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GROWING STRING BEANS IN THE WILLAMETTE VALLEY.

By R. W. Gill.

One of the apparent needs of the whole Willamette Valley section is that of a greater rotation of crops. At the present time there is a tendency to grow grain crops year after year on the same land. A great many farmers realize the importance of crop rotations and now rotate from grain to clover and then back from clover to grain. Practically all authorities are agreed that a vegetable crop is necessary to bring about the proper rotation and in a great many cases potatoes and corn have been the crops used. A good rotation to follow is from clover to vegetable crop and then to grain. However, one of the great difficulties in the way of following out this rotation has been the fact that there was no market for the vegetable crop to such a large extent.

This condition is now largely overcome by the fact that dehydrating plants and canneries are contracting for a large acreage of various kinds of vegetables.

These vegetable crops are not only a source of good income but offer a fine opportunity to build up soil fertility and this is especially true where legume crops are grown.

The bean is a legume plant and will add greatly to the soil fertility.

Much has been said about the high quality of Oregon fruit, but there is just as much to be said about the quality of the Oregon vegetable. Our climatic and soil conditions produce a bean of the highest quality and I doubt if there is any section of the whole country which can produce a bean of any more nutritive value or better flavor than that grown here.

It is only in recent years that much attention has been paid to Oregon string beans by the food factories, but once the quality of this product becomes known there will be an increasing demand for the Oregon bean.

MARKETS: There are two markets for string beans, that of the dehydrating plants and canneries and also that of the city market trade. Regarding this city trade there is no staple price, in fact the supply and demand are the factors that set the price and while at times this is profitable to the grower, at other times it does not justify marketing the product. In growing beans for the city trade the grower cannot plan on selling a large acreage, but must limit his output in accordance with the size of his market; while in the market offered by dehydrating plants and canneries, contracts can be entered into and the crop be sold before the seed is planted, so in this case the grower is not taking any chances on the sale of his product. The prices offered may not seem so attractive as that which is obtained at times on the city market, but when the greater volume of business is taken into consideration the grower will be much better off to handle a large acreage on a sure basis of sale; in fact most farmers are too prone to consider the exceptional price on small sales rather than a reasonable profit price on a large output.

CHOOSING THE SOIL: The best soil for growing beans is a warm, well drained and mellow, loamy soil. A location should be chosen that is free from late frosts in the spring or early frosts in the fall. Heavy or mucky soils are not desirable for growing beans as their run together condition will result in baking when exposed to hot summer weather. It is important to choose a soil that holds moisture good under proper cultivating methods. The previous crop planted upon the soil is of great importance and a soil that has been planted to clover or vetch will give the best results. Proper drainage is also of great importance, for the bean is at home in a warm, friable soil.

PREPARATION OF THE SOIL: The best results in growing beans or in fact any vegetable crop can be obtained by plowing the land twice. The first plowing of the soil for beans should be made during March or April and the second plowing should be made about one week previous to planting the seed. If the soil is very cloddy the use of the disc will put it in much better condition for planting the seed. It is of the utmost importance that the soil be thoroughly prepared; for the proper preparation of the soil is more than half the making of the crop and no matter how good attention is given to the crop afterwards, if the proper soil preparation has not been made, these later efforts will be in vain.

FERTILIZER: The question of the proper fertilizer for any given soil is hard to recommend without knowing what chemical elements are deficient in the soil and the careful grower should have a sample of his soil tested so that he may know just what fertilizer is needed. Most of all of the Willamette Valley soils, with the exception of beaver dam soils, are short of humus and any barnyard fertilizer can be applied with good results and I would also recommend, regardless of what other fertilizer might be depended upon, the use of about 100 lbs. of land plaster per acre to be sown upon the land and plowed under the second plowing. There are a great many advantages in using a general purpose vegetable fertilizer, for the results of this fertilizer will be apparent in the soil for several seasons. The use of green cover crops is always very valuable in supplying humus to the soil and will prove of great value as a forerunner to the vegetable crop.

PLANTING: The distance apart at which beans should be planted will depend largely upon the condition and fertility of the soil and in writing this article I shall try to deal more with the average condition of soils that are suitable for bean crops. This distance apart at which the seed should be planted also depends considerably upon the moisture content of the soil and its propensity for retaining that moisture. The bean can hardly be considered a heavy feeder upon the soil. Generally speaking, the rows should be planted about 2 1/2 to 3 feet apart and ordinarily the best results are obtained by planting the seed in continuous drill. The amount of seed to be used will vary according to the soil, usually requiring about 25 to 40 lbs. per acre, and seeding an average of about one seed to each three inches in the row would give a nice stand. Many prefer to plant their beans in hills and while this method has some advantages, especially in hoeing, it does not give an opportunity for each individual plant to develop. When planted in hills, usually three or four plants are left to grow, while in the drill method, each plant is usually separated with only one in a place. The hill method will probably result in a longer season of picking, but it is my judgment that the first picking of the bean is by far the best, both as regards quantity and quality. Regarding the depth at which the seed should be planted, this is entirely dependent upon weather conditions, but, generally speaking, those which are planted in early May should not be over two inches in depth, but those which are planted after the ground has warmed up in June and July can be planted even

as deep as three and a half inches. Regarding the time of planting, this will depend somewhat upon the acreage to be planted, for it is not desirable to have too large a tract coming on at one time, as it might be difficult for the pickers to keep up with the maturing crop. Therefore, in planting a ten acre tract it would be well to make plantings approximately as follows: 2 1/2 acres respectively about May 10th, May 25, June 5, June 20. This will give a harvesting season beginning about July 15th and extending up until time of frost in the fall. We are generally safe from frost up to about the middle of October, which would make a ninety day season. Where it is desired to plant two acres or more in beans, it will pay the grower to purchase a good seed drill and, while I have no preference for one make over another, I have found the Columbia and Acme drills the best suited for planting beans. These machines are not expensive and they save much labor and plant the beans just right as regards depth and distance and give the facilities for proper cultivation.

CULTIVATION: As I have already stated, the main portion of the work in producing a crop of beans has already been done in the proper preparation of the soil. However, it is of great importance that the proper attention is given to cultivation of the crop. The manner of cultivation is also dependent upon weather conditions. In the case of the early plantings when the weather is cold and backward, deep cultivation is essential, for such cultivation has a tendency to warm up the soil. During warm, dry weather it then becomes necessary to conserve the moisture and shallow methods of cultivation give the best results. If it should be necessary to resort to deep cultivation to loosen the soil after packing rain, it should immediately be levelled with a fine tooth cultivator. If it is not possible to apply irrigation, it will become more than ever important to use dry farming methods to conserve the moisture. Space will not permit full details of dry farming methods in this article, but the main principle involved is to stop evaporation of the moisture. This is done by forming a coating of fine dust on the surface of the soil. Practically every farmer has observed that even in the dry weather of summer there is an abundance of moisture to be found under rocks, logs or boards lying upon the ground. The moisture has come up against something solid through which it cannot evaporate and thus is retained in the soil and this is the same principle involved in making a dust mulch. The fine, close texture of the dust has a tendency to prevent evaporation. It is best to continue cultivating or dragging the soil almost up to the time of harvest, but these late cultivations should be very shallow and used only to break up the crust following rains. It is of the utmost importance to cultivate the soil just as soon after the rain as possible, as it is then that the greatest evaporation takes place due to capillary attraction. The grower should be very careful not to cultivate beans when the vines are wet as this will result in producing rust upon the plants and pods. Wherever possible to do so the grower should install irrigation as it will more than double the crop and the expense in growing the crop will not be materially increased while profits will be. In growing a crop of beans there need be little expense in keeping down the weeds if the first cultivation is done immediately when the first leaves commence to appear in the young plants. To do this cultivation in the best manner a riding cultivator is the most desirable as the soil will be thrown around the young plants and smother out the weeds. This first cultivation should be run very close to the row and as the plants develop in size cultivation should be made further from the plants.

VARIETIES TO BE PLANTED: The varieties to be planted will depend upon the markets open and there is very little difference to the grower between the bush and pole beans. The pole beans will produce a larger yield per acre, but this is offset by the fact that they cannot be planted so closely and by the fact of the great expense necessary to pole the tall growing varieties.

PESTS AND DISEASE: Compared with other vegetable crops the string bean is relatively free from insect pests and disease. One need have little fear of their making very great inroads upon the crop. Black aphid is sometimes prevalent, but will succumb to a spray of soap and tobacco. Blight is not usually prevalent, but if it does appear the blighted plants should be pulled out.

EXPENSE AND PROFITS: After choosing the soil as above mentioned and following the culture outlined it is reasonably safe to figure on a crop of 2 1/2 tons per acre, in fact much larger crops have been grown. In making the estimate I have had to average conditions and I have placed the expenses relatively high and the crop relatively low.

Expenses per acre:	
Soil preparation, plowing, etc.	\$ 9.00
Seed	8.00
Planting	1.50
Cultivating	5.00
Hoeing	2.00
Picking 2 1/2 tons at 1c per pound	50.00
Hauling	5.00
Wear and tear	2.00
Total	\$82.50
Value of crop:	
2 1/2 tons beans at \$60 per ton	\$150.00
Value of foliage for feed	15.00
Value to soil on next crop	20.00
Total	\$185.00

This gives a net income of \$67.50 per acre on the crop of beans itself, or a total value of \$102.50 per acre including by-product and indirect profits.

I would recommend the use of fertilizer, but I do not consider this an expense, in reality being an investment and a very good one at that. The application of fertilizer will make a decided increase in the yield and good results will be noted on other crops to follow. Twenty dollars invested in fertilizer will make an extra ton of beans and this without any increase in cost except picking.

Regarding the item of "value to the soil on next crop," it should be borne in mind that the ground used in growing the bean crops is available for sowing a crop of fall grain and the method of cultivation used, the after effects of the fertilizing and also the productive qualities of the bacteria placed in the soil by the bean crop will all be of great value. The soil will also be in the very best of condition to produce a crop of potatoes or other vegetables. It is a very conservative estimate to figure this value at \$20 because it is bound to make more than that much difference in the selling price of the next crop. The feed value of the foliage should not be overlooked as cattle relish it greatly and it makes a fine feed for them at the dry season of the year and is also of great value for using in silos. It is a very conservative estimate to place this value at \$15. With the end of the war there will not be the difficulty of securing labor to grow the crop and the difficulty in picking the beans will be overcome by the fact that an abundant supply of pickers will now be assured for the coming crop.

Raise beans.
"Preliminary peace is now expected by April 20. What year?"—Exchange.

The king of Belgium called on Col. House yesterday and shattered all precedents. The time is here when any king may consider himself fortunate on being received on equal terms by any citizen of a free republic.

Most of the editorial space of The Statesman of this morning is given to the raising of beans. Why? Because this is the most important matter before the people of Salem and

surrounding country at this time. Very much the most important. Some weeks ago, we did the same thing for spinach culture. That was the most important thing at that time. The amount of land that will be devoted to spinach will not produce enough spinach; but the acreage is larger than it was expected could be secured, for this year. The same thing, and even better, ought to happen as to beans. These are among the staples in dehydrating. Therefore their importance to the industry, and to Salem, just now. THIS CAN SCARCELY BE OVERESTIMATED.

Theima—
Individual chocolates 5 cents. For sale everywhere.



Smart Millinery

The particular dresser will be well satisfied with the line of dainty and up-to-date hats we are showing.

The very hat that you have so long wanted will be found among our new display.

There are hats to please every woman—all of the latest models and shapes in the newest colors.



SAMPSON & GIDEON

152 North Commercial Street

BITS FOR BREAKFAST

Now raise beans.
And raise string beans.
And raise the right kind of string beans.
You cannot raise too large a supply of string beans. One factory in Salem wants \$120,000 worth.

And it is vital to the growth of this factory, and to its expansion, that the \$120,000 worth of beans be furnished.

Paderewski is hurrying to Paris to plead for Poland and her needs, and hurry along the proceedings. His presence ought to make the concert complete.

From what is leaking out, the delay at the peace conference seems

to be caused by the unwillingness of some of the delegates to subscribe to the principle of self determination when it affects their own ambitions adversely. When it gives them what they want, it is a great and undying principle. But when their own ox is gored, that is a horse of another color—if the reader will excuse the scrambling of the metaphor. It will take Europe some generations, perhaps some thousands of them, to measure up to the standards of unselfishness that will point the way, even dimly, to the millennium.

IN A SOCIAL WAY

By DORRIS LEAH BIKES

Mrs. and Mrs. Russell Fields, (Olive Beckley) arrived this week from Portland where they spent a few days visiting with friends on their way from Texas. Mr. Fields took the course in ordnance training at the University of Oregon and was sent from there to Texas. He was a popular member of Sigma Chi fraternity.

The trip home was made by way of Denver, Salt Lake, San Francisco and Portland. The couple also spent a few days in Petaluma with relatives.

Mrs. C. R. Ross and Mrs. Earl Flegel left this morning for New York, the former to meet her husband, Lieutenant Ross, who will arrive with the 91st division. Mrs. Flegel will remain in New York with her husband, Lieutenant Flegel, until he receives his discharge.

A cablegram received Wednesday announced that Captain Roy Byrd, who was with the 363rd field hospital company in France, had sailed for home March 31 and that the boat was due to land in New York the 10th of this month. Captain Byrd has been detached from his com-

pany and is proceeding home on account of the illness of his children.

Mrs. George J. Pearce is spending a week's outing at Newport.

Invitations have been issued to all the women of the Presbyterian church and congregation inviting them to a get-acquainted meeting in the church parlors at 2:30 this afternoon. Each woman was asked to bring some friend with her. An interesting program has been arranged by the committee in charge.

Mrs. G. F. Evans and small twin daughters have returned from a few days visit at Newberg.

Mr. and Mrs. G. R. Taylor and small son, George, have come from Astoria to make Salem their home.

Mrs. Walter Williams, of Dallas, is a guest at the home of her sister, Mrs. M. M. Chapman.

The Women's Missionary Society of the First Congregational church will meet this afternoon at 2:30 at the home of Mrs. E. C. Patton, 883 Court street. All members and friends of the church are cordially invited to attend. Mrs. R. B. Fleming will assist Mrs. Patton as hostess.

LEST WE FORGET!
The tumult and the shouting dies—
The captains and the kings depart—
Still stands Thine ancient sacrifice,
An humble and a contrite heart,
Lord God of hosts, be with us yet,
Lest we forget—lest we forget!

Assist Nature. There are times when you should assist nature. It is now undertaking to cleanse your system—if you will take Hood's Sarsaparilla the undertaking will be successful. This great medicine purifies and builds up as nothing else does.

The liquor men now talk of a referendum, but it is not the first time that liquor men see things that did not exist. It is a way that the red stuff always has had.—Exchange.

Everybody Come

We will hold our second annual reception for the public, on the evening of April 9, 1919, from 8 to 10 p. m.

It will give us great pleasure to have you visit our plant at that time, thus giving us an opportunity to demonstrate modern methods, of bread making, and the use of automatic bread wrapping machines.

We trust you will keep the date in mind and invite your friends. Refreshments will be served.

Respectfully,

Cherry City Baking Co.