

Soils and Crops

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Well-Made Sunflower Silage a Success.
Back in 1916, when Champlain was exploring the region of the Great Lakes, he found the Indians cultivating sunflowers. Then the seeds were used for food purposes and for furnishing oil. Since that time the growing of sunflowers has spread over many parts of the world.

But farmers are making a step in the right direction by going back to the first farmers for crops, and thus note the growth of the popularity of the sunflower again. We now have the silo, which was unfarmed of 300 years ago, and sunflowers in the silo spell success and profit.

It has been demonstrated that the sunflower crop yields nearly twice the tonnage per acre as corn, while the feeding values right through average twenty-five per cent. better. In fact, developments of the last three years have brought the sunflower to the front as one of the most satisfactory crops the farmer can grow for silage purposes.

It has been proven by experiments and extensive private feeding trials that the sunflower yields well, the silage is palatable, and is at least the equal of corn, pound for pound. Many comparisons made between corn silage of the best quality and sunflower silage have shown the balance of economy of gain in beef and cattle and yield of milk in dairy cattle in favor of the sunflower.

Of all the different varieties of sunflowers, the Mammoth Russian is the most extensively grown in America. The results of eighteen years' feeding records at the Ontario Agricultural College show averages as follows: Height, ninety-eight inches; diameter of heads, seven inches; and yield per acre of heads, 5.6 tons; of whole crop, 18.2 tons; and of ripened seed, 1,453 pounds.

The sunflower crop may be grown successfully on practically any land which will produce corn satisfactorily. Information has been received from various sources that sunflowers will give even better returns than corn on rather cold and wet soils, moist land, poor soils, light sandy soils, soils not with weeds and weed seeds, and also in high altitudes, in short seasons and under droughty conditions.

Sunflowers are more frost resistant than corn, and therefore may be planted earlier in the spring, or may be allowed to remain later on the land before being cut. One dairy farmer says: "We had one test in which corn and sunflowers were mixed and were grown together in a region where the frost came about September 1. In this case the corn was killed and dried up immediately, producing almost nothing for feed, while the sunflowers in the same field were not affected by the frost and stayed green and succulent."

An experiment was conducted in duplicate in 1920 by planting sunflowers at six different distances apart in rows, ranging from one inch to twelve inches. From the limited tests made in growing the crop for silage it seems that the best method would be to have the rows about thirty-six inches apart and the plants six inches apart in the rows. This would require about seven pounds of seed per acre or nearly one-third of a measured bushel. The seed may be sown with an ordinary grain drill by plugging some of the tubes.

The best period at which to cut the sunflower crop for the silo does not seem to have been definitely established. However, from observation, it would seem wise, in consideration of both quality and quantity of silage, to allow the plants to become as far advanced in maturity as possible without permitting many of the leaves to be lost. Sunflowers may be harvested with ordinary corn machinery. Where no corn binder is available a sled with knives at the sides gives good service. The following table indicates the probable yield in green weight per acre of sunflowers, as against corn, and peas and oats, the moisture content at the time the crops were put in the silos, and the yields in dry matter per acre:

	Yield	Per Acre	Per Cent. Moisture	Per Acre
Sunflowers	79,200	82.41	12,034	
Corn	27,980	78.72	5,745	
Peas, oats	14,000	62.64	5,230	

Sunflowers, plus the silo, practically double the stock-carrying capacity of the land, is a fact demonstrated on thousands of American farms. The discovery of this new fodder, or the utilization of this ancient plant as silage, either way you wish to put it, is of enormous importance to the average farmer. Enlarged it will enable him to increase his herds, without having to increase the size of his farm or to further invest in land. In short, sunflowers give promise of improving the whole agricultural system, and bring bigger returns to the farmer for a small outlay in buildings and stock.

And feeding tests show sunflowers up in just as favorable light as do the yields. Forty Holstein cows on one farm were successfully rationed on corn, peas and oats, and sunflower silage for periods of two weeks each, each cow being given thirty pounds of sil-

A Square Deal for Boys and Girls

By Grace O. Stewart

A county superintendent of schools recently voiced a growing sentiment when he said, "If farmers find it worth while to heat water for their cows, to cook feed for their hogs, and to make coffee for themselves when lunching in the fields or in the woods, why do they not just as much worth while to provide something warm for the boys and girls' school lunch? In the schools of our county where hot lunches have been served, the children have benefited both physically and mentally. They are also learning something of food principles, cooking, serving and table etiquette where the right teacher is on the job."

The hot lunch has come to be recognized in many rural schools, as well as in the high schools of the cities and towns, as an essential part of the school program. The preparing and serving of the one hot dish supplementary to the cold lunch brought from home will easily simplify the problem of providing school children with adequate food.

First of all, let us make an analysis of the meals consumed by many children during the school year.

1. The breakfast is eaten hastily in order to catch the school wagon or to have sufficient time for the long walk with a few minutes to spare for play before school begins.

2. After a long morning of exercise and study, a growing child is ready for a good, nourishing meal. Instead, he sits down to a cold lunch that frequently consists of inadequate partly frozen foods, while the family at home is enjoying a good, hot meal. Such food is not conducive to mental activity—it is, to a great degree, the cause of many cases of malnutrition, which leads to backwardness in work among school children. Upon proper food depends the development of a sound body and healthy mind.

3. What is the situation in the evening? This tired, hungry child returns, repeating the journey of the morning, and often helps with the chores before supper time. Though he is hungry he should not eat before meal time. The supper was planned for the men folk and the family and in accordance with the food served to them for dinner. The one who should be considered the most has been forgotten in this plan. Seemingly he eats a big meal but is it the right kind of food to make up for the lack in his cold school lunch, and is it in suitable form to be readily digested so that it will not interfere with his necessary rest at night? When this is repeated day after day, the effect upon the child's health is apparent, though it is often unknowingly attributed to some other cause.

Are the other members of the family equal sufferers with the child? Decidedly not! After they have hustled the little folks off, they go back and eat their breakfast in peace and quiet. At noon the family enjoys the biggest and best meal of the day while the younger members at school are having a cold lunch. Usually the family dinner includes the fruits and vegetables of the day's dietary. These foods that are so necessary for bodily growth and health the child misses. The evening meal is almost universal made up of the "left-overs," which means many fried foods.

Considering some of these things and that the child eats more than one-fourth of his meals at school, is it worth while and effort to establish the custom of serving one hot dish in the school lunch?

Ways and Means.
In some city high schools it requires a paid supervisor to direct the work. Lunches, or the warm portions of lunches, are served, not only to the pupils who live at long distances from the school, but to all other students who wish to take advantage of a warm meal at minimum cost.

The purpose of this article is to help and assist teachers, parents and school boards to successfully plan the hot lunch club in the high schools of smaller communities, and in rural schools where paid supervision is not practicable.

The hot lunch club, to be successful, should have the co-operation and support of the entire community. The school board and the parents are most intimately concerned with this project, but such organizations as the Parent-Teachers' Associations, the Farmers' Clubs, and the various Women's Institutes should be made to feel a vital interest in the undertaking.

How to Provide a Hot Lunch.
The equipment for providing hot lunches may be obtained in any of these ways: The Parent-Teachers' Association or Women's Institute may donate it; the school board may finance it, a part at least; interested patrons may donate it; the school may give an entertainment or box supper, the proceeds to be used for purchasing the necessary equipment; a shower may be given and many of the utensils supplied. If a table and cupboards are needed, the larger boys can make them out of dry goods boxes or old desks. The freeless cooker should be made as a part of the equipment.

The daily lunch supplies may be obtained by the method best suited to the community. Food materials may be contributed by the different pupils, credit being given at market prices for the foodstuffs furnished. Should the club wish to make outright purchases of food materials, a blanket charge of ten to fifteen cents per week may be made to each child. In the latter case, purchases may be made from the club members. For example, a bushel of potatoes may be secured from some boy or girl who drives to school and has extra produce to dispose of.

Only Simple Equipment Needed.
A good plan is to have each member of the club furnish his own cup, plate, spoon and fork. These are kept in a cupboard at the school. Dish towels are brought from home by the pupils or are purchased by the club. There should be:

1. A two or three-burner oil stove. Stoves may be rented if necessary for the winter season. They will also be useful in community affairs.

2. A small table or its equivalent. If space does not permit the placing of a stationary table, one can be made which may be hooked against the wall when not in use. This is made possible by attaching the table to the wall by means of hinges. The legs are also placed on hinges, thus allowing them to lie back against the table when it is folded against the wall.

3. Dishes for work in preparing food. Large kettle and cover, long-handled spoon, measuring cup, measuring spoons, quart measure, table-spoon, fork, paring knives, can opener, vegetable brush and potato masher.

4. A cake tin, an oven and a few baking pans are useful, but not necessary at first.

5. Cleaning equipment: Dish pans, dish towels, dish cloths, soap and cleanser.

6. Staple supplies. The school cupboard should be stocked with a small supply of staples which may be secured from proceeds of a social, such as: Flour, rice, corn-starch, cocoa, sugar, salt, spice, soda, soap and scouring powder.

An "emergency shelf" is a wise precaution against the mishaps that may sometimes occur. Upon this shelf may be kept some home-canned vegetables, soup mixtures, baked beans and other foods that may be prepared quickly.

Suggested Plan for Conducting the Work.

The success of the school lunch depends on a well worked out plan. The daily round of duties must be reduced to a system. The teacher and children should work out the plan together but when the machinery is once set in motion it should require but little of the teacher's time and effort. She should not attempt to do the work herself. If she did, the real educational value would be lost. The benefits derived by the club members from the serving of the hot lunch will depend upon its management. It is best to allow all pupils to share in the duties, privileges and the good times, making it a big "family affair."

There are three types of work carried on by the club. These are: cooking, housekeeping and book-keeping. The club should be divided into two groups, A and B. The work will rotate for a period of two weeks. During this time each group has an opportunity to perform each type of work. This rotation continues through the season.

First week—Group A, cooking and book-keeping. Group B, housekeeping.

Second week—Group A, housekeeping. Group B, cooking and book-keeping.

The duties of groups and names of pupils in each group should be posted in a conspicuous place. The older children should be chosen as leaders of groups during the first few weeks. The work should be so divided that the other school work of pupils will be interrupted as little as possible.

Duties of Cooks.

1. Plan the lunches, with aid of the teacher.

2. Prepare the food.

3. Serve the luncheon dish.

4. Apportion the supplies to be furnished by the members. Members should be notified well in advance and care should be taken that the materials assigned are convenient for the member to bring. As far as possible, let the amount of material brought per week equal the cost of lunches for the week.

5. Keep a careful account of the food furnished by the children.

6. Balance the weekly account of each club member.

7. Keep an accurate record of the cost of the recipes prepared.

Some clubs find that the secretary-treasurer acting as auditor for the entire year works very satisfactorily. She must necessarily secure all data from the group acting as cooks.

Duties of Housekeepers.

1. Keep the school room clean and orderly.

2. Place the dishes on the serving table ready for the noon meal.

3. Have the dishwasher hot.

4. Wash and replace the dishes on the shelves.

5. Assist in the serving if the club members are seated at tables.

Lunches should be planned in advance. (1) to simplify the work; (2) to save time; (3) to help the mothers in packing the lunch brought from home. A lunch plan for two weeks is suggested below. Add to this each week the plan for a new week and if that means keep your menu in advance. Pupils should take home a list

The Welfare of the Home

Teaching Through Play—By Mrs. C. W. Savage.

Is there a kindergarten in your community?

No? Then why not practice kindergarten principles in your own home? I do not mean by this that you must sit down and devote every second for three hours to your children. But teach your child while you are about your work. Teach him through play.

To-day play is considered a great factor in education. "Play is the expression of—awakening instincts." Watch your little girl with her doll. The doll is her baby and she is its mother. Through this play she is developing the instinct of mother love. Watch your little boy playing store or fireman. He, too, is preparing for future manhood. Let us then teach through play.

It is an acknowledged fact that the kindergarten gives a child certain advantages, by cultivating self-confidence, the power of observation, originality of thought and other qualities.

Let us see if it is not possible for the mother to develop similar characteristics at home.

First, Self-confidence! If the child asks to help with the dishes, make the bed, or perform other little tasks, do not be too busy to listen to the request. Accept the offer of assistance with thanks, even if the work takes longer or needs to be done over. Remember this is one of the ways of developing self-confidence and helpfulness. Discouragement will not cultivate self-confidence.

Second, ability to memorize and think: Children love anything rhythmic, whether the words are understood or not. Repeat or sing nursery rhymes and jingles to the children. Soon they will be repeating and singing them after you. Find the time during the day to read or tell them stories. Every child loves a story, especially if acted out.

Third, Love of Nature: When out for walks teach the children about the trees, flowers, and birds. Nature can be known and loved in the parks of the city, as well as in the woods and fields of the country. And reading nature stories supplements the first-hand knowledge the children are gaining; thus adding to their interest and appreciation.

Fourth, Observation: This can be cultivated by giving a child magazines, calling his attention to the different pictures and pointing out every detail. Then as he studies for himself, not one thing in a picture, no matter how small, will escape his eye. And he will become observant not only of pictures, but of everything else about him.

Fifth, Originality: With blocks, the sandpile or plasticine (the latter can be purchased at stores carrying school supplies), a child can be instructed in the making of various objects. Soon he will branch out for himself, doing really creative work.

Sixth, Cleanliness and Orderliness: A child should be commended for picking up his toys when he has finished his play, having it impressed upon him that these toys are his responsibility. If notice is taken of his clean face and hands before and after meals, then constant reminding will not be necessary. Kind and gentle appreciation is an inspiration. Fretful criticism disheartens.

With my little two and a half year old daughter, I have followed the kindergarten thought, including the above suggestions, and the results have been most successful.

Corn Borer Quarantine.
Scouting work for the European Corn Borer in southern Ontario by the Dominion Department of Agriculture is still being continued. It has been found that this insect has spread over a much larger area than was anticipated at the beginning of the season. Up to August 27 a total of fifty-three townships had been scouted and thirty-six of these were found infested by the pest; as thirty-six townships were found infested last year, it brings the total number of townships quarantined up to seventy-two.

On September 7 a Ministerial Order was passed prohibiting the removal of all portions of the corn plant, other than clean shelled corn from the following townships recently found infested by the borer: Picham, Thorold, Stamford, Crowland and Willoughby in Welland County; Canboro, Seneca, Oneida and Cayuga south in Haldimand County; Oakland, Brantford, Burford, Onondaga in Brant County; Blenheim, Blandford, Zorra east, Zorra west and Oxford east in Oxford County; Louth, Grantham and Niagara in Lincoln County.

The total area quarantined for the pest includes all Welland County, all Haldimand County, all Oxford County, all Norfolk County, all Middlesex County, the townships mentioned above in Lincoln and Brant counties, Raleigh and Romney in Kent County and Usbourne and the Village of Exeter in Huron County.

As one of the most dangerous ways of spreading this insect is by the shipment of infested corn stalks, table sweet corn, seed corn on the cob, it is the intention of the Department of Agriculture to see that the quarantine is maintained. Inspectors are stationed at different times on the main highways leading out of the quarantined area and a close watch is also kept on all markets and fall fairs.

The Death of Summer.
Lavender flowers and roses' breath.
And my heart breathes a sigh for you.
Asters have heralded Summer's death
And the kind sky shrouded her all in blue—
Draped a cloud on her, told on gold.
Goldenrod showered her with his fold.
And the breeze so sweet,
In the strange still heat,
Dropped a kiss at his dead love's feet.

Murmur of bees and rustle of grass,
As it stoops to bend its head,
Letting the ghost of the Summer pass
To the land of the unseen dead.
Her eyes were blue as your eyes are
blue,
And, oh, how my heart has longed for you.

While earth and sky
So silently
Were waiting, waiting as even I.
Whisper of wings in the waning dusk,
And my heart still burns for you,
A breath comes laden with meadow
musk
And drenched in the meadow dew.
A cold wind touches the darkening air,
My years are empty, my days are bare,
Winter is nigh.
With its shivers and sigh,
And the year is sad as well as I.

Truly Valorous.
"The world has crying need," said he,
"Of gifted men like me;
But the especial thing to do,
Requires reflection, deep and true—
I've needed everywhere,
And so, to be quite fair,
And chance no pang of sharp regret,
I've not done anything—as yet."

—Carolyn Shaw Rice

Just as soon as the hens show signs of shedding their feathers rapidly, you may be sure that they will not lay many more this summer, and if they are not to be kept over for next winter they should, if in good condition, be marketed immediately.

REVIVING SINGING SCHOOLS

Public singing is a strong binding force in community work. In days gone by it was the one big thing which developed in neighborhoods a genuine community spirit. The old-fashioned singing school was often the only organization in agricultural regions which served to give expression to common feelings. Farmers and their families getting together to employ the services of a singing teacher may have been the forerunner of more pretentious co-operative undertakings. Anyhow every person who believes in working with his neighbor should see in this device of the ages, a tonic which will go far toward keeping local organizations in a healthy state. Furthermore, singing together brings to the rural community much direct enjoyment and needed inspiration.

Music is one of the good things of our present civilization which, in common with other blessings, is as readily available to those who live in the open country as to those who dwell in the cities.

In a few isolated sections township music teachers have been employed to serve the township. The school district is made the unit for instruction. Where the small district system prevails the singing master goes from one district to another, giving instruction to school children and adults alike. In places where consolidated schools obtain, the plan is simplified by calling those interested to the school building for the weekly sings.

If there is no other means available for developing the musical talent of the neighborhood; the local church; or Women's Institute, or other rural social organization ought to take advantage of this means of rendering to the community a real and worth-while service.

How to Do Your Own Soldering.

A soldering outfit will soon pay for itself on the repair jobs which would otherwise have to be made by the tinsmith or machinist.

The necessary soldering tools, consist of a soldering-iron, which is made of copper, because copper retains a coating of tin nicely and is such a good conductor of heat; a stick of solder or hank of soldering wire; some flux; a pair of tinsmith's snips; a heater for the iron.

A gasoline blow-torch is the most convenient implement for heating the iron; the blow-torch will come in handy for other work, such as burning off old paint. Be sure to buy one that has legs over the burner which make soldering-iron while heating, and get a torch of ample size, or it may fail to develop enough heat when working outdoors.

The kind of flux needed depends upon the materials which are to be soldered. Resin is used on bright tin, hydrochloric acid is for galvanized iron, while zinc chloride, made by dissolving bits of zinc in hydrochloric acid, will be useful for practically all other materials likely to be united, except aluminumware.

Soldering paste comes ready mixed in cans or tubes; it is zinc chloride mixed with petrolatum or other grease. Solder known as "half-and-half solder" is best suited to all-round work.

The first step in any soldering job is to have the soldering-iron smooth and clean and well timed with solder; otherwise the work will not be neatly done. To tin the iron, heat it to a temperature that will melt the solder as soon as it is touched; place some bits of solder and a little resin or sal-ammoniac in an old dish or similar receptacle; then rub the surfaces of the iron back and forth in the resin and solder until each face of the iron is covered with a smooth film of solder, like burnished silver.

To insure a good job of soldering the parts to be united or soldered should be scraped bright and clean. Do this with an old knife or piece of emery-cloth. After the scraping, and while the iron is heating, apply the necessary flux.

Zinc chloride flux, being a liquid, is best applied with a small brush. Rosin is convenient to handle if pulverized and sprinkled on the parts to be soldered. Another method is to dissolve the resin in alcohol and to apply it with a small brush.

Remember that the metal to be soldered must be brought to the same temperature as the soldering-iron before a good job can be secured. To accomplish this the point of the hot iron is held against the metal. When everything is working well the molten solder will then follow the point of the iron in a thin film. When solder ceases to flow freely, reheat the iron. The inexperienced person invariably uses too much solder, which results in unsightly work. It is not the quantity of solder that makes a good job, but the secure manner in which it is amalgamated with the metal.

Joke No. 2,678,513.

Hay—Say, what's the matter with your pigs, they're getting thin?
Straw—Well, you see, when I feed them I carry the feed in a tin pan, and after I empty the pan I rap on it and the pigs come for their food. But now, since so many autos are going by, the darn pigs are running all the time.

Scrub stock multiplies just as fast as pure-bred, but it never gets the right answer.