barrels of No. 2 fruit, with not a bushel of culls. The per cent. of No. 1 is not over 50 in the average Spy orchard this year in this section.

In my three years' experience I have not had a single instance when thinning has not paid me handsomely. I am getting a good crop yearly from nearly every tree, whereas formerly, in many instances, I had a large crop once in two or three years.

Fruit-packing Prizes.

The Department of Agriculture for the Province of British Columbia has decided to encourage good fruit-packing throughout the Province. Last winter, in many of the fruit districts, packing schools were conducted, and at that time it was stated that the Department would issue diplomas to those attaining a certain standard of proficiency. This proficiency will be estimated on the following basis :

1. At each packing-school the instructor gives each student a grading based on proficiency acquired in packing.

2. Each student working as a packer is asked to notify the Department of the name and address of the packing concern employing him. The employer will be asked to furnish a statement regarding the proficiency and speed of the student as a practical packer during the season.

3. Packing contests will be held at many of the agricultural fairs for packing-school students. Packed fruit exhibited by them will be judged by an expert packer, and their proficiency in showpacking judged.

Fifteen, ten and five dollars will be given as first, second and third prizes. The conditions are : Each exhibit must consist of five boxes of apples; five or fewer varieties ; five packs; all layers, except face, wrapped ; box need not be nailed; fruit may be wiped ; no layer papers.

Score as follows : Grading of fruit, 20; packing, 20 ; bulge, 20 ; height of ends, 20 ; firmness, 20 ; total points, 100. Maximum points obtainable by pupils : Proficiency in packing school, 200 ; practical packing, 100 ; packed-fruit contest, 100 ; total, 400. Packers scoring 300 points (or 75 per cent.) will be awarded diplomas by the Department of Agriculture.

It is believed that, in setting such a high and useful standard of proficiency, the effort necessary will be well worth making. The increased demand for good packers in British Columbia in the immediate future will make such a certificate valuable. R. M. Winslow, Provincial Horticulturist, is looking after the contests.

Value of Cover Crops.

1. In a bearing raspberry plantation, would it be advisable, where manure spread on the fields costs $2 per ton, to plant rye in September to plow down in May ? Would the rye retard the growth of the berries ? Would it be hard to eradicate if some of it should get into the rows ? The rows are six feet apart, too narrow for a drill, and presumably the seed would have to be broadcasted.

2. Assuming one ton of horse manure, theoretically free from weed seeds, to be worth 100 per cent., what is the value of one acre of each of the following crops to be plowed down for manure : clover, peas, rye, buckwheat, or any other crops suited to the purpose, the values given not to be the gross content of the crop, but the net value to the land clear of the food extracted by the growing crop before being plowed down.

3. If one ton of any of the following crops were cut in the usual condition when ordinarily harvested, and hauled to another field, what would be its value as manure, horse manure being 100 per cent. : Clover, rye, buckwheat, peas ? This question is not intended as a request for advice as to the advisability of using a cut crop as manure, but simply to get clearly the fertilizing value per ton of that part of these crops usually harvested, as distinguished from the roots and stubble. D. D. L.

The object of cultivating between the rows of raspberries is to destroy the weeds, to form a soil mulch, so as to retain moisture and to keep the soil open and friable, in order that the air may freely penetrate the soil, and do its part in rendering the plant food in the soil available. To cultivate too late in the season means the continuing of the conditions which form the early strong growth, and would not allow the proper ripening of the canes. By growing the crop between the rows, some of the moisture and food are taken away from the raspberries, and they are more or less forced to mature. Where they can be grown, the legumes are always to be preferred, as they gather nitrogen from the atmosphere, but rye makes a big growth, and forms a large quantity of humus. If sown after the crop of berries is harvested, and a good growth of cane secured, I do not think that the rye will do the raspberry bushes any harm. Rye is somewhat difficult to eradicate once it gets possession of the ground, but if, after the rye is plowed down, all plants along the rows are removed, and none of it is allowed to go to seed, there can be no difficulty on this score. If the rye could be sown with a drill, all trouble of this kind would be overcome. As this is impossible, I would suggest scattering the seed carefully, so as not to allow much of it to fall along the rows of raspberries. It is important that the crop be plowed down early enough in the spring to insure that the berries are not robbed of the food and moisture they require to produce their normal growth. Under such conditions, I think that the rye would be more economical than the farmyard manure at the prices stated.

The above statement is made on the assumption that the soil is rich enough to produce required growth. If, however, added fertility is required, then manure should be added. It may be that the addition of manure, with cultivation throughout the season, will not cause too big a growth, or, it may be that a combination of the manure and rye would be the best for the ground. I think the point that must be kept in mind is that the rye will not add any fertility to the soil. The organic matter formed will, in its decay in the soil, increase the available fertility, but it does not add any fertilizing constituents. Whether manure is to be used with the rye or not, will depend on the richness of the soil, as indicated by the growth.

It is impossible to answer the second question with the data we have on hand. The legumes (clover and peas) gather some nitrogen from the atmosphere, but we have no way of distinguishing between the nitrogen gathered from the soil and from the atmosphere. With the other crops, rye, buckwheat, millet, etc., all the food which they have taken up, with the exception of carbon, has been derived from the soil, so that in the case of these crops, the net value to the land, clear of the food extracted by the growing crop before being plowed down, would be the same as the gross value, with the exception that vegetable matter has been turned under which will form humus, and leave all the good effects that this valuable substance has in the soil. However, as we have no way of valuing the amount of humus that would be formed in this way, we cannot ascribe a value to this material. It is worth a great deal to the soil, because no soil can do its best work without a good supply of it.

With reference to the third question, we have figures with reference to the pounds of nitrogen, phosphoric acid and potash which would be in each ton of the green matter of the crops mentioned. If, as requested, we place the value of horse manure at 100 per cent., then the standing of the other crops in per cent. of this per ton, would be about as follows :

	Per cent.
Horse manure	100
Buckwheat	59
Red clover	84
Peas	89
Oats	66
Rye	94

It is, of course, evident that any such figures can only be an approximation; for, in the first place, horse manure is not of a constant composition. The green crops would be more constant in this respect than manure. The calculation for the various crops has been made in the green condition, at the time of full bloom. The above figures give a greater value to rye than to the legumes, but it is at once evident that the clovers, particularly, would have a good deal more root substance than the rye, and the roots of the clovers, because of the ability of this plant to absorb nitrogen from the atmosphere, will have a much greater value than the rye. Consequently, if the clover was to be plowed down on the field, then its value would be very much greater than rye.

The questions asked are of a good, practical nature, but ones which are very hard to answer from data on hand, and the only way that clear evidence can be got for a comparison between these crops is by experimenting with these various plants as cover crops. R. HARCOURT.

Ontario Agricultural College.

Good Fruit Prospects in Okanagan

It is estimated that over 500 carloads of fruit will this season be shipped from the districts surrounding the Okanagan Lake, in British Columbia. From present indications, there will be over 100 carloads of peaches grown for shipping. Summerland alone estimates to ship 25 carloads of peach fruit.

The cherry crop is the best in the history of the Valley. A great number of the fruit ranches last season sowed cover crops as root protection, and its beneficial results are seemingly demonstrated in the increased yield of the orchards that were so treated, and the estimated yield of the Valley for this season. Fruitmen are gradually learning more regarding conditions that influence the crop, and it is almost safe to say that such precautions are being taken as will prevent the disaster which the severe weather wrought upon the orchards in many of the valleys of British Columbia a year ago. More land in the Okanagan is being brought under irrigation, and this summer is witnessing much increased plantation. Farmers in general are quite jubilant over the expectation of having a record bumper crop.

Potato-spraying Advisable in Dry Weather.

Dry seasons tempt even those who believe in potato-spraying to omit or slight the practice, but a study of Bulletin No. 323 of the Experiment Station at Geneva, N. Y., should convince growers that they ought to spray regularly. The past three seasons in New York State have been exceptionally dry, and serious potato diseases have, temporarily, almost disappeared from the State, yet only one-fifth of about one hundred tests made by the Station, or reported to it in these three years, have shown a financial loss from spraying, and the average increase, on more than 1,000 acres sprayed in the experiments, was 36 bushels to the acre. The bulletin summarizes the results of 32 Station experiments made during the past eight years, in which the average gain from spraying every two weeks has been 102 bushels per acre at Geneva, 54 bushels at Riverhead ; and, from spraying three times during the season, 78 bushels at Geneva, 29 bushels at Riverhead. The average gain made by farmers spraying under Station inspection has been 41.1 bushels per acre for seven years, on areas running from 60 to 225 acres each year; and, by farmers spraying independently, but reporting to the Station, on areas ranging from 74 to 600 acres yearly for six years, the average gain has been 52 bushels per acre. It is safe to say that the practice of spraying has saved the 288 farmers reporting experiments in the last seven years more than $50,000.

To this we may add a reprint of the instructions for potato-spraying given by Mr. Caesar in his very full and authoritative article on potato-spraying, published in " The Farmer's Advocate " of May 5th, 1910 :

" Begin to spray early—just as soon as the earliest hatching of the eggs of the Colorado beetle, or when the plants are about five inches high. Keep the leaves well covered with Bordeaux, using a poison with it in each case, until the insects are destroyed, but no longer. After that, keep using Bordeaux, but without poison. If the weather is wet at any time from the 25th of July, up to the end of the growing season, take extra precautions to see that the foliage is well covered with Bordeaux, lest the late blight get a start. In no season should there be fewer than three sprayings, and in most seasons there should be from six to eight. Bordeaux may be used at the strength of 5-5-40 (five pounds lime, five pounds bluestone, and 40 gallons water), instead of the usual 4-4-40. One pound of Paris green or three pounds arsenate of lead are strong enough as a poison for a forty-gallon barrel of Bordeaux."

Detailed instructions for preparing Bordeaux mixture have often been published in " The Farmer's Advocate," and may be found in connection with the spray calendar in our issue of April 7th, 1910.

Spray your potatoes for blight. If you could see this disease working as plainly as you can see potato bugs, you would not think of allowing it to run its course unchecked. Remember, too, that spraying for blight is unlike spraying for bugs, in this respect, it must be preventive, and should be done before signs of damage appear. Bugs may be poisoned : the blight fungus must be prevented from getting into the leaf-tissue.

Strawberries Successfully Shipped to Winnipeg by Freight.

Editor " The Farmer's Advocate " :

In 1909 we sent one car of strawberries to Winnipeg by freight, and two cars by Dominion Express. The car by freight made us the most money. This season it was our intention to send one again by freight, and two by express, but, after interviewing the head office of the express company, they told us that, to take a car of berries to Winnipeg, they wanted at least $510, from St. Catharines, and, as five tons is all that is safe to put in a refrigerator car, this meant $1.50 per case of 24 boxes, or 6¼ cents per box, express, which was prohibitive. As the season was very warm, and berries large and soft, we decided to send only one car by freight. The majority of the growers were again skeptical, and some of the most prominent growers failed to help, but 14 arranged to put in their berries according to instructions, and on June 24th a Grand Trunk Pacific refrigerator was loaded, after proper icing, and the crates spaced and stored in the car. The car was expected to arrive at noon on 29th, but, owing to delay in transit, did not arrive until 3.30 p. m. on Thursday, the 30th. The company here had learned of the delay, and, on account of Friday being a holiday, had notified our consignee (The McNaughton Fruit and Produce Exchange) to be prepared to sell on arrival. The car was placed at their warehouse promptly at 4 p. m., and before 5 p. m. berries were all unloaded and sold. They were found, after the six-days' trip, to be in excellent condition, and, as Friday was a holiday, the grocers were not buying, and berries were all sold to the restaurants at $3.50 per crate, whereas, if the grocers had been competing, they would have brought $4.

It is now felt that, with the experience gained