because they are pure; and we do not place them in competition with common molasses feeds. They are in a class by themselves, and are guaranteed to produce better results, dollar for dollar, than

any other feeds on the market, by the feeder's test.

Breakfast Food and Stock Feed

The present state of saccharine feed production is very similar to the condition of breakfast food manufacture about ten years ago. The popularity of prepared and so-called predigested grain foods became so great that at least half a hundred concerns launched out in the business, many without experience or knowledge of the scientific or commercial basis upon which success in that line depends. The natural result was that from seventy-five to ninety per cent of these concerns retired from business when breakfast food fads were succeeded by a demand for breakfast food facts. The best of the cereal breakfast foods, those which stood the test of purity and nutritive quality, are still made and sold to an ever increasing demand.

Saccharine feeds for stock are passing through the same testing and sifting process today. Feeders are demanding to be "shown," that they may secure not only a good saccharine feed as a general proposition, but the *best* saccharine feed from every point of view. It is this required test that we are offering to the feeders.

Outside the strictly grain foods,
the most important are those
derived from cattle—milk, but-
ter, cheese, beef.

CHAPTER III.

Feeding Cows for Milk

We have said that the dairy feeders were the first to demand specially prepared feeds; but they, in the earlier days of the industry, simply used the slops and mixtures of wheat bran and middlings for their winter ration, and added to this, for succulence or green feed, turnips, pumpkins and other such vegetables as could be kept a reasonable length of time. In spring and summer the dependence was entirely upon grasses to furnish succulence to increase the flow of milk.

These earlier methods of special feeding were not as productive of results as the most approved methods of today, but

there are certain points to recognize in them that should not be overlooked by the modern dairyman. These we will point out in their proper connection. As dairying became more of a separate and systematic business, and fell under the regulations of law, science entered more and more into the feed question, and the "balanced" feed was evolved. Of course, a correctly balanced dairy feed is, theoretically at least, compounded with reference to producing the greatest quantity of milk, of the best quality possible, without impairing the constitution of the cow.

Chemistry is depended upon to show the proper elements for producing the desired result, and it is quite the fashion to prove the value of a certain feed on paper, by showing the proportions of protein, fats, and carbohydrates composing the nutrient elements of the feed. A feed especially rich in protein is generally considered as very valuable for all purposes, but there are conditions outside the mere elements of the feed that must be considered.

Proved Efficiency

Each Sugarota feed is tried out by actual feeding tests on our experimental farm, where science and experience have

combined to prove every theory and hold only to that which is best.

The analyses given on page 35 are as near to perfection as these actual tests have yet brought us; but we are continually learning, and should future tests indicate desirable changes in the percentages we should not hesitate to make them.

We have no pet theory to establish. What we are after is facts that will help us to make still better feeds if possible; and the fact that we have already produced feeds 96 per cent of whose nutrient elements are digested, shows how far we have outstripped the 80 per cent digestibility of the average feed.

Succulence, juiciness, relish, are required in order that the cow may appropriate the elements furnished in the feed. This is the chief value of the turnip and pumpkin ration, as well as the ensilage, now stored on every dairy farm.

This is also one of the first claims of saccharine feeds. The cows relish it. It supplies the sweetness and succulence furnished by the clover and other grasses in spring and summer.

The sugar itself is now recognized as a most important nutrient element, besides adding to the digestibility of the other elements with which it is fed.

Balanced and Pure

Sugarota Dairy Feed is not only balanced according to the scientific demands of nutrition and milk production but is free from all "filler" of a neutral or harmful nature. The makers of Sugarota are not in the general milling business, and have no waste product in the shape of screenings, scourings, weed seeds and grain hulls to dispose of in the form of sugar-coated feeds. Every ingredient is purchased with direct reference to its value as an element of a dairy feed and the ingredients are mixed in correct proportion and with unvarying uniformity.

No feed is all nutriment. There is always the element of moisture; besides a certain amount of indigestible fibre is required as a carrier for the nutrient elements. This moisture and carrier, or roughage, in a dairy feed should constitute from twenty to thirty per cent of the feed, by weight. In Sugarota Dairy Feed it is 27.5 per cent, the nutrient elements being: Protein, 18 per cent; fat, 4.5 per cent; carbohydrates, including the sugar, 50 per cent.

But the distinguishing value of Sugarota Dairy Feed is the fact that 96 per cent of the nutrient elements are diges-

tible. No other feed can claim so high an efficiency. The secret lies in the character and high quality of the ingredients from which the nutrient elements are derived and the perfect balancing to meet the requirements and the appetite of the dairy cow.

The reason for some molasses feeds falling short of requirements is that they are mixed for a so-called general-purpose feed.

Special Feeds Best

Experience has taught us what it has taught the practical farmer and feeder, that a fattening feed is not the best milk producer, and that a dairy feed is not the best fattening feed; and that neither is correctly balanced to meet the requirements of the work animal.

The consequence is, that a considerable per cent of the nutrient elements of the general-purpose feed is wasted when used for any special purpose.

A general-purpose cow may be a fair milker and a pretty good beef animal at the same time; but the dairyman wants a dairy cow, and the beef producer a beef cow, to get the best results.

In like manner, a general-purpose feed may do fairly well as a milk producer and

be an indifferent fattener; but the dairyman demands a dairy feed and the feeder a fattening feed. The horseman wants still another feed balanced with reference to producing bone, muscle and energy.

Sugarota Feeds are made to meet common-sense demands in these brands: Sugarota Dairy Feed, Sugarota Cattle Feed, Sugarota Horse Feed, Sugarota Swine Feed, Sugarota Sheep Feed, Sugarota Calf Meal and Sugarota Scratch Feed for fowls.

CHAPTER IV.

Feeding Horses for Strength

We have already reminded the reader of the fact (which he knew before) that a dairy feed, however good, is not the best horse feed. We make Sugarota Horse Feed specially for work horses and mules. We want to say frankly, right here, that no saccharine or molasses feed is suitable for driving horses or race horses, for the same reason that it is particularly adapted to farm and draft horses and mules. Saccharine feed is mildly purgative and regulative, just as the succulent grasses and green feeds of the pasture are in the summer; and any teamster or farmer knows that nothing keeps a work animal in better condition

and mettle than a certain amount of green feed.

Drivers and racing men know just as well that a horse that is driven at considerable speed regularly, cannot stand the green, purgative feeds. But as a mash, mixed with hot water, and fed once or twice a week, Sugarota Horse Feed will correct any digestive difficulties and keep the roadster and racer in fine mettle and sleek coat.

The saccharine element in Sugarota Horse Feed is the health-giving muscle-building substitute for the natural succulence of the fields, so essential to the regulation of the systems of farm and draft animals.

From the above common-sense considerations, we do not recommend Sugarota Horse Feed for driving and race animals, excepting as an occasional mash, and from the same considerations we recommend and guarantee its superiority over all other feeds as a regular ration for the work horse and mule, on farm and in city—any place where draft animals are used.

The "Sweet Tooth" of the Horse

It has been known for ages that the horse and nearly all other animals, in-

cluding humankind, have the proverbial "sweet tooth," but it is only since the amazing growth of sugar making during the last half century that even men could fully satisfy the craving.

Every boy who has "fed the elephant" in the shows, knows how he loves the sugar lump. Horses and cows, otherwise skittish and dangerous, can be persuaded to eat from any hand that carries sugar.

Years ago there was a celebrated "horse-tamer" in America, by the name of Rary. He seemed to possess the most remarkable influence over the wildest and most unruly of horses. That he used tact and kindness and all the arts known to the horseman, goes without saying; but at the end of his active career he confessed that his success depended in great measure upon the lump of sugar he carried in the palm of his hand at all times when dealing with the fiery beasts.

As has been noted in another chapter, the sugar planters of the South long ago discovered that their horses and mules and all animals having access to the molasses, became fat and sleek in sugar-making season. Taking the hint, they reserved enough "black strap" to keep their animals in condition and mettle for the intervening season.

Experiments

Some years ago the German army officials decided to make a test of saccharine feeds with cavalry horses. They put two battalions under forced marches for four days. The same roughage was used in both battalions, but the horses of the one were fed the grain ration then in regular use, while the others were fed a cake made of molasses and sawdust.

The result amazed them; for the horses fed on the saccharine ration came through fresher and in better condition than the ones fed on the regular grain ration.

Similar tests have since been made in the American army, with similar results. The American tests, however, were made by pouring molasses over hay, instead of sawdust. The results have been entirely satisfactory in comparison with the grain diet. The army in the Philippines also found molasses of great service as an appetizer that would induce horses and mules to eat the coarse roughage of the islands, which they otherwise refused to touch.

The Balanced Horse Feed

What is a properly balanced feed? That is a question that has not been answered with exactness. We are approach-

ing nearer perfection by experimentation and there is a general agreement that the three elements: protein, fat and carbohydrates, are of greatest importance; that protein should form from 10 per cent to 20 per cent of the feed by weight, fat 3 per cent to 6 per cent, and carbohydrates 50 per cent to 60 per cent. The balance of 20 per cent to 30 per cent is made up of moisture, ash and indigestible but necessary fiber or roughage.

The above figures are general and stated in round numbers, because different manufacturers vary proportions slightly, and feeds for different purposes necessarily differ in proportion.

Here are the proportions of the different Sugarota Feeds:

Guaranteed Analyses

Sugarota Dairy Feed

	Per cent.
Protein	18
Fat	4.5
Carbohydrates	50

Sugarota Horse Feed

	Per cent.
Protein	12
Fat	3.5
Carbohydrates	56

Sugarota Cattle Feed

	Per cent.
Protein	19
Fat	5
Carbohydrates	50

Sugarota Sheep Feed

Protein	17
Fat	45
Carbohydrates	50

Sugarota Calf Meal

	Per cent.
Protein	25
Fat	6
Carbohydrates	55

Sugarota Swine Feed

	Per cent.
Protein	18
Fat	4.5
Carbohydrates	55

Sugarota Chicken Feed

	Per cent.
Protein	12
Fat	3.5
Carbohydrates	50

The difference in chemical composition between these feeds is not very great, as expressed in figures; but experience has shown that these varying proportions are of the greatest importance to the different purposes. For instance, the marked excess of protein in the dairy feed, as com-

pared with the horse feed, is essential to milk production, and even the one per cent extra fat is as important in the feed as it is in the milk from the cow.

It will be noticed that sugar is not given in the analyses. It is included in the carbohydrates, which also includes the carbon, oxygen, hydrogen, starches and gums.

Aiding the Digestive Organs

It is well known that the digestive processes turn starches and gums into sugar, and herein lies one of the great virtues of the saccharine element: it is already partially prepared to be taken into the animal's system, because Nature in the cane stalk, and the manufacturer at the sugar mill, have already accomplished part of the work; the starch has been changed to sugar and the digestive organs relieved of the work.

Why not substitute saccharine elements for all starches and gums, and thus relieve the digestive organs of still more work? you may ask. Really, common-sense answers that question. Overwork is injurious, but not more so than underwork. The digestive organs must work to keep the animal in good condition. The

starch bearing grains furnish the feed that must be chewed, causing the saliva to flow and mix with the feed, and exciting the secretion of certain digestive juices of the stomach. Other elements excite still other activities absolutely essential to healthy growth and production.

But the saccharine element is quickly assimilated and converted into force, relieving the digestion of overwork and providing energy for the more complete and ready digestion of the other nutrient elements.

The value of the saccharine element of feed is no longer questioned by scientific investigators or progressive, practical feeders. But a serious question does arise concerning the waste and worthless elements used in some molasses feeds, and this question will be fully and fairly discussed in the chapter on "The Relation of Feeds and Fertilizers."

CHAPTER V.

Saccharine Cattle Feed

The idea once occupied the minds of practical men and scientists that fat in feeds produces fat in the animal, and therefore it was concluded that the feed containing the most fat or oil was best adapted for fattening cattle, hogs and sheep.

The oiliest of all grains is corn, and as it is also the most abundant grain, the old theory worked in nicely with the convenience of corn feeding, and the custom became so common that to this day fattened cattle are distinguished as corn-fed.

Indeed, the adherents to a strictly corn fattening feed are still very numerous. But those who have attended the great

fat stock shows are wavering in their blind allegiance to King Corn.

No Profit in Steers

A few years ago it was common to feed corn whole to feeding steers, either on the cob or in the whole shelled grain. Many still follow the practice. But by this system, the steer is a sort of mill and chemical laboratory combined, for preparing hog feed. For no feeder expects to put enough gain on a steer with whole corn to pay for the feed. Even when corn was much cheaper than at present, the feeder counted himself fortunate if his steers came out even, as he counted on the gain of the hogs following the steers in the lot as clear profit.

It was generally estimated that two average hogs would fatten from the droppings of one steer. When hog cholera struck such a feed lot, as it often did, the profits of the feeder were swept away and a loss sustained on the whole transaction.

Considering this crude method today, in the light of advanced methods, we can account for many things which then seemed strange.

The corn, a large part of which passed

through the steer undigested, was softened and soured and after a certain period of feeding, the bowels were deranged and a "set-back" followed. Often the cattle would actually lose in weight, although consuming full rations.

Crushing and grinding the corn was tried, but, while the cattle digested and assimilated more of the grain, much was still undigested, and in the case of the ground corn, what passed through the steer was not obtainable by the hog, and a loss accrued in that way which about offset the gain.

Linseed and cottonseed meal began to be used, and the start made towards a balanced feed. Today, all successful feeders depend upon some form of a balanced ration, but not all have recognized the value of the purely saccharine element, the most valuable of all, when rightly mixed with the right elements.

Here again, we were taught a trick by outsiders. At our fat stock shows and state fairs, a number of years ago, it was noticed that our Canadian neighbors carried off an undue proportion of the blue ribbons. They did it on condition of the fat cattle. There was a finish and fullness in every part and a gloss of coat that our

own cattle lacked. Investigation revealed that molasses was the secret. The Canadian feeders had learned the trick of passing their show cattle through the "set-back" period *without* the "set back," and putting on the finish and the "varnish" with saccharine feed.

The discovery of this fact, in connection with other sources of light on the subject, gave a boom to saccharine feeds that is still on and still growing. Some abuses of the good things have crept in, but an honest saccharine feed is increasing in demand rapidly.

We make a feed specially balanced for fattening cattle, just enough different from our dairy feed and our horse feed to turn the increase into fat instead of milk or muscle.

Sugarota Cattle Feed is guaranteed to be the best made, and the reason is that it is not a dairy feed, not a horse feed, not a general-purpose feed, but a fattening feed, balanced for that purpose. Besides, it is all feed; no filler, waste or irritating foreign ingredients.

CHAPTER VI.

Other Sugarota Special Feeds

Sugarota Swine Feed

This feed is adapted by test to the special demand of the growing and fattening pig. It differs from the cattle feed in the proportion of the component elements in just the degree that experiment proves necessary for the quickest growth and the best meat.

The old idea that hogs will thrive on anything has been long since discarded. Hogs require clean, pure food. Their ailments, mostly grouped under the name of hog cholera, are largely intestinal, and

a pure feed properly balanced will prevent these troubles and promote quick growth and maturity.

Sugarota fed hogs are remarkably free from intestinal diseases because of the purity of the feed, its perfect adaption to their needs, and the succulent sweetness that keeps the system in tone.

Sugarota Sheep Feed

Sheep are particular and discriminating in reference to feed, and nothing is so essential to their health and growth as the mild purgatives found in the grasses of the range. The dry feeds ordinarily used during the winter do not furnish these elements.

The clean saccharine element of Sugarota Sheep Feed provides the sweetness which the grass juices supply in the grazing months. It furnishes the ewes with the much desired quantity and quality of milk for nourishing early lambs.

It keeps both ewes and lambs in flourishing condition.

Sugarota Calf Meal

Calves when weaned are ordinarily checked in growth because their feed lacks the elements of the cow's milk which are required to keep them in growing condition.

In our calf meal these elements are furnished in proper proportions, and provide the relish and digestibility which give regulation to the bowels and insure growing conditions. It completely takes the place of the much more expensive milk, giving you the advantage of your dairy profits, and the healthy development of the calf at the same time.

Sugarota Chicken Feed

Good green food with the grain ration is what all poultry keepers demand for egg production and healthy growth of fowls.

The elements of the green foods secured on the summer range are contained in Sugarota Chicken Feed.

It contains no grit or oyster shell, for which you must pay feed prices.

It is pure feed, perfectly balanced and tested to meet the requirements of fowls.

For winter layers it is not equalled. For healthy hens are laying hens, and

Sugarota Chicken Feed keeps hens healthy, active and laying.

Young chicks take quickly to it, and being much more easily digested than hard grains, it promotes quick growth and early market birds.

CHAPTER VII.

Relation of Feeds to Fertilizers

No subject is of greater importance to American farmers, and therefore to all Americans, than fertilizing. And no fertilizer compares in importance, in quantity, or quality with barnyard manure.

It is also universally recognized that the manure from the feed lots of molasses fed stock is the most valuable of all barnyard fertilizers. And yet, on the back cover of a bulletin on molasses feeds issued by the Agricultural Experiment Station of an eastern state, is printed in bold type the following (the emphasis is ours) :

"Some molasses feeds have been found to contain large quantities of unground weed seeds.

"These seeds pass through the animal undigested, and are distributed over the fields with the manure.

"The farmer not only pays \$26 to \$28 for material (the weed seeds) having no feeding value, but he likewise is obliged to spend his money and energy in destroying the pests the following season.

“Question: Does it pay to buy weed seeds?”

That is a fair question with but one answer: it does *not* pay.

A close reading of this bulletin shows that a number of popular feeds were used in experiments, but which contained the weed seeds is not stated and it does not concern us nor the reader.

But *this does* concern both of us very directly:

SUGAROTA FEEDS ARE GUARANTEED TO BE FREE FROM WEED SEEDS, OAT HULLS, RICE HULLS, SCOURINGS OR MILL SCREENINGS.

Now, if, in spite of the worthless and injurious elements contained in “some molasses feeds” their use is still in great demand, and they are indispensable, what should be the attitude of the farmer, dairyman, feeder and feed dealer towards a saccharine feed that is guaranteed to be *absolutely free* from all these worthless and injurious elements?

We believe it should be and is an attitude of interest and co-operation. And we are extending that interest and co-operation to an actual test of the truth of the guarantee, by a free trial ton of

Sugarota Feed to every reader of this book who has stock to feed.

There are two reasons why Sugarota Feeds are pure.

First, and above all, the men whose money and reputation are behind the North-West Mills Company are devoted disciples of the square deal, and will not stand for anything that is not all it is represented to be.

Second, the North-West Mills Company is not in the general milling business, and has no screenings, hulls and weed seeds to dispose of.

Neither the motive nor the material is present with them to make an inferior feed.

They buy their material—all of it—on the open market and select the best to be had for the different feeds they produce.

The result is that Sugarota Feeds are not only the most digestible and nutritious of all saccharine feeds, but the fertilizer produced from the feeding of them is clean and of high quality, being worth \$5.20 per ton, on the basis of the rated efficiency of fertilizers.

Now, finally, we want you, reader, to make the test of the truth of every claim we have made for Sugarota Feeds, at our

expense, by filling out the order for a trial ton of any feed you want, on the blank accompanying this book. If you have mislaid the blank, you will find a duplicate on the last page of this book, which may be filled out and detached, or copied on a letter, as you prefer. Send in the order while you have it in mind.

Directions for Feeding Sugarota Feeds

The first week, mix one-third Sugarota Feed, by weight, with two-thirds of the regular grain feed. Make the customary allowance for hay, straw or other roughage.

The second week, follow the same rule, using one-half Sugarota and one-half the regular grain ration.

The third week, use Sugarota entirely in place of the grain ration, remembering always that the allowance is based on weight, not on measurement. Sugarota is highly concentrated, and to produce the best results must be fed as directed.

If you are already using a molasses feed, simply substitute Sugarota for the other feed.

Remember at all times that the feeding of Sugarota does not affect the allowance of hay or other roughage. Let that remain as before.

In making the test on the trial ton, follow above directions explicitly, simply using a Sugarota ration, whether one-third, one-half, or entire, the whole weight

of which is equal to the grain ration fed the animals with which you wish to compare results.

Of course, you will be influenced by the individual characteristics and capacity of animals, the same as you would in using any feed.

Date_____190_____

North-West Mills Co., Winona, Minn.

Gentlemen:—Please enter my order for one ton Sugarota_____Feed.

GUARANTEE

This order is given with the understanding that I am to make a test of Sugarota Feed according to your directions, for a period of 21 days, and if the feed does not prove satisfactory, according to your recommendation, I am to notify you, stating the conditions of trial and the amount of feed on hand, and you are then to return me the price of the entire ton with directions for disposal of the balance of feed on hand.

Name_____

R. F. D._____Town_____State_____

Fill in the first blank with "Dairy," "Horse," "Swine," "Sheep," "Calf Meal" or "Poultry," according to the feed you wish to test. It is important that you get the feed adapted to your special purpose.

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