Soils and Crops

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WHY DO WE FEED SPROUTED OATS?

Looking at the table of analysis, we find that oats contain more cellulose or vegetable fibre than any of the other domestic grains (with the possible exception of buckwheat, which is not at all suitable for the purpose), and can therefore furnish a larger "sprout" than any of them. They are richer in mineral matters than the other grains, and lower in price.

But why not feed oats in their natural state, and thus save the trouble of sprouting them? Because in their dry state they are not especially relished by poultry and not greedily eaten. By sprouting they become more palatable and are a very desirable special feed for the following reasons:

1. They are succulent. That is, if properly prepared, sprouted oats contain fresh juices, which are very palatable and much relished. They contain these juices in a readily absorbable form, along with the other substances which they hold in solution, such as salts, etc.

With human beings at least, the relish of a palatable food greatly increases its value, as that stimulates the appetite and causes a greater flow of the gastric juices.

2. They contain diastase (or amylase, as it is now called) to a large degree and in an active condition. Diastase is the most common and best-known of the plant enzymes or ferments, and is found in all sprouting and germinating seeds. Its purpose is to cause the conversion of the insoluble starch or similar substances present in all seeds into sugars or sugar-like products.

Starch in itself cannot be absorbed by the growing cell. Thus, while extremely useful in storing up the food needed by the sprouting seed, it must be converted into soluble, absorbable sugars to be of any use to the growing plant. This conversion is brought about by diastase, which is present in practically all seeds (it has been found in active form in seeds known to be over fifty years old).

An extremely small amount of diastase will be catalysis—its mere presence—act upon and render available for absorption, many, many times its own weight of starch. As oats, as well as many other seeds, contain more diastase than they need for their own use—that is, more than is necessary to convert all of the starch contained in them—the excess is available for the purpose of converting any other starch brought in contact with it. So that, when the sprouted oats meet the other starchy grains in the alimentary canal of the birds, the diastase of the oats immediately attacks the starch of the grains and helps to make it quickly absorbable.

3. They contain vitamines. This term was first applied to the substance or substances that must be present in the diet of animals in order that the animal organism may grow and reproduce itself. Their exact nature is as yet unknown, as they have been recognized and more thoroughly studied only for about the last twelve years. This much, however, is known about them: They are most abundant in those plants or parts of plants that are in a state of active, rapid growth, such as germs, spores, leaves and sprouts and other succulent growths. So that sprouted oats contain them in considerable amounts and thus make up for the lack of these necessary components in the usual dry grain rations fed to poultry.

THE WRECK OF THE MARY JANE

She was not a beautiful boat in any sense of the word, as viewed from the standpoint of a professional builder; but Billy Carter and Ned Dunham thought that she was as near perfection as it is possible to have a craft of her size.

She had been used for many years by the crew of the not very staunch nor fast-sailing fishing schooner, the Mary Jane, and that name was painted on the stern of the yawl.

When Captain Sproul hauled his long-used schooner on to the beach at Belfast, convinced that it would not be safe to attempt to make another voyage in her, Mary Jane the Second, as he called the small boat, was made fast alongside, and after having been exposed to the rays of the sun for the greater portion of one summer, Billy had purchased her at the low price of a dollar and twenty-five cents.

As the owner, Billy was, of course, captain, and he shipped Ned Dunham as mate in order that he might have some assistance in making repairs, for it was necessary to do very much patching before the hull would be sufficiently watertight to admit of her floating.

Neither the captain nor the mate were expert carpenters; but they contrived to do the work in a manner that was partially satisfactory to themselves, and on a certain Saturday morning Mary Jane the Second floated in rather a clumsy fashion at the head of the pier.

It was well-known among the friends of the captain and crew that they were to take a voyage of four miles—to Sampson's Ledge—on this particular day, and there were very many applicants for passage; but Billy, with a cautiousness well becoming a sea captain who fully realized al of his responsibilities, replied to each of his friends in the same words.

"You see, the Mary Jane isn't as strong as some other boats, and I'd rather not take any one with me but the mate till I find out whether she'll hold together or not."

As a matter of course there was no small amount of disappointment among those who believed they were entitled to a passage by the right of friendship; but they were all at the pier to see the voyage begun, with not an angry thought toward the skipper, for they recognized the necessity of giving the aged boat at least a fair show before putting her to any severe test.

Billy and Ned were provided with a generous luncheon, and, a rigging for the Mary Jane, had an old leg-of-mutton sail, a faded ensign, two boards and two tin cans to be used as bailing dishes. The mast was stepped, the tattered flag proudly hoisted, and Ned cast off the hawser in obedience to the captain's loud command, while those on the pier shouted themselves hoarse as the old craft, swinging lazily around into the wind, began to glide away with sufficient speed to leave a well-defined wake behind.

"She's just a humming, isn't she?" said Ned, in a tone of satisfaction, as the Mary Jane passed the town at the rate of about two miles an hour.

"The tide is helping her along some," replied the captain, modestly, as he held the tiller with a steady hand, and assumed what be believed to be a truly nautical position. "I s'pose it would have been safe enough if we had taken a lot of the boys with us; but I wanted to find out just how she'd sail before we get a crowd on board."

Then the skipper and his crew gave themselves up entirely to the pleasure of listening to the murmur of the water as it rippled against the bow of the gallant craft, and each felt that a great mistake had been made in not preparing for a long voyage.

For an hour they were quite satisfied that they could have gone to sea in the boat with perfect safety; but at the end of that time they were convinced that even four miles was too great a distance for so old a craft.

In the excitement of being afloat and gliding slowly away from friends and home, they had failed to notice that the water was making its way through the imperfectly calked seams, and it was not until their feet were wet that they realized what was surely uncomfortable, even though it might not be dangerous.

The mate set about bailing out, and for half an hour he worked in a leisurely fashion, thinking that the matter was not very serious, until Billy exclaimed in tones of alarm:

"It's coming in around the stern post as fast as you can bail it out, and it seems to me as if the leak keeps growing larger all the time."

Ned ceased his work for a few moments, and then it was that both the boys saw many places through which the water was beginning to trickle at a rate that threatened speedily to swamp the Mary Jane.

"Take in the sail and help me, or she'll sink!"

Captain Billy looked around him in alarm.

The Mary Jane was midway between the point of destination and that of departure; to gain the edge would require at least an hour of time; to return would take twice as long, since it would be necessary to make several tacks to reach the town, while to make the nearest shore was impossible owing to the fact that it would be attempting to sail in the very teeth of the wind!

"Take in the canvas!" shouted the mate, excitedly.

"Let it be!" shouted Billy. "I'll tie the tiller, and perhaps we can keep her afloat till we get to the ledge."

He was working even as he spoke, and as soon as the helm had been secured he began to help the mate, both bailing as rapidly as possible, for the water was pouring in so fast that their utmost exertions were necessary to keep it below the thwarts.

There was not a sail, nor even a rowboat, anywhere within ten miles, except at the dock from which the Mary Jane had started, and shipwreck on a pleasant day within sight of home seemed inevitable.

Sixty very long minutes passed, during which time the boys had worked as they had never done before, and at the end of that time the crazy old boat was so deep in the water that both expected each instant to have her sink beneath their weight.

"Take off your jacket and shoes," said Billy, at length, as he began to set the example. "She's going to sink, sure, and we've got to swim for it."

The ledge was not more than two hundred yards away; there was hardly a ripple on the water, and fortunately the boys were fairly good swimmers.

The captain had thrown off his sweater and was attempting to remove his shoes, when he bent too quickly toward the port side, and the old boat gave up the struggle. It seemed as if she had been suddenly pulled from under her crew, so rapidly did she sink, and Billy and Ned, each with his shoes on, were floundering in the bay.

Under ordinary circumstances they would not have thought it much of a feat to swim that distance; but, encumbered as they were with a portion of their clothing, it was all they could do to reach the ledge.

The Mary Jane had sunk in nine feet of water, but "the flag was still there," as could be seen when the boys were on the rocks, the tattered ensign showing sufficiently above the surface to mark the spot where the old craft had gone down.

The fact that they were shipwrecked mariners on a rock so far in mid-ocean that they were a mile from land did not trouble them at first, but soon all that was disagreeable in the situation began to be felt. As the hours went by they grew hungry, but their provisions were at the bottom of the bay. The sun shone uncomfortably hot, but they had no shelter. They had expected that a vessel or a boat would soon come along to take them off, but no craft of any kind hove in sight, and now the tide was rising rapidly.

At high water they knew the ledge would be covered to the depth of six inches or more, and the thought that they might be obliged to remain there all night, with the possibility of being washed away and drowned was decidedly disagreeable.

On the right or island side of the ledge the shore was hardly more than a mile away, but the point of land which projected toward the rocks was covered with trees, and no signs of life could be seen.

They alternately shouted, watched for a sail, bewailed their sad fate and wished for something to eat until sunset, when the tide was fully up, and they were obliged to stand as best they could on the rocks in six or eight inches of water.

During the whole of that long, terrible night they wandered from rock to rock, fully convinced that they should starve to death, and the rising of the sun brought them but little cheer, for, the tide having risen again, they were partially submerged.

It was not until the middle of the forenoon that they saw anything that even promised assistance, and then the glad sight of a farmer on the shore with an ox team caused both the shipwrecked ones to shout for joy.

The farmer answered them, but it was impossible to hear what he said, and they made every signal which could mean distress, until, to their great surprise, the man drove his team into the water, coming directly toward them.

"He must intend to some as far as he can, and then have us swim out to him," said Captain Billy, as he began to remove his clothing.

But such was hardly the farmer's intention. The tide had been ebbing for three hours, and to the unspeakable astonishment of Billy and Ned, the man drove directly toward them until he arrived at the ledge, the water in no one place from the point to the rocks being more than two feet deep.

It was with no little shame that they realized that they had remained all night on Sampson's Ledge, when they could easily have waded ashore and walked along the beach until they arrived home.

"What's the matter?" the farmer asked in surprise. "Why didn't you come ashore? Aren't hurt, are you?"

"No," said Captain Billy hesitatingly, "we're all right; but we wanted to see if you couldn't help us get our boat out. It's sunk, just there where the flag is sticking up."

"I can do it easy enough, if one of you will swim out and tie this rope to the painter. Then the cattle will soon yank it ashore."

To do this, now the boys understood that they were not, and never had been, in any danger, was but a slight task; and the Mary Jane was not only dragged ashore, but carried on the ox cart back to Belfast, where she may yet be seen on the beach by the side of Capt. Sproul's schooner, a perfect wreck.

She never made another cruise, and it is safe to say that her decaying timbers will serve for many a year to remind Billy and Ned never to give themselves up wholly to fear until after they have learned exactly the extent of the supposed danger that may menace them.

Dr. J. H. Jeans of the Royal Astronomical Society, London, comes forward with the startling idea that there is life on the planets adjoining the sun in the same proximity as the earth.

POULTRY.

If you have a carefully selected, well-bred flock it is time for you to be planning the best way to market the eggs which that flock will lay next spring. It is more than likely that you can secure a contract which will insure you a premium of ten cents or more a dozen over market egg prices during the hatching season.

In many sections of the country there are baby-chick hatcheries that depend upon farm flocks for their egg supply. These afford a splendid market through a fairly long season to farmers and others who have well-bred flocks.

The supply of suitable hatching eggs is quite inadequate, so that the owner of good stock will have little difficulty in arranging a satisfactory connection even though he may have to ship his eggs quite a distance to the hatchery.

Get in touch with the hatcheries near you and learn exactly how to meet their requirements. You will find them ready to meet you more than halfway if you can produce the thing they want.

When several flocks of hens are kept in one long house it is considered a wise practice to use wire-covered partitions between pens in order to provide for a maximum circulation of air during the summer months.

This frequently means too much draft in cold weather unless the front curtains are kept closed more of the time than is desirable. An excellent way to get around the latter difficulty is to cover the wire partitions with muslin or burlap when cold weather threatens.

Muslin is of course to be preferred, because it will make the pens lighter and will be somewhat easier to apply. Of course its cost will usually be somewhat greater than the cost of burlap.

Some flock owners have found it worth while to build removable frames which are covered with muslin and which can be taken down or put up quickly when required.

Tried to Play on Her Feelings.

"Why did you leave the room? Wouldn't your musical friend play on the piano for you?"

"No—tried to play on my feelings instead."

Miss Betty Howlett, the twelve-year-old mayoress, has just returned to school in Leicester after undergoing her civic duties in London, where her father is the mayor of Richmond. She is the youngest mayoress in England.

THE SUNDAY SCHOOL LESSON

JANUARY 11

The Last Judgment, Matt. 25: 31-46. Golden Text—Inasmuch as ye have done it unto one of the least of these my breathren, ye have done it unto me.—Matt. 25: 40.

ANALYSIS.

I. THE MESSIAH'S THRONE, 31-33.

II. THE FINAL SEPARATION OF THE RIGHTEOUS AND THE UNRIGHTEOUS, 34-46.

INTRODUCTION—Jesus, entering the Holy City as Messiah, cleanses the temple, and is taken to task by the authorities, and required to explain his commission or "authority." He does so, and in a series of discussions explains the true relation between the Jewish state and the kingdom of God, the nature of the life to come, and the supreme importance of love to God and man (Matt. 22). Then, in a great outburst of holy anger, he condemns the hypocrisy of the Pharisees, who have stood in the way of God's holy purpose for the nation (Matt. 23), and from this passes on to proclaim once again the doom which awaits the city at the approaching judgment, when as Messiah he will come in the glory of the Father (Matt. 24). Finally, in a series of parables, he reminds his disciples of the solemn issues of that judgment, and bids them "be ready, because the Son of man comes in an hour when they think not" (Matt. 25). To this chapter belongs the Parable of the Sheep and the Goats, which forms our lesson for to-day.

It is probable that Jesus often spoke of love to the poor and the needy as the characteristic mark of the genuine disciple. Men asked, "Whom will the Messiah recognize as his own, as his loved ones and friends, in the day when he sets up his kingdom?" And Jesus answers: "Those who have served humanity, who have given themselves to deeds of love and mercy."

Love to humanity is the mark of the Messiah's friends. Jesus will acknowledge such before the angels, and make them to sit down in his kingdom of salvation. In the present parable the same thought provides a picture of the universal judgment. All nations will be gathered before the throne of the Messiah, and blessedness or doom will be measured out according as men have or have not given themselves to loving deeds after the example of Jesus.

I. THE MESSIAH'S THRONE OF JUDGMENT, 31-33.

V. 31. The "Son of man" is the heavenly one, who, according to Daniel 7: 13f. is to come before God, and to receive an everlasting kingdom which shall not pass away. Jesus will so come in his "glory," that is, no longer in humiliation and suffering, as on earth, but in the radiant light of his eternal majesty, and with every mark of the divine favor. He will have the angels of God as his assessors round his throne.

V. 32. Then "all the nations" will be gathered before him. This means, not his disciples only, and not the Jews only, but the Gentiles from every land. All must at last receive their judgment from the Messiah. On earth they have all been divided in various ways, but before the Messiah's throne a higher and truer division will take place. All will be divided into *two* classes.

V. 33. The division between "sheep" and "goats," meaning respectively the elect and the reprobate, would be familiar to Jesus' hearers. What is *new* here is the principle on which the separation is made.

II. THE FINAL SEPARATION OF THE RIGHTEOUS AND THE UNRIGHTEOUS, 34-46.

V. 34. At the solemn hour of judgment, the friends of the Messiah, his true servants and associates, will stand on his right hand. They will be addressed as the "blessed" of Jesus' Father, because they have God's own approval: and the kingdom of God which they shall inherit has been prepared for them "from the foundation of the world." This means that everything that has happened from the beginning has been intended to secure for these faithful ones the bliss and enjoyment of God's eternal presence.

Vs. 35-36. And why are those on the right hand recognized as the elect? Because, Jesus says, "I was hungry and you gave me food, thirsty and you gave me drink, naked and you clothed me," etc. Loving deeds done to Jesus will be the test before the judgment-throne. Did any one appease the Messiah's hunger, slake his thirst, shelter him from the elements, take charge of him in sickness, visit him in prison? These are his friends, his loved ones, and his own. A very simple test, but how searching!

Vs. 37-39. Naturally these men, who have come out of every nation, and hardly one of whom ever saw Jesus' face to face, will be astonished beyond measure at this greeting, and will ask wonderingly "Lord, when did we see thee hungry, etc?" It was never their privilege on earth to see Jesus with the eye of flesh.

V. 40. Then Jesus will explain. The Messiah identifies himself with sinning and suffering humanity. The hungry, the thirsty, the naked, the sick, the condemned on earth are his representatives. On earth Jesus loved them, and gave himself for them, and now they are to be understood as standing in Jesus' stead, as the proper objects of Christian love and kindness. The Messiah makes their cause his own. His friends are the friends and lovers of mankind. This was a thought which had never crossed the minds of men until Jesus spoke.

Vs. 41-46. Then comes the dark side of the picture. Who are the enemies of the Messiah, those whom with sorrow he rejects from his presence and from his kingdom, and appoints to everlasting punishment with Satan and his associates? They are those who have not loved men, who have not been the friends of humanity. These will be set on the left hand of the Judge, because they did not show love to Christ. Expecting to find a place in the kingdom, they are overwhelmed to find themselves cast out, and to hear the Judge say that he was hungry, and they never gave him food. Yet so. They did not see that Jesus was one with suffering humanity, and so they threw away the chance of everlasting life. They meant perhaps to help the needy, but they forgot. Or they thought that the sufferings of others were no concern of theirs. Or they were simply taken up all the time with themselves. In any case, they did not do the thing which Jesus loves.

How solemn is this picture! "Inasmuch as ye did it not to one of the least of these brethren of mine, you did it not to Me." Little wonder that this parable has inspired more charity, more practical Christianity, than anything else in the literature of humanity.

UNCONSCIOUS VIRTUE.

The reward of a good deed is to have done it. Kind hearts perform unselfish deeds as a matter of course, as naturally and unconsciously as the birds sing. Jesus said of another class who did their alms in sight of men, and with unworthy and self-righteous motives, that the Publicans should enter the kingdom before them. The proof that anyone belongs to the kingdom, is found in the doing, under the intuitive urge of great-hearted compassion, the same sort of deeds that Jesus went about doing when on earth. He was ever helping, healing, comforting and uplifting both souls and bodies of men, and for ever seeing with the keen insight of loving eyes, capabilities, and possibilities that others failed to find. In the story before us, the righteous are amazed that the multitude of trifling services they had performed and straightway forgotten, should merit any glorious reward. Unconscious goodness is the highest form of goodness.

Top-Dressing Wheat With Straw.

For several years I have been producing more straw on my farm than I could work through my stables into manure; consequently, I have drawn out a large amount of straw during the winter and top-dressed wheat as a means of encouraging clover catches and to protect the wheat from adverse weather conditions during the winter and spring. I find this practice profitable and shall this coming winter top-dress a considerable area of wheat land.

I begin top-dressing wheat with the straw as soon as the land is frozen hard enough to hold the wagon. I have tried spreading the straw with the ordinary manure spreader, but I find that I can do it much faster with forks. As I always stack my straw it does not wet in bandly, and, if care is exercised not to uncover too much of the stack at once, very little trouble will be encountered with freezing.

I find it a good practice to throw the straw off in small piles on each side of the wagon, just enough to cover a space thirty feet wide. After the straw is unloaded I go along and spread it evenly and lightly upon the wheat. Here care should be exercised to spread the straw as lightly as possible. Too heavy spreading is likely to smother the wheat. Frozen bunches of straw should be broken up or thrown back upon the wagon and hauled to the barnyard.

I consider top-dressing with straw during the winter a great protection to the wheat crop. It helps to catch the snow and furnishes a covering for the wheat. It helps also to prevent freezing and thawing in the spring. It also furnishes a mulch for the wheat during the growing season and assists in securing good clover catches. —L. R.

HOGS

Prevention of Rickets in Swine.—Shall it be sunshine, cod liver oil, limestone, bone meal, rock phosphate or limestone plus sodium phosphate?

Investigations have shown that there is no difference in the effect of the type of calcium carrier when there was an abundant supply of antirachitic vitamine present in the feed. If a grain and skim milk ration is supplied to the growing pigs it is not all likely that the vitamine is not present in sufficient amount. Where no milk or green feed can be given, a small allowance of cod liver oil (2 ounces per week per pig) is sufficient to protect against rickets. Sunshine, well saved alfalfa leaves, skim milk, pulped roots, and grain are a combination in nutrition not easily disrupted by rickets.

The following mineral mixture is used in the swine feeding at the Ontario Agricultural College. It is giving good satisfaction: 4 bushels charcoal or hardwood ashes, 8 pounds salt, 2 quarts air slaked lime, 1 pound sulphur, 10 pounds of bone meal.

This preparation is kept in a suitable box in each pen where it may be taken by the swine at will.

It is profitable to keep hens comfortable. Keep the coop free from draft, still well ventilated and dry. The coldest coop is the tightly closed, ill-ventilated one.