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# THE FARMER'S ADVOCATE.

### Hints on Strawberry Growing.

Strawberries succed best on rich, well-drained soil which will not bake easily. Thorough preparation and heavy manuring will give best results. Seldom, if ever, are strawberries too heavily manured. There are many systems of growing plants, but for those who are not strawberry growers and even in most cases for those who are, the matted row is the best. Plant early in the spring when the soil is ready, setting the plants from eighteen inches to twenty-four inches apart in rows three and a half to four feet apart. Give thorough cultivation during the growing season. The looser the surface soil is kept the better the results will be. Place the runners, if possible, so that they will be evenly distributed in the row. If the plants are kept at least six inches apart the results will usually be better than if closer. Mulch lightly just before winter sets in, and after the ground is frozen cover with coarse straw or marsh hay. Frequently this will save the plants in thawing and freezing weather without snow on the ground, when otherwise they would be killed. Remove mulch in spring before plants begin to grow and place between the rows. It may smother the plants if left too long.

As varieties for home use, we would suggest Bubach, Greenville, Lovett and Beder Wood among the best. Williams, which is probably grown more than any other variety for long-distance shipment, came twenty-ninth in yield in the four, years' average, at the Central Experimental Farm. It is, however, one of the best for this purpose.

The Sample (imp.) is undoubtedly another of the best commercial strawberries on the market. It is very productive, handsome, and uniform in Fruit large, bright to rather deep glossy red and moderately firm. Segson medium to late. Quality, medium. Although not generally known, the Buster (imp.) is another fine variety. It is very productive, and the fruit, which is large, maintains its size well to the end of the season. The color of the fruit is pale glossy red, much like Clyde in appearance. Moderately Quality above medium. Season medium ce. Foliage very good. Warfield (imp.) is firm. to late. one of the best of the older varieties, being very productive and attractive deep red in color. is one of the best kinds for canning. The foliage is inclined to rust sometimes, a fact which is somewhat against it. Glen Mary (Perf.) has for years been one of the most productive varieties with us. It combines great productiveness with very large size of fruit, the fruit remaining large until the end of the season. Fruit very large, rather irregular in shape, bright red, moderately firm. Quality medium. Season, medium. The irregularity of the fruit is somewhat against this W. T. MACOUN. variety.

Central Experimental Farm. Horticulturist

#### **Orchard Cover Crops.** (Ottawa correspondence.)

Speaking about the management of orchard soils before the Agricultural Committee of the House of Commons the other day, Prof. F. T. Shutt, Chemist at the Central Experimental Farm, Ottawa, said that for several years he had been carrying on investigations in the orchards at the Experimental Farm, with a view to obtaining data as to the relative efficiency or merits of different methods of soil management. He had in view three essential features : The economic maintenance of the fertility of the soil, control of soil moisture at different seasons of the year, and the provision of a suitable cover crop to protect the roots of the trees during the winter months. One experiment was conducted to ascertain the relative merits of cultivation, as against mulching, for the control of the soil moisture. He had in view the retention of the soil moisture during the early part of the season for the trees' growth; that is, from the date of opening of the season until from the 1st to the 15th of July, and then from that on he endeavored to reduce the soil moisture in order that the tree might thoroughly ripen its wood before entering upon the winter, and thus be protected from killing by frost. As a result of the experiment, he said he was satisfied that the proper method is to cultivate the orchard a cover crop, preferably one of the legumes (clover, peas, etc.) about July 1st or 15th. The growth of this crop has the effect of reducing the soil's moisture, and at the same time provides a mat of growth which restores the humus and nitrogen of the soil, and furnishes material which serves to hold the snow during the winter, and thus protects the roots of the trees. He referred to hairy vetch as unsuitable for mulch ing, due to the fact that although it may survive the winter, when it is once cut in the spring it does not throw up any afterniath, but dies. He advised the sowing of crimson clover in the Niagara district, and mammoth red, the long red variety, in Eastern Ontario. Sow the clover in the orchard from the 1st to the 15th of July, and leave that crop alone until the following spring or some time in May, then turn it under and keep the ground well cultivated until about the 1st or 15th of July, and then sow again. By following this method the farmer controls the moisture of the soil, retains and adds to its fertility, and at the same time provides something that will hold the snow

is the next best legume to clover for a mulch crop in It would not stand cutting, but he did an orchard. not consider that a serious objection, providing the method as for clover was followed. He pointed out that soil kept under sod loses very much more moisture than it would do if it was kept cultivated and sown with a cover crop. Neither should a cereal crop be grown in the orchard, owing to the fact that it seriously depletes the soil's moisture.

He reported the results of an experiment growing buckwheat and rye in an orchard. He found that from 100 to 120 per cent. more moisture was lost per acre where buckwheat and rye was grown than where the soil was kept well cultivated. He advised sowing the cover crop in drills rather than broadcast, and said that the harrow should follow the plow immediately after the cover crop has been turned under.

Speaking about fodder corn grown in hills and drills, he said that the iodder is slightly more valuable when the corn is grown in hills. It has more ears. The Dent varieties gave three tons per acre more than the Flint, and he referred to the Longfellow as the best Dent variety. He said corn should be cut when it commences to glaze. At that time it contains the largest amount of nutrient, and at the same time the best composition as regards digestibility. If cut later it becomes hard, and to some extent impaired in its feeding value. If cut before reaching the glazing stage the corn is watery and not valuable as 'ood. He pointed out that frozen corn should be put into the silo immediately after freezing. If it is wilted very much on account of the frost, pour in some water so that it will pack tightly. In reply to a question, he said that the feeding value of corn is not injured because it gets smashed up in a blower. The finer it is the closer it will pack, the less air and fermentation and the less loss in the silo.

## The K. L. Mixture.

A new spraying mixture is the kerosene-limoid (K-L), which is simply a mixture of hydrated lime and water. Limoid is dry-slacked magnesian limestone, prepared by grinding, dry-slacking and sifting good stone lime, which should contain less than five per cent. magnesia. The mixture makes a covering on the tree resembling thin whitewash. Kerosene is the killing agent.

A method of dry-slacking lime was suggested recently by Prof. M. B. Waite, of the Department of Agriculture, at Washington. The stone lime is broken into small pieces, and a small portion is put into a wooden box; upon this lime is sprinkled a little hot water, and when slacking is nicely started the balance of the lime is poured in and some kind of a cover is thrown over the box to keep in the heat and steam, which cause the entire amount of lime to slack into a dry impalpable powder. This should be carefully sifted through at least a 40-mesh sieve, and it is ready for use.

To make K-L, the kerosene and lime in proper proportions are thoroughly mixed together in a thin, sloppy mass, and should any kerosene separate out, a little more lime must be added. One pound of lime will take up or absorb one quart of kerosene, and in this proportion the mixture should always be made; that is, four pounds of lime to one gallon of kerosene. The required amount of water is then added to dilute to the desired strength, and the whole mixture is at first stirred with a paddle to throw all of the "sloppy " mass into suspension in the water. It is then agitated violently with the spray pump and hose for from three to five minutes, depending up This is necessary to on the form of lime used. form an emulsion, out of which the oil will not separate. It is best to have an extra barrel in which to mix the kerosene and lime, unless the top of the spray pump barrel is easily removed. Pour in the kerosene, add the lime and stir with a paddle until they are thoroughly mixed. Add few gallons of water and stir again, to throw mass into suspension in the the "sloppy" water. Pour this into the spray pump barrel, add the balance of the water, and pump back into itself for from three to five minutes. Like all other mixtures, this should be agitated while being sprayed. The mixture may be prepared in widely differsoil during the months of May and June, and then sow ent strengths. The following formulas show the amounts of the various ingredients for different strengths of the mixture :

during the winter. Prof. Shutt said that hairy vetch theoretically supposed to be a panacea for all orchard pests

For use during the growing season, it is safe to apply 10-per-cent. K-L to apples, pears, peaches, cherries, quinces, currants, etc., and from tests made, it seems safe to recommend 121 per cent. on all these fruits, and 15 per cent. on apples and pears, to combat San Jose scale. A slight leaf injury may follow, but is preferable to the injury caused by the scale. In the dormant season, a strength of 25 per cent. has been used on plums, pears, peaches and apples. Though the K-L mixtures have been tried only one season at the Delaware Experiment Station, from a bulletin of which this account is condensed, it promises to prove very effective in combating scale . It has aroused much favorable discussion, and more extensive tests are likely to be made this season.

#### The Fruit Institute Addresses.

The branch of the series of fruit institute meetings, conducted by delegates A. E. Sherrington, Walkerton; and P. J. Carey, Dom. Fruit Inspector, opened March 22nd, at Ingersoll, with a four-hour afternoon session. Mr. Sherrington, the first speaker, gave an excellent practical talk an orchard culture, concluding with a plea for co-operation in marketing. The aim of the fruit-growers, he said, must be to produce a larger percentage of a better class of fruit. The first essential is thorough cultivation, and giving the trees the full use of the land. In a young orchard hoed crops and clover may be grown, but never grain ; in the bearing orchard we should look for nothing but fruit. Apples from an orchard in sod, may be better colored, but they will not have the size, and the trees will not produce nearly so well as under cultivation. General planting of large orchards was not advised, but we should take better care of the trees we have.

We must attend to the pruning; nature can prune a forest, but not an orchard. Spring pruning was advised, to save time and also plant food that would otherwise go to produce the growth lopped off. The speaker advised cutting large limbs when necessary in early spring, painting the wounds a few days later. Use a fine-tooth saw, with teeth on one side only, and cut close to the main limb that the wound may heal more quickly. Avoid cutting large limbs if possible, but remove them if in the way of cultivation. The saw is necessary in most Ontario orchards, because the use of the knife has been neglected. In pruning young, newlyset trees, leave three or four arms, never two. In older trees, cut out all cross-growing branches, and aima to have the bearing wood evenly distributed throughout a symmetrical head. Try to have the branches starting out all around the tree, and don't cut the heart out of the top. Some varieties, such as Spies, won't stand it at all.

Try to produce six or eight inches of new wood growth each year. To retard growth withhold nitrogenous fertilizers, supplying phosphoric acid and potash instead, so as to induce fruit production.

Heading in of young apple trees was advised. In doing so do not cut back past the last season's growth, else water sprouts may grow out around the wound. Cut so as to leave a bud at the end of the pruned The common Ontario system of pruning is to twig. trim the limbs up clean and leave a small bushy top. This is wrong. The fruit spurs should be distributed throughout the tree. After pruning, take the ladder and clippers and thin out the small wood. Prune annually, but do not hesitate to use knife or clippers any time during the season. Supply the tree with the three main elements of fertility-nitrogen, phosphoric acid, and potash. Nitrogen enters largely into wood growth. Phosphoric acid is abundant in the seed. Large drafts of potash are made on the soil by a bearing orchard, for both wood growth and fruit. Barnyard manure supplies the three, nitrogen usually in excessive proportion. Supplement it with 80 or 40 bushels per acre of ashes every alternate year; this will supply potash and a little phosphoric acid. Bone meal or ground phosphate rock will provide more phosphoric acid. If ashes are unobtainable, use muriate of potash. By using these mineral fertilizers, and plowing under clover to supply nitrogen, barnyard manure may be largely dispensed with. In reply to a question, good ashes were worth 25 cents a bushel, if they could not be bought for less. "Will heavy winter manuring or mulching delay the buds in spring ?'' was a question answered with an emphatic negative. There is sufficient sap in the tops to start them into growth, and warm weather will force them out, whether the ground is frozen or not. Cultivate, first, to conserve moisture. Mulching would do this also, but cultivation is preferable, because it keeps the feeding roots at a safer distance below the surface. Cultivation also liberates plant food, and lets the heat and air down into the soil. Mr. Sherrington outlined his own system of orchard cultivation. He plows early in spring, as soon as the ground is fit to work, harrowing the same afternoon with the harrow, to compact and pulverize the soil. After this frequent use of disk and smoothing harrow until the first of August induces a vigorous tree growth. Cessation at this period checks wood growth and allows the wood to mature well before winter. He used to sow a clover cover crop in August, but has been obliged to stop doing so, as the orchard was green to the Bordeaux, a K-L-B-P (kerosene-lime getting so rich, especially in nitrogen, that it was

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strengths of the			(110 111	Kerosene.		Lime.		Water.	
For	16%	K-L	use	5	gals.	20	lhs.	443	gals.
For	121%	K-L	use	61		25	1.4.14	43	1.4
For	15%	K-L	use	74	44	30	4.4	411	6.6
For	20%	K-L	use	10	1.1	40	1.1	381	11
For	25%	K-L	use	124	4.4	50	4.4	341	6.6

After standing, the lime holding the kerosene settles to the bottom of the vessel. This does no harm ; agitate and the mixture is as good as ever. If standing more than a day or two, the bulk will be decreased by evaporation of water. This may be restored by addition of more water.

K-L is an insecticide for sucking insects only, and is especially recommended to combat San Jose scale. For combined insecticide and fungicide, a K-L-B mixture may be made by simply using Bordeaux mixture instead of water. By first adding Paris Bordeaux-poison) mixture is mahe. This is growing too much wood. Since breaking up the sod