

AGRICULTURE

When To Spray

For old orchards that have never been sprayed and for young orchards newly planted with oyster shell bark, spray before growth starts with commercial lime-sulphur diluted 1 to 9. This spray may be applied any time during the dormant season of the trees, dilute the concentrate through a fine mesh before using. This mixture acts as a general cleansing spray for old trees.

Application No. 2.
Poisoned lime-sulphur or Bordeaux mixture when the leaf buds are swelling in the Spring. For tent caterpillars, but months, clear case beaters and apple scab.

Application No. 3.
Same mixture as above, made just before blossoms open and just after the cluster buds unfold. This application is for the scab, and protects the young leaves and stems from the forming fruit. The poison is added for leaf insects.

Application No. 4.
The same as above, applied when most of the blossoms have fallen and the little apples are still standing upright. Do not wait until the little apples have turned downwards, as it is then too late. This is the first application for codling moth and is important in fighting the scab, as it is this application which gives clean fruit.

Application No. 5.
Arsenate of Lead 2 lbs., and water 40 gallons, a week to ten days later. If judged necessary lime and sulphur may be used instead of water. All five applications are not always necessary, and the grower must be guided in their use by the prevalence of insects and fungi and the character of the season. If only one application can be made let it be No. 1. If only two can be made, use Nos. 1 and 2. If three can be made, use Nos. 1, 2 and 4.

For full information on the insect and fungous enemies of the apple, see part 2 of Bulletin No. 4, which will be mailed on application to the Department of Agriculture, Fredericton, N. B.

Amount of Spray to Use.
The number of trees one barrel of spray will cover depends on the age and size of the trees, and on skill of the man who is handling the spraying. Generally speaking, well developed fifteen year old trees should receive not less than one gallon of spray for each application.

How to Spray.
Spraying should be nearly every case be done with the wind. When spraying the first few large trees, stop the wagon or spray cart just as it comes within a few feet of the tree and spray the nearest side as far as possible, then drive directly opposite and spray all the central part thoroughly; then, move just past the

tree and spray the last part as far as possible. In this way, nearly two-thirds of the tree will be covered and when the wind changes it will be easy to complete the spraying from the other side. A very strong wind no doubt wastes a little of the mixture, but it is very seldom that there is any need of washing operations because of its violence. In spraying small trees it will not be necessary to stop so long at each tree. Go through the orchard as soon as the spray has dried on the trees, and if you notice limbs or portions of the trees here and there that have been missed, it is well to take out the machine and give these spots an application of the spray mixture. In spraying after the foliage has appeared, people are often misled by the advice that is given to cease spraying just before the leaves begin to drip. It is impossible to spray a large or medium sized tree thoroughly without considerable amount of drip; hence, the first rule to follow is:—(1) Make sure that every leaf and fruit is covered; and, (2) To try to go this with as little material as possible.

General Spraying Directions
The essentials for successful orchard spraying are:

(1) Spray intelligently. The grower should have a general knowledge of the more important insect and fungous pests. Unless a man knows exactly what he is trying to fight or prevent, he is apt to waste much time, labor and spraying material. For particulars of the life history and habits of some more common orchard pests, see Part 2 of Bulletin No. 4 and read the same thoroughly. Those who have not this bulletin may obtain it on application to the Department of Agriculture, Fredericton, N. B.

(2) Promptness is absolutely necessary. For these spraying applications which commence with the first signs of growth in the spring, delay is fatal. In most cases, at that time of the year, one might as well not spray at all as put it off for two, three, or four days or even more. The object of a fungicide is to prevent and not to cure. Practically all fungicides should be applied before the disease appears so as to prevent its lodgment and are successful only when they prevent infection. While this is not so true in the case of insects, it is important not to delay spraying for them, since when they are well established and more fully grown, they are difficult to control.

(3) Absolute thoroughness in all phases of work. Many growers do their work in a half hearted way and then complain of poor results. In spraying for fungi it is absolutely necessary to entirely cover every portion of the tree, and in fighting insects, every individual must be reached. Every portion of the tree should be thoroughly moistened with a fine mist or spray in order that a uniform coating of the same may be left on the tree. The owner of the orchard, who, presumably, is the man most anxious to get good results from spraying, should not trust the work to ordinary labor.

but he should do it himself or personally supervise it, unless he has very reliable help.

(4) Spraying solutions must be properly made. Standard made commercial lime-sulphur such as the prepared and sold by The Niagara Spray Co., The Grassell Chemical Co., and other reliable concerns, only need dilution as previously directed. The best makes of lead arsenate have proved so far to be the most satisfactory and most reliable poison for spraying apple trees, either with or without lime-sulphur.

(5) Spray every year. In some seasons fungi and insects are not very numerous and the fruit grower is then strongly tempted to save the expense and trouble of spraying, but it is a great mistake to do so. The spraying done in years when insect and fungus pests are scarce counts in the years when they are plentiful because the effects of proper spraying are not all harvested in the first year.

(6) Use a strong durable brass pump fitted with the best attachments. A No. 2 hand pump fitted to a tank of 40 gallons capacity, with 25 feet 1/4 inch hose, 10 foot bamboo rod, stopcock, hose connections, and double nozzle, will meet the requirements of most of the orchards in the province at the present time.

Notes.

(1) Have a good strong man to work the pump and keep up as high a pressure as possible. The spraying material should come out of the nozzle with a strong singing or hissing sound that can be heard for some distance. Agitate the mixture frequently.

(2) Lime-sulphur should not be applied when the temperature is below freezing point or while the trees are wet with rain or dew. Its much wet weather is generally experienced about spraying time, one cannot always wait for a long dry spell. If, however, you can get the spray applied about three-quarters of an hour before a rain, it will be effective and will not wash off unless followed by heavy rain.

(3) Unless properly taken care of, spraying apparatus will easily get out of order. Wash the tank out each night with clean water and also pump some of it through the hose, rod and nozzle. Uncover the nozzle and either wash in boiling water, afterwards drying thoroughly, or place in kerosene or some other oil over night.

(4) If the packing of the pump gets worn, replace with new packing, otherwise the power cannot be kept up.

(5) Lime-sulphur is strongly caustic and it is necessary to have all connections very tight to prevent leakage. Vaseline, and leather gloves are used to protect the hands. The horses and harness may be protected by a blanket or light cover.

(6) Handle with care all spraying materials as most of them are poisonous. Everything should be kept correctly labelled and under lock and key. Lead Arsenate should be mixed in wooden, glass or earthen vessels.

and Cheese. This makes a very hearty food, heavy enough to form main dish of meal. Cook macaroni in boiling salted water until soft. Turn into colander and pour cold water over macaroni to prevent pieces adhering one to the other. Put Macaroni in buttered dish, over it pour the white sauce having the grated cheese in the white sauce. Cover with crumbs and bake.

Cheese is useful in disease. Thus in case of diabetes, when all sugars and tarches must be withheld from patient and the fat greatly increased, cheese is considered one of the best ways of conveying fat to patient.

Then how much better it is instead of eating the cheese in squares with bread and butter, to have it grated, perhaps mixed with cream or mayonnaise and then spread between thin slices of bread to form delicious cheese sandwiches.

Cheese and Olive Salad.
Grate cheese, moisten with cream or mayonnaise. Add six olives finely chopped. Press into shape of small loaf and let stand about an hour. Cut in slices and serve on lettuce with Salad Dressing.

Cheese Souffle.
Two tablespoons butter, three tablespoons flour, one half cup of milk, one half teaspoonful of salt, Cayenne, one quarter cup grated cheese, yolks three eggs, whites of three eggs. Melt butter, add flour and when well mixed add milk. Then add salt, cayenne and cheese. Remove from fire, add yolks of eggs well beaten. Cool mixture, add and fold in whites of eggs, beaten until stiff and dry. Pour into buttered, baking dish, bake four into minutes in slow oven. Serve at once.

Cheese Fondue.
One cupful of scalded milk, one cupful bread crumbs, one cupful cheese grated, one tablespoonful butter, one half tablespoonful of salt, yolks of three eggs, whites of three eggs. Mix first ingredients, add yolks well beaten. Cut and fold in whites of eggs beaten until stiff. Pour in buttered baking dish. Bake twenty minutes in moderate oven.

These two latter dishes are very nourishing indeed.

Cheese Fritters.
Grate four tablespoons cheese, and mix it with fine bread-crumbs. Add one tablespoonful mustard, season well with pepper and a little salt. Work all into paste with two table-spoons of butter and one large well beaten egg. Form into cakes, dip in frying butter, fry to golden brown. Scatter grated cheese over top and serve.

So you see that cheese is a very nourishing, may be made in a large number of dishes and I hope that you will all endeavor to use it in the many different ways in which it may be combined.

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Interesting The Young Folks

Recently on the Pacific coast an investigation was made of seven thousand school children, and on question related to the children's desire to follow their fathers' callings. Only two per cent wished to earn their living as their fathers. Why not? Was it not because we are apt to present the seamy side of things to the people we love best. Are we not pretty sure to see the "hole" before we see the "doughnut"? Is it not a rare thing to find a lawyer who tells his children how glad he is to follow the profession in did? How often do we hear the doctors telling of the compensations of their work? Does the home-maker express enthusiasm for her profession? Do farmers, as a rule, expatiate upon the joys that fall to a farmer's lot, in his independence, his chance for developing all his intellectual powers, his opportunity to master the secrets of nature, and turn them to man's use? Instead of revealing in the sky, the trees and the

sunshine, does he not ordinarily blind himself to the charms of his surroundings and dwell chiefly on his hardships as do most of us? When we take so little pains to provide our young people with an atmosphere of contentment, is it any wonder that the boys and girls on the farms wish for the delights of the town? And it is strange that the city boy has the same yearning for some other place, perhaps the freedom from restraint afforded by the far West?

There is more in this than seems at first. For the existence of all breathing things the first thing to do is to create an atmosphere. If the atmosphere of the farm home is one in which the young minds stifle, how can it be expected that they will follow the father's path? If the father is morose and talks before his growing sons of the hardships of farm life and never shows the bright, cheerful instances of life, there is to it if he goes about his work grumbling at this turn and that; if

he is enshrouded eternally in a blanket of trouble and worry, how can he expect to inspire in the hearts of those sons a desire to be farmers? How can he ever hope to keep them on the farm? A healthy, contented, joyous atmosphere is what the youth of the farm wants, and it is just the thing hardest to attain to by the average farmer in the average farm home.

And yet to follow in his father's footsteps is the first natural impulse of the little boy. "I'm going to be a farmer like father," he says. The farmer has that impulse as a foundation to build on. How carefully should he cherish and nourish, encourage and cultivate it, if he has the place of permanent thing? And the way to do that is to show that farm life, although it may not be void of drawbacks, and vicissitudes, yet that it has its compensations and advantages which cannot be associated with city life.

Cheese And Its Uses

Before speaking of cheese let us glance for a moment at its source, namely milk. All of you are familiar with milk and its great possibilities, and uses in the home, but I wonder if you are familiar with its food value. There is no other article of food which enters so extensively into the diet of mankind as milk. It contains all of the food principles. It is capable of sustaining life for comparatively long periods and is the chief article of food in many diseases.

In the case of young children, milk is their only food, as their digestive organs have not become developed for the digestion of other foods. Milk is unsatisfactory for the only food for adults however.

We see the great food value of milk and we all know how useful it is to the housewife in cooking. From milk we derive cream, butter, and cheese, including the by-products, buttermilk and whey.

Since we have seen that milk has a high nutritive value, we see at once that anything derived from milk must be of great value as a food, as well.

Concerning milk and its derivative, much might be said, but we shall only take time to consider cheese.

Cheese.

It is one of the many articles of food that is not given the place in the diet which it should have. There are few cooks who avail themselves of the possibilities connected with the cooking of cheese dishes, or even to realize the nutritive value of cheese at a meatless supper or luncheon. In making cheese, milk (in whole or in part) is heated and then curdled by use of an acid, but more often by the use of Rennet. This Rennet (called Rennin in the body) plays an important part in digestion. It is made from the prepared inner lining of the fourth stomach of the calf. The curd so prepared is then minced, strained, sometimes colored, salted

and then pressed into shapes in wooden moulds, care being taken to expel all the whey. The cheeses when formed are stored in a moderately warm place and then undergo a process called "ripening." This ripening or decomposition may go on for a longer or shorter time, according to the kind of cheese. It may be for several weeks, it may be for several months.

During the ripening there are developed in the cheeses the peculiar flavors characteristic of the completed product.

Cheeses may be classified as hard cheese or soft cheese.

Soft cheeses are produced at low temperatures and with little pressure. Hard cheeses demand higher pressure and temperature. Among common soft cheeses are Cream, Nonfat, and Roquefort. Hard are Stilton, Gorgonzola and Dutch.

There often appears on the market a "Pilled" Cheese. Of course this cheese has been adulterated, by having hard or other cheap fat added. The law demands that all filled cheeses be labeled as such. If so, they are sold at a lower price. If they are not labeled it is violation of the law. If filled cheese be left in a warm place it will become very greasy, as the hard will have all melted out. Filled cheese has not nearly as high food value as the pure cheese.

Cheese resembles eggs in giving such a large amount of nourishment in a small bulk. It should be used much more commonly than it is. It is not a luxury, but is one of the cheap and most nutritious of human foods. One pound of cheese contains as much nutriment as 1 pound of beef. Cheese may take the place of meat, indeed it is called the "poor man's beef." It is just what can be expected when one remembers that 1 pound of cheese represents the great or part of the nourishment from a gallon of milk.

When one compares the cost of

cheese with that of meat, at its present exorbitant figure, we see that the concentrated nourishment of cheese will often make an excellent substitute for a meat food. In order to get the full food value we must buy the best cheese not filled or otherwise adulterated.

Canadian and Dutch Cheeses are ranked among the best, Canadian being given the preference even by foreign specialists, and writers.

Cheese should be used regularly and in reasonable amounts, rather than irregularly and in large amounts. It is said that in the food of European armies, cheese takes the place of meat.

Unfortunately cheese is not readily digested by every one. For this reason it should be nearly excluded from the dietary of invalids or children, but for all other persons, it is a splendid muscle builder. It is an excellent food for men working in the open, and from whom a great output of work is expected.

Cheese is made earlier of digestion by "grating" and whenever used in a recipe should always be so treated. The additions of a pinch of soda to the recipe will eliminate its digestibility. It should be at once for it thrown aside and left uncovered, the pieces will become moldy and unfit for use.

There are a number of ways in which cheese may be used and I only wish I had the means of demonstrating how to make these. Cold boiled potatoes may be used to advantage in this way: Put a layer of thinly sliced potatoes into baking dish, season with salt, pepper and cover with layer of grated cheese, then another layer of potatoes and so on until all are used. Pour a cupful of white sauce over all. Bake in a little flour, and small piece of butter. Sprinkle top with crumbs. Bake thirty to forty minutes.

Another common dish is Macaroni