

## Soils and Crops

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**Lost Motion in Farming.**  
As every farmer knows, "lost motion" is undesirable in farm machinery. The mower or binder which is loose in all its bearings will not do efficient work. The power applied to it is largely consumed in the operation of the machine, instead of being delivered where it is needed for efficient operation. This lost motion also greatly increases the wear and tear on the machine, until it becomes a discouraging task to try to use it and it is finally discarded.

There is a valuable lesson in the history of the old machine which has an application to the owner's business, and this means every farmer. There is a great deal of "lost motion" in the operation of the average farmer, and this "lost motion" is a great factor in possibly the greatest single factor in determining the profit resulting from the operation of the business.

Lost motion in the operation of a farm is of so many kinds that it is scarcely possible to classify it, much less to catalogue it. But with his attention directed to it, any farmer can discover plenty of it by an analysis of his own business in the light of easily remembered experiences.

A trip through any farming section at almost any time during the crop-growing season will reveal striking examples of this waste resulting from lost motion on every hand. One farmer will have gone to the labor and expense of preparing a field and planting a crop, but due to the use of poor seed, get a poor stand, thus limiting the possibility of a profitable crop at the outset.

Another will have planted more crops than he can properly care for and is unable to till them properly with much the same result. Others have failed to fit the seedbed properly, and still others have planted crops not adapted to the soil, or on land so poor in tilth or so poorly drained as to preclude the possibility of a profit from them.

These are typical examples of "lost motion" in farming which might be multiplied indefinitely. They are worthy of the careful thought and study of every farmer. Obviously it is an irreparable waste to expend time, the thing of which life is made up, in the improvement of lost motion if it can be avoided.

Unfortunately all the lost motion cannot be eliminated in even the most perfect running machine. But by comparison, the well adjusted, well oiled machine runs smoothly in comparison to the neglected and worn-out one. Nor can all the lost motion be eliminated in the conduct of a farm. There are some natural handicaps which cannot be foreseen or easily surmounted. But if all the lost motion possible is eliminated there will be much the same difference in the resulting efficiency—and the resulting profits—as there is in the efficiency of the two types of machines with which every farmer is familiar.

How can most of this lost motion be eliminated? First, by careful thought and planning in advance of the season's campaign and second by constant vigilance during the producing season. In many cases a smaller acreage of cultivated crops, planted on better prepared and fertilized soil, using better seed and giving better care throughout the growing season is a step in the right direction. This will in many cases make time available for the improvement of land for future cropping, as in the drainage of wet areas, the application of lime or marl where these soil amendments are needed, the growing of green manure crops to supply needed humus,

etc., all without actually reducing the current farm income and at the same time increasing the chance for future profits from the operation of the farm. Think it over! Plan now to cut out all the lost motion possible in farming operations.

### The Poultry House.

Most of us value a possession according to what it costs us in cold cash. When feeding poultry, for example, we try to make good use of expensive grains and meat food, that we may get the best results. It often happens, however, that things costing nothing which are necessary to the comfort and health of the fowls and greatly affect the profits, are neglected. Some of these are: the sun, the wind, the rain, the cold, the heat, the moisture, and the air. These are the things which the poultry house must be built to keep out or keep in, as the case may be. The windows are the right size and in the right position. We should remember that germs of disease are quickly destroyed in most cases, if the direct rays of the sun hit them and that these same rays warm and dry the building, externally and internally, and keep it not only cheerful but comfortable. It is, in fact, the only heating agent that we have which costs nothing, and most poultry keepers depend on it entirely for all the warmth the poultry house gets except that furnished by the fowls themselves.

A poultry house which is so situated that the sun does not strike its east, is not a proper place to keep the poultry in winter. Practically all poultry houses are without artificial heat and if the sun's rays cannot get in its work, there is no means of warming and drying these buildings and making them comfortable for the fowls. Hens do not perspire through the skin, but throw off all the impurities that go with perspiration through the mouth and nose with the exhaling breath. In this exhaled breath there is a great deal of moisture, and this moisture, congealed in the cold atmosphere and against the cold walls of the poultry house, forms frost on cold nights. This frost and dampness must be gotten rid of or it will accumulate to the extent that the house will be uncomfortable and unhealthy, the fowls will suffer and egg production will cease.

The sun offers the means of getting rid of this moisture and these impurities in the poultry house air. It warms the house so that the air takes up the moisture and dries the walls and the additional warmth makes it possible to open the windows in the south side of the building. The foul and moisture-laden air can then escape and fresh, pure, outdoor air takes its place so that when the house must be closed again at night in severe weather, there is a good store of fresh, vitalizing air for the fowls to breathe during the night.

The need of sufficient window space is readily seen, yet there is danger of getting too much, for glass (and we believe in glass in a poultry house) lets out heat as fast as it lets it in and a house which has too much glass warms up too much during a sunny day and cools down too rapidly at night. If the house has too little glass, the sun's rays cannot get in sufficient to be effective. A house which is of ordinary width (from 12 to 14 feet) will require about one full-sized, two-sash window, like those used in a dwelling house, for every 8 feet in length. Of course these windows must be made to open up and down, to provide the necessary ventilation.

large, placid eyes, and a pleasing carriage of the ears.  
In body conformation, depth and breadth are very essential, especially in the quarters for the development of the foal. Clean-cut limbs are an indication of quality, and quality nearly always indicates a good suckler. In short, the kind of brood mare that you want is the kind that a man with a natural love for animals likes best to handle.

There is a kind of brood mare that is anything but a joy to her owner. A review of her record usually involves a hard-luck story. She is nearly always a clumsy brute. That is the mildest term her owner could possibly use in referring to her. Her clumsiness continually works against her welfare and that of her foal. She jams herself against doors and corners, threatening the life of the foal before and after birth. More than likely she will step on her foal and break a limb, or in some way injure it. Her milk is poor in quality, or perhaps lacking in quantity. Often she is a poor feeder.

Care, of course, has much to do with the appearance of a brood mare; but, though she may be in everyday clothes, her manner or disposition will be the same. The brood mare that should be sought for her value as a producer differs from the stallion in having a lighter head, neck, and forequarters, but is more roomy in the barrel. When the opposite of these points are present, and the mare is what is termed coarse or rough, she is quite generally a poor producer of colts. If you keep these things in your mind when you go out to buy, you are not apt to go very far wrong.

## Poultry

As a boy I lived for some time near a Danish poultryman who was a constant source of wonder to all in the neighborhood. This old fellow had a way of making chicks grow until they were about twice the size of other chicks. People used to imagine that he had some mysterious secret by which he persuaded his chicks to grow so fast. They used to ask him again and again what he did.

"It's the way I feed them," was his invariable reply, "and the care they get."

The first trouble with the average farm chick is that we Canadians feed too much corn. We ought to know better. Corn isn't a growing feed and it isn't a hot-weather feed, especially for fowls. And the Dane used to say: "Oats make kids husky, but don't forget, it makes chicks husky!"

That was his gospel and he lived up to it. He fed no corn so long as he wanted the chicks to grow and thrive. When he wanted to "finish off" chicks for the market, then he used corn.

Of course, you can not feed whole oats to baby chicks; that is out of the question. But you can prepare the oats so that chicks of all ages can eat them. Oatmeal, if it can be procured cheap enough, is the very best thing that you can feed the growing stock. It can not be used entirely, there must be variety; but it can be made the bulk of the ration.

If oatmeal is prohibitive, follow the Dane's way and grind your oats, crush them if you prefer that term, and feed them soaked in milk to the little fellows, and in mash with wheat bran for the older stock.

"Give me oats and bran," the Dane used to say, "and you can have all the corn you want. In two months my chicks will be on the market, while yours will mostly be just getting started!"

**Trapping Baits That Work.**  
Successful trappers generally find that baits are a great help. However, one must understand when to use them, and the kind to employ. Too many of us neglect to learn the habits of the animals and rely upon attractors to get us fur. When we fail we are pretty sure the decoy is at fault. This is wrong, usually, although some of the so-called patent baits are not all that they should be. Success with decoys depends almost wholly upon our knowledge of animal life.

For convenience, we may classify baits as natural and artificial. In the former we have the foods.  
Skunks and civet cats may be drawn with almost any kind of bloody meat, use large chunks. Carcasses of rabbits and muskrats will do. Don't forget that flesh placed too near dwellings often lures dogs and cats instead of the animals intended. Furthermore, you will have difficulty with hawks, crows, and other birds unless you use brush or weeds to hide the meat.

Raccoons will eat almost anything. Comb honey, fish (fresh, smoked or canned) clams, and corn are used. The opossum can be caught with sardines. Use the kind put up in oil. Small, plucked birds are also good.  
Muskrat and rabbit flesh attract mink. Tiny pieces are best though many people imagine the attractor ought to be large. Fish, frogs, and the like can be depended upon at times to fool this animal.

The head of a rabbit is ideal for weasel. Bloody meat is also used quite extensively.  
When after muskrat do not forget that this animal exists entirely upon

vegetables. Corn, potatoes, apples, and parsnips are good. When snow covers the ground some green decoy is best. Parsley, celery, tops of carrots, and even a twig or two of evergreen will do.

Food, the natural bait, is not always effective. On the average farm there is usually an abundance of what the fur bearers eat. Furthermore, with competition keen among pelt hunters, something better must be sought. The bait that proves good at one time or place may not at another. Therefore, we must try to find out what will serve us best at each new set.

Strange as it may seem, the racoon exhibits great curiosity over anything bright, and the muskrat is attracted by white objects. By remembering this, we can often get pelts which otherwise might not be added to our collections.

I will treat the patent attractors very briefly. In fairness to all it must be said that most of the distributors try to put out good baits. Some of them, however, are not very effective.

Liquid scents do not, as a whole, give good results. You can prove that by pouring out a few drops, the same as you would on the line. After five or six hours the odor will have vanished. Suppose you made sets one day and expected to draw animals the next, just before dawn, when the fur bearers are most active. With the bait evaporated, or practically so, you cannot hope for any great success. Most of the failures from liquid bait may be attributed to this one fault.

There is yet another complaint to make against it. Water destroys the scent, and snow, sleet, and frost affect it. When trapping for mink, muskrat, racoon, and opossum many sets must be baited close to a stream, or lake. Should the water rise, the liquid scent will be destroyed.

The various paste baits have overcome the faults of the liquids. This decoy is very lasting. If we are compelled to keep away from traps for days—and this is often the case, especially with mink—we know that the paste can be depended upon to lure for a week. Should there be rain, snow, sleet, or frost, we may rest assured that this new type of attractor can be submerged, and when exposed to the air again it is apparently as strong as when squeezed from the tube.

There are two things about baits to bear constantly in mind. The most important, perhaps, is that no decoy ought to be employed where sets can be made without it. Remember, there are no magic mixtures which actually drag animals into traps.

New window-panes where those broken ones are will not cost very much in money or time, but they'll keep out a heap of cold.

Cold, dark and dank stables are conducive to tuberculosis. A few hours spent in cleaning windows and repairing broken panes will be well repaid.

A window pane is a lot better than an old hat to keep out the cold wind; nor is the cost of glass or setting it prohibitive.

Too many girls can play "The End of a Perfect Day" on a talking machine, but can't get up in time the next morning to help get breakfast.

Generally speaking, the season has not been one of uninterrupted prosperity for the fruit-grower, but it has certainly emphasized the need of co-operation.

## The Welfare of the Home

### How I Made Life More Livable on the Farm.

There was a time when our daily round of duties meant the carrying of from 25 to 30 gallons of water. In winter-time it meant carrying coal for three or four fires, some of them upstairs; cleaning and filling a number of lamps and lanterns; skimming and washing of many crocks of milk, and churning by hand.

It meant cleaning the linoleum on the kitchen floor by getting down on the knees, turning the washing machine by hand, sweeping and raising germ-laden dust with a broom.  
In spring and summer it meant caring for many sitting hens, and then mothering little chicks in old boxes that let them get wet when it rained. Work was slow on bake day because of a cold kitchen.

After years of work and planning, the old kitchen was replaced with a new one. One at a time, as could be afforded, improvements have been added to lighten the daily duties above mentioned. Now the daily routine of work is quite different.  
A pressure water system solves the water question. It supplies filtered rain water, hot and cold, at the kitchen sink and at a wash bowl in the kitchen for toilet purposes, also for the bath room.

A hot-water system heats the house all through, and eliminates the carrying of coal. A radiator in the kitchen, with a shelf on it, makes a warm place for the bread to rise. The yeast is kept warm overnight in a home-made fireless cooker.

A cream separator skims the milk and the churn is run by power.

The chicks are hatched in an incubator in the cellar, and raised under coal brooders, with success, in a house that keeps them dry.

An electric-light plant ends the

daily cleaning of lamps and lanterns, and makes power besides.

There are electric lights throughout the house from cellar to attic, in the barn, and in all outbuildings where needed.

An electric washing machine and wringer does the work of the old hand power. Water and drains are also in the washroom.

A receptacle in the kitchen provides a connection for the electric iron.

An electric cleaner attached to any light socket in the house cleans without dust. Attachments come with it for blowing dust from radiators and bed springs, cleaning draperies and upholstered furniture. A mop and bucket with wringer quickly cleans the kitchen linoleum.

A wheel tray saves many steps, carrying a whole meal or bringing all the soiled dishes from the meal to the kitchen with one trip. The soiled dishes are all scraped and arranged on the tray ready to wash as they are removed from the table.

Our steam-pressure canner is one of our much-liked conveniences. It does the work in about one-third to one-half the time of any other method, saving fuel and much time in a hot kitchen keeping up a fire.

The oil stove for summer often can be used to cook the evening meal, and is often used at the same time as the range when there is a lot of cooking to be done.

These improvements and conveniences tend to make farm life more livable and enjoyable. They make farm life more interesting and attractive for the young folks and after they settle somewhere for themselves, Father and Mother need these helps more than ever.

## The Growing Child—Article I.

### Physical Defects Among School Children.

Time and again careful investigations by competent medical authorities have shown that children lose a considerable part of the educational advantages open to them because they suffer from uncorrected physical defects such as decayed teeth, enlarged tonsils and adenoids, malnutrition, defects of vision and the like. But great as is this loss of education, it is not nearly so serious to the child as is the after-effect of such uncorrected physical defects on the child's physical development. Many parents do not realize that neglect of the teeth may lead to incurable heart disease or crippling rheumatism, that adenoids may result not only in chronic nasal catarrh, but in a permanent disfigurement of the face, or that failure to correct malnutrition may stunt the child's growth and make his body more susceptible to disease.

Perhaps you may think that all this is of little interest to you. Your child, you believe, is well and strong. You cannot be sure of this until a doctor's examination proves it to be a fact.

**Neglected Teeth Cause Serious Illness.**  
Dare largely to the revelations of the X-ray, supplemented by careful examination by physicians and bacteriologists, we know that neglect of the teeth and mouth are responsible for a number of serious infectious diseases, whose origin until recently was very obscure. The more important of these conditions are diseases of the heart and arteries, infections of the blood and infectious diseases of the joints.

All modern up-to-date dentists now make use of X-ray pictures whenever they suspect any trouble with the roots of the teeth. Not only the dentist, but the physician as well, has been astonished at what these pictures have revealed to him.

Often they show that pus is present about the neck of the tooth, and that there are pockets extending down toward the roots which hold large quantities of putrid material. The discharge of poison and germs from these hidden abscesses at the roots of the teeth and the consequent absorption from these and other local sources of infection such as diseased tonsils are often the real cause of some obscure ill-defined ailment which, perhaps, has baffled the attending physician for some time.

Certainly not all rheumatic or systemic diseases are due to pus around the necks of the teeth, or from concealed abscesses at their roots, nor yet to infections of the tonsils. Yet it is strongly suspected that such mouth infections may often be the cause, or at least a contributing cause, of many diseases, such as tonsillitis, rheumatism, St. Vitus's dance, certain forms of heart and kidney diseases and obscure stomach ailments.

### Tartar Deposits.

One of the commonest results of neglect of teeth is an accumulation of tartar. The first sign of tartar is a slight roughness, felt usually on the inside of the lower front teeth. This is caused by deposits from the saliva of a hard chalky substance. The unclean condition of the mouth resulting from tartar deposits is a common cause of "bad breath."

### Pyorrhea.

The deposits of tartar where the teeth join the gums is a frequent cause, though not the only cause, of Riggs' disease, or pyorrhea. The gums become irritated and infected by disease-producing germs, the tissues are broken down and pus forms. Unless the pyorrhea sufferer is prompt in putting his case in the hands of a dentist the infection continued, rapidly dissolving the soft bone surrounding the teeth and destroying the attachment of the soft tissues of the gum to the teeth. In severe cases

the teeth become loose and eventually are lost.

### Hints on Preserving Good Teeth.

From what has been said in a previous article, you will realize how important it is to look after your children's teeth, train them to care for them properly, and have a dentist examine them from time to time to make sure no defect is overlooked.

Have you ever stopped to think how great an influence diet has on the development of the teeth? The importance of a proper diet is much greater than most people realize.

When baby comes into the world it is apparently toothless. Nevertheless at this time the first teeth are practically completely formed, lying beneath the gums. In fact, under these first teeth there are already the beginnings of the permanent teeth. Under these circumstances, you will understand that these teeth cannot develop as they should if the body is not supplied with a sufficient amount of the necessary building material. Hence in the food of your child you should make sure that especially those elements which build bony structure, of which the tooth is a type, are supplied in sufficient quantities. This fact recognized, you will agree that proper care of the child's teeth really begins in earliest infancy, even before any teeth have appeared, and should be directed especially to the infant's feeding.

Nursing at the breast is by all odds the best way to start the proper development of the child's teeth. The two most important elements needed in the diet for building sound teeth are lime and phosphoric acid, and for the growing child there is not a better source of these than milk; mother's milk in infancy and clean cow's milk later. After infancy the diet of every child should include a glass of milk with each meal, and in addition to this there should be other sources of mineral salts, such as fruits, green vegetables and pure water.

But there is another important thing to remember about the relation of food to good teeth, and that is the influence of exercise. Just as regular use of the muscles makes the muscles large, firm and strong, so regular use of the teeth for chewing helps to make stronger and better teeth. The food should therefore be presented in such a form that it will require chewing. For this reason the diet should include a certain amount of coarse material designed especially to exercise the teeth. Coarse whole-grain breads, hard tack, baked potatoes eaten with their jackets, fresh apples—these and similar articles included in the food will help to make good teeth.

Decay of the teeth, also spoken of as "dental caries," is caused by the action of germs or bacteria which lodge upon the less exposed parts of the tooth. As a result of their growth the tooth structure is softened, allowing the succeeding generations of bacteria to penetrate further into the substance of the tooth.

Much can be done to prevent this decay of the teeth, and this accumulation of germs, by brushing and cleaning the teeth regularly. Each child should be taught the proper use of the tooth brush, and the mother should train her child to brush the teeth regularly after each meal. At the present time the proper use of the tooth brush is taught in many schools by means of the "tooth drill," but this will help but little if the mother does not make sure that this teaching is actually applied in the home.

Does your child brush his teeth regularly? Do you see that a good tooth brush and some pleasant tooth paste or other dentifrice is at hand? Do you ever look at your child's teeth? These are some of your responsibilities.

## PAYING THE PRICE

The lesson was at an end, and the doctor looked over his class and wondered how much impression he had made. The boys were just verging on manhood; some of them were in the senior class of high school, some were already out in the world of business. The lesson had been about the miracles that the apostles had performed.

When the doctor had finished explaining the passage one boy looked up inquiringly.

"Dr. Jamieson," he asked, "do you think anyone could perform miracles now?"

"Unquestionably," replied the doctor.

"Then why don't they do it?" a dozen voices asked.

"You all know something about physics," said Dr. Jamieson slowly. "You know that you can convey a powerful electric current hundreds of miles from its source and set it at work virtually without loss."

The boys nodded.

"Now, there are two things to bear in mind: the power that the dynamo generates and the cable that transmits the power. Let us assume that the dynamo has produced the necessary energy; what is required of the cable?"

"Why, it must be connected with the dynamo," said one of the boys.

"Yes; but there is something else."

One of the boys said: "The cable must be insulated."

"Exactly! And the more nearly perfect the insulation the greater will be the energy that is transmitted. Now, spiritual power comes from God and is to be applied in some way—to healing the sick or to lifting the sinner fallen by the wayside. We are the cables. The first thing is to make the connection; the next thing is to insulate the cables. That is what the apostles did. Most of us lose spiritual power all along the line; we keep company with people who are worldly and unbelieving; we have sordid ambitions and frivolous pleasures. Thus when it comes to applying God's power conveyed through us—his faulty feed wires—there is no power to apply."

"Do you mean, sir, that we must have no pleasures?"

"Not at all. Christ made social visits. He traveled. He worked at His trade as a carpenter. But through it all He had one central purpose—to bring more abundant life to men. The apostles followed the example of their Master; none of them ever lost sight of the one aim that they had in life. If you want to be a spiritual power, you must pay the price; you must learn what the vital things in life are and concentrate on them. Are we willing to pay the price? The apostles were willing, and we know what they accomplished."

Mr. Whiting found that if he kept the tank full, by pumping in a fresh supply each day, it prevented a mass of ice from forming. The reason for this was, of course, that the heat from the fresh water kept the temperature up.

To protect the down pipes, the following method was used: A one-fourth-inch coating of paraffin was given the two-inch feed pipe. Over this a four-inch pipe was placed, leaving an air space between the two. Another one-fourth-inch paraffin coating was given the four-inch pipe. Then a one and one-fourth-inch packing of felt was wrapped around, and on top of this three-fourths inches of heavy paper. A covering of tar paper was put on for protection from moisture.

With temperatures of 20 degrees below zero last winter the pipe did not freeze. Recently Mr. Whiting covered the packing with a wood chute, to keep out rain and snow.

Neither paraffin nor asphalt coatings seemed to stop the leaking. In 1915 the experiment station sent a man to repair the tank in an effort to overcome the difficulty. The old material was carefully cleaned away, and the tank dried. A priming coat of a commercial asphalt, thinned with gasoline, was applied. Next, the entire tank was given a coating of asphalt one-fourth-inch thick, with an extra amount where there were slight cracks. The asphalt was then covered with a plaster coat, consisting of one and one-half parts cement and one part sand. Finally a wash of pure cement and water was brushed on to fill up the pores.

"The tank hasn't leaked a drop in over two years," said Mr. Whiting, "and we used it every day last winter."

There are always a few tried and tested recipes that one would like to have conveniently at hand. Get a few stout cards and punch eyelet-holes in one corner. On these cards write the recipes and then fasten the lot on a key-ring. The card recipe book thus made can be hung on a nail in the kitchen, and an old card can be slipped off the key-ring or a new one inserted, as desired.

## Horse Sense

Often the question comes up whether a true brood mare can be distinguished from a counterfeit and, incidentally, what is a fair price to place on a brood mare that promises to be or is a valuable producer. This question every man must answer for himself. About all that can be said is that a good producing mare, like other good farm animals, as a rule, is worth all that her owner asks. It is a weakness with most breeders that they can be blinded to the merits of the best individuals by a fairly good offer.

It would be comparatively easy to determine the value of a brood mare if her offspring could be seen, but this is rarely possible. In buying a mare for breeding purposes the buyer must rely on his own judgment; hence, the better a judge he is the better he is likely to fare in the bargain.

Men who have given careful study to brood-mare type are generally agreed that certain characteristics are common to most profitable brood mares. Of first consideration is character. Character is a term that covers all qualities peculiar to an animal. It is the combined effect of general appearance and disposition.

Femininity is most important in a brood mare. It is not easy to describe, but is indicated by the setting of the ears, expression of eyes, shape of head and face, fineness of nostrils, lips, neck, and shoulders. The critical judge of brood-mare type, no matter what the breed, looks first for a kindly disposition, then clean-cut features,

## Plant Windbreaks as Crop Protectors.

Mr. Norman Ross, Chief of the Tree Planting Division, Dominion Forestry Branch, at Indian Head, Sask., in speaking of the effectiveness of trees as windbreaks on field crops, at the conference on Soil Fertility and Soil Fertility at Winnipeg, under the auspices of the Commission of Conservation, gave illustrations of the results actually obtained. Of special importance was that secured at the new nursery near Saskatoon, which Mr. Ross described, where the main outside shelter belts had not yet reached more than six to eight feet in height. The nursery is divided into one-acre plots, each about 25 yards wide, with car-

gana hedges about 2½ feet high dividing the lots. Of these plots 35 were sown to oats, after summer-fallow. Almost adjoining and on exactly the same class of soil and similarly cultivated, a ten-acre field was sown, also fifteen acres on stubble either spring or fall ploughed. The ten-acre summer-fallow field was completely blown out, while the stubble field yielded but ten bushels per acre. The protected summer-fallow plots yielded 40 bushels of oats per acre—the largest crop in the district. In other words, hedge 2½ feet high and 75 feet apart made all the difference between a crop of 40 bushels per acre and a complete failure, all other conditions being equal.

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