

REPORT ON SOIL QUALITIES GIVEN

(Continued from Page 1.)

ing potash for crop use. Experiments were conducted to test the value of potash as against gypsum. Both sulphate and chlorite of potash were used. At the end of the season results obtained strongly indicated that sulphur in land plaster and potassium sulphate was most important in increasing yields. This explanation was suggested by Doctor Reimer and Professor Tartar as a result of successful use of other forms of sulphur in Southern Oregon the same season.

The use of sulphur the following year, and subsequent years has further substantiated the theory that sulphur is the greatest limiting factor in these soils where legumes such as alfalfa are to be grown.

The Deschutes Valley Investigations, 1918.

Four fairly complete fertilizer experiments were conducted during the past year and many additional fertilizer demonstrations were carried

In these trials sulphur caused the most marked gain in the yield of alfalfa. The average gain from all representative trials was about 1 1/4 tons an acre. This was generally a larger increase than was obtained by gypsum. The sulphur treatment may be expected to give more lasting results. Since it is possible that sulphur may have a stimulating effect upon the soil, it is strongly urged that in order to maintain the fertility the crops produced be fed out on the land or the manure returned to the soil.

Sulphur is especially important for legumes such as alfalfa, clover, vetch, peas and beans and the cabbage family. Redmond demonstration farm soil contains 646 pounds of sulphur in the plowed surface (6 1/2 inches), or sufficient to meet the requirements of heavy crops of alfalfa for but, 20 years. The increased yields obtained from the application of sulphur indicate that it is a limiting element for certain of our soils in the arid and semi-arid sections of the state for crops like alfalfa. Sulphur may be applied as powdered sulphur or calcium sulphate or gypsum. It is also present in superphosphate and in barnyard manure. Gypsum contains about 18 pounds of sulphur to the hundred pounds and acts promptly, as sul-

phur must be in sulphate form to be used by plants. Powdered sulphur acts more slowly, but its beneficial effect has been observed the fourth year after its application. Superphosphate contains phosphorus, sulphur and lime. Potassium sulphate contains potassium and sulphur. It appears to be good practice to apply 80 to 80 pounds of sulphur an acre to the Deschutes valley soil once in the rotation or once in every four or five years. The application should be made on alfalfa or other legumes. One hundred and fifty or 200 pounds of land plaster once in two or three years could be substituted for sulphur on legumes. The use of sulphur on sour soil or on crops other than legumes is not past the experimental stage in Oregon.

Nitrogen is often the most important element for Deschutes soils and crops. It is used in large quantities by most crops. The cheapest source of nitrogen is the legumes which both secure their own nitrogen from the air and leave a large amount in the soil for succeeding crops. The use of rotation and manure, with legume sod plowed under every four or five years, or with alfalfa plowed in after five or six years, should increase the supply of this valuable plant food.

Potash and phosphorus in the Deschutes valley soils is about average. Certain crops like potatoes, clover or root crops make heavy demands upon potassium, and at normal prices this fertilizer has been used with a good margin of profit in Deschutes valley experiments. Since war conditions have made the price of potash prohibitive, the use of wood ashes and manure must, at present, be depended upon to help maintain an available supply of this element.

Phosphorus is used by plants in much smaller quantities than nitrogen, but is often a very important limiting element in soils. The use of phosphorus has caused increased yields in Deschutes county soils but this may be partly due to the sulphur contained in the superphosphate. Eventually some phosphate may have to be used to supplement or balance manure in maintaining fertility.

Organic matter is probably the greatest need of Deschutes soils. The source of this material is stable manure, straw and legume sod, or roots and leaves of plants. This material has many beneficial effects in the soil. Because it is spongy it increases the water capacity. It makes the soil more mellow and friable. It darkens the soil and makes it warmer. The decay of organic mat-

ter is associated with activity of beneficial bacteria and the liberation of valuable plant food from the organic matter and from the mineral particles of the soil. Since it is most valuable in the active decaying form organic matter needs to be often replenished.

Irrigation Experiments.

The main water variation trials indicate that for the season at hand six to eight inches depth of irrigation on potatoes gave the most profitable returns. Fourteen to 16 inches gave comparatively good returns on grains and the best results were obtained on the meadow with the maximum applications. The greatest depth applied was two feet. It was a case of more water, more hay. If the first cutting of alfalfa on the Williams place required as much irrigation as the second, then 20 inches depth of irrigation was applied for the season.

Relation of Fertility to Economic Uses of Water.

In these experiments wherever the fertilizer was effective, there was a large increase in the production of dry matter from the same amount of water applied. This gave a decidedly better return per acre foot of water. It is entirely possible and very desirable under irrigation to build up the water capacity and the available fertility of the soil so as to maintain a richer plant food soil.

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tion and enable dry matter to be produced at a more economical water cost. In other words, "the richer the soup, the less required" by the crop per pound of feed produced.

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STATEMENT OF OWNERSHIP.

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of The Bend Bulletin (Weekly Edition), published weekly at Bend, Oregon, for April 1, 1919.

State of Oregon, County of Deschutes, ss. Before me, a Notary Public in and for the state and county aforesaid, personally appeared Fred A. Woolfson, who, having been duly sworn according to law, deposes and says that he is the business manager of the Bend Bulletin (Weekly Edition) and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily publication, circulation, etc.), of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the name and address of the publisher, editor, managing editor and business managers are: Publisher, The Bend Bulletin, Bend, Oregon. Editor, Robert W. Sawyer, Bend, Oregon. Managing Editor, Robert W. Sawyer, Bend, Oregon. Business Manager, Fred A. Woolfson, Bend, Oregon.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.) Robert W. Sawyer, Bend, Oregon. Fred A. Woolfson, Bend, Oregon. Henry N. Fowler, Bend, Oregon.

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5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (This

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Information is required from daily publication of March, 1919. (Seal.) J. A. EASTES, Notary Public for Oregon. My commission expires January 25th, 1920.

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TUESDAY, APRIL 15, 1919

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Woodlawn Silky's Sultan, No. 158,429; 16 months old; a splendid animal. Sired by Adelaide's Sultan (123,005), head of W. M. Ladd herd. Dam, Chief Silky's Glow (341,892). Sire, Melia Ann's King 7th (74,814). Dam Silky's Zoloch (218,780), by Golden Glow's Chief.

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Woodlawn Penelope's Star, five months old (registration applied for), Dam by Penelope's Second. Sired by Annie's Sultan's Ladd (140,588).

All the above bulls are extra fine

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These fine young bulls were bred and owned by Sam M. Wood, Redmond, Oregon.

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VOLUME 1 BEND, OREGON. NO. 2

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PAINTING UP



One of the odors of spring is that of fresh paint. Its reek pervades Washington. To some persons it is an odor of no appealing fragrance, but the scent carries with it the whiff of progress. The spring Clean Up and Paint Up campaign is in full swing. An enthusiastic dealer in paint and allied things is quoted in the news columns as saying that the people of Washington seem to be on a regular spree of painting and decorating. A chronicler of the news says that "never before has so much painting been in progress at one time as at the present, and painters as well as dealers in painting materials and supplies say that a more general effort is being made this spring to make the national capital a spotless town than ever before."

Men have not needed to be told that a fresh dress of paint may make an old house look new and that a new house with a worn and shabby coat of paint may look old. It is also true that the proper application of paint may keep a new house from getting old. All men know this, but not all men give practical application to the knowledge.

It is to be noted that when a man becomes enough interested in a house to treat it to a good painting his interest will probably extend to straightening up the porch, stopping the leaks in the roof, pointing up the chimneys, renewing worn-out shutters, doors and windows, putting in a new board where the flooring has become too old, and perhaps he may give joy to his wife by ordering in the paperhanger to help restore the house to its former state of coziness and comfort.

With these germs of household betterment stirring within him, he will also probably get busy with the garden. Ragged grass will be cropped and the bare places in the lawn will turn green. Flowers will begin to bloom and the front fence and gate will be mended. The home will be happier and more valuable. Neighbors will become infected with the suggestion and will go to work. The whole neighborhood will take on an aspect of thrift and prosperity.

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