

THE PLANT FOOD THAT IS NEEDED BY A FRUIT TREE

Ten Years' Experience to Ascertain Elements Removed by Peach Tree in Growth and Fruit-Bearing—By Prof. G. F. Warren, Horticulturist.

Records have been kept at the New Jersey station for ten years in order to determine the amount of plant-food used by apples, pears, cherries, plums, peaches, quinces and asparagus. The orchards were set in 1896. Two trees each of plum and pear and one tree of each of the other kinds have been included in the test. The leaves, prunings and fruit have been collected, weighed and analyzed each year.

The peach tree was a one-year-old Crawford's Late, set in 1896 in part of the orchard that has been regularly tilled, but that has received no fertilizer since the first year. The soil is a gravelly loam of medium fertility, mapped by the bureau of soils as "Penn Stony Loam." No account is made of the plant-food in the tree when it was planted, as it was too small to affect the results. The tree made a fairly good growth as can be seen by Fig. 1. It did not, however, yield very large crops, only about five baskets of plum (128 pounds) in the ten years. The average yield per tree in this orchard has been 277 pounds.

The leaves and prunings were saved as mentioned above. In the fall of

in each of the succeeding six years except 1904. The average amount of plant-food removed per acre during the last six years was 64 pounds of nitrogen, 18 of phosphoric acid, and 40 of potash. If these amounts are taken as representing the plant-food removed by a mature tree, then the amounts used by the young tree are about the following proportions of that used by old trees:

First year.....One-fourth
Second year.....One-fourth
Third year.....Two-thirds
Fourth year.....Full amount

When a secondary crop is grown in the orchard for the first few years, this may give some suggestion of the amount of fertilizer required in addition to that used for the crop.

During the first few years, the tree used 0.22 pounds of phosphoric acid and 0.53 pounds of potash for each pound of nitrogen. During the last six years, it used 0.28 pounds of phosphoric acid and 0.62 pounds of potash. This agrees with the general belief that a mature tree requires larger amounts of the minerals in proportion to the nitrogen than are required by a



"Do you believe in art for art's sake?"
"No; I sell my pictures!"

IT SEEMED INCURABLE

Body Raw with Eczema—Discharged from Hospitals as Hopeless—Cuticura Remedies Cured Him.

"From the age of three months until fifteen years old, my son Owen's life was made intolerable by eczema in its worst form. In spite of treatments the disease gradually spread until nearly every part of his body was quite raw. He used to tear himself dreadfully in his sleep and the agony he went through is quite beyond words. The medical doctor pronounced the case hopeless. We had him in hospitals four times and he was pronounced one of the worst cases ever admitted. From each he was discharged as incurable. We kept trying remedy after remedy, but had gotten almost past hoping for a cure. Six months ago we purchased a set of Cuticura Remedies. The result was truly marvelous and to-day he is perfectly cured. Mrs. Lily Hedge, Cambewell Green, England, Jan. 12, 1907."

Unappreciated Prowess.

The athletic son wrote home from college as follows:
"Dear Pop: Watch the papers. Next week I distinguish myself by throwing the hammer."
And the irate old gentleman stamped his gouty foot and replied:
"I don't care to read any such disgraceful antics in the paper. If you break any windows you'll have to pay for them yourself."

Brown's Bronchial Troches have a world-wide reputation for curing coughs, sore throats and relieving bronchitis and asthma.

Beware of Debt.

Raleigh: Borrowing is the canker and death of every man's estate.

Little wonder that Garfield Tea meets with approval everywhere—it is the Ideal Laxative; pure, mild, health-giving! It regulates the liver and overcomes constipation.

Some finished orators don't seem to know when to quit.

It's the judgment of many smokers that Lewis' Single Binder 5c cigar equals in quality the best 10c cigar.

A virtuous deed should never be delayed.—Alexander Dow.

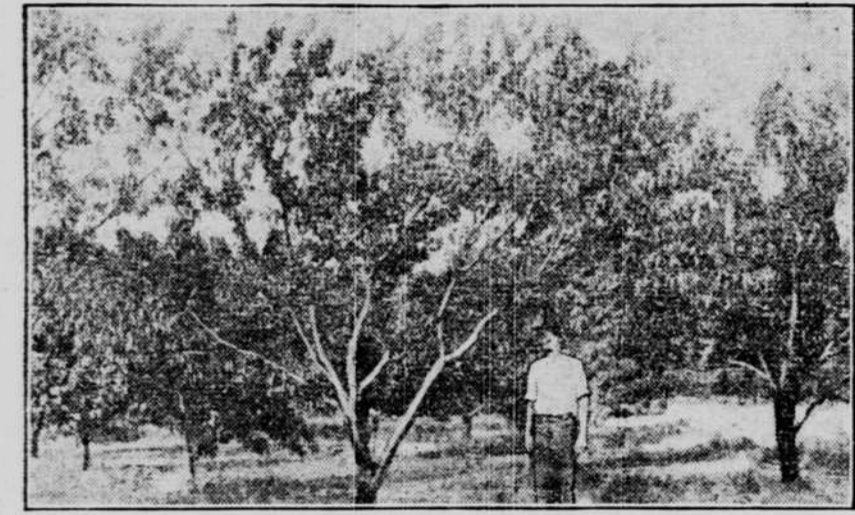


Fig. 1.—Tree from Which Leaves, Fruit and Wood Were Weighed and Analyzed to Determine the Plant-Food Used by It Ten Years.

1905, the writer had the tree carefully dug out so as to get all the fine roots so far as possible. The tree was divided into five parts for weight and analysis as follows:

1. The 1905-growth, cut from the tips of all twigs.
2. The remaining twigs up to one inch in diameter.
3. Remainder of the top to the surface of the ground.
4. Roots larger than one inch in diameter.
5. Roots smaller than one inch in diameter.

Relative Amounts of Plant-Food Used.

Year.	Nitrogen.	Phosphoric Acid.	Potash.
1896	0.17	0.23	0.42
1897	0.17	0.23	0.58
1898	0.17	0.21	0.56
1899	0.17	0.22	0.55
1900	0.17	0.27	0.54
1901	0.17	0.27	0.58
1902	0.17	0.29	0.60
1903	0.17	0.29	0.61
1904	0.17	0.24	0.54
1905	0.17	0.22	0.52

For each pound of nitrogen, the wood and roots used about one-third of a pound of phosphoric acid and half a pound of potash. The leaves used a little more potash but only one-fifth pound of phosphoric acid, while the fruit used over half a pound of phosphoric acid and over a pound of potash.

In those years when a crop of fruit was borne the composition of the ash of the leaves was much lower in potash and phosphoric acid, making it appear that a part of the large proportion of these elements found in the fruit were secured by removal from the leaf. The composition of the ash also been low in potash in years when there was a good fruit crop. When figured on the basis of dry matter, the

To obtain a sample of the trunk, it was sawn into pieces about eight inches in length, and a 300-gram sample of the sawdust was taken.

The larger roots were washed and sampled in the same way. The smaller roots and twigs were sampled by cutting a number of each into small pieces with pruning shears. See Fig. 2.

The total weight of wood produced was 254 pounds, of which 41 pounds were prunings. The total weight of roots was only 62 pounds or about one-fourth the weight of the wood growth. The total weight of leaves was 171, and of fruit 128 pounds.

The number of inches of twig growth has been measured each fall. To determine the amount of each ele-

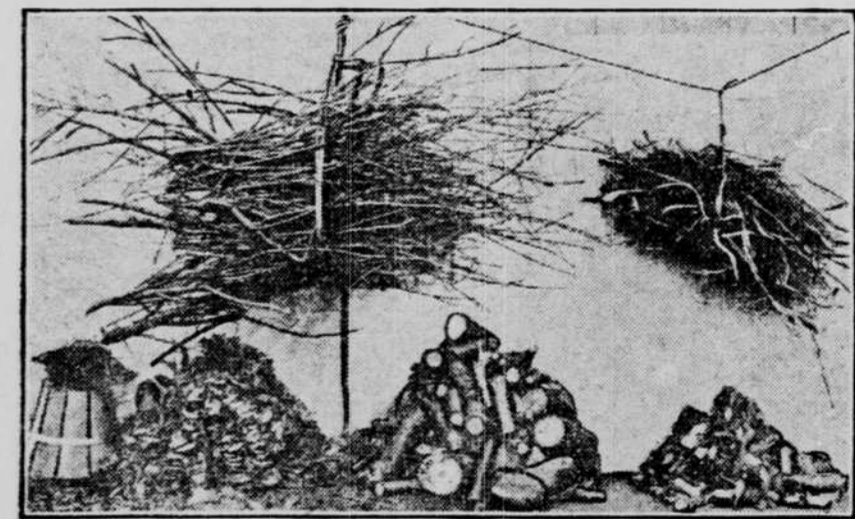


Fig. 2.—The Tree Divided Into Different Parts for Weight and Analysis.

ment removed each year, the amounts removed by the leaves and fruit were added to the amount removed by the wood and roots. To determine the latter, the total amount removed by wood and roots in ten years was distributed throughout the ten years in proportion to the number of inches of new twigs grown each year.

There is no positive way of telling the proportion of prunings, wood and roots that grow in any particular year. But it seems to the writer that the total growth of wood and roots is probably in proportion to the number of inches of twig growth. That the enlargement of the trunk was approximately in proportion to the twig growth, was apparent from an examination of the "annual rings." The years when the greatest twig growth occurred were the ones when the annual rings showed most trunk growth.

There was a gradual increase in the amount of plant-food used each year until the tree had been planted six years. The tree began to bear after it had been set four years, and bore

per cent. of each plant-food was also less on years when there was a large fruit crop.

Bacteria in Butter.—A food faddist tells us that ordinary butter may contain 5,000,000,000 to 10,000,000,000 bacteria to the pound—mostly harmful. As we can't boil or bake butter to sterilize it, while spraying it with formaldehyde would not add to its digestibility, about the only thing left for the consumer is to give up butter, or to treat the bacteria with silent contempt.

Pay Up.—Don't promise to pay your brother farmer for the use of his sire, and after he has accommodated you forget all about it. This sort of thing knocks all the accommodation spirit out of one.

Fruit Raising Popular.—Horticulture is growing more and more in favor, as population increases and the land has to be made to produce more high-selling products.

THIRTY YEARS OF IT.

A Fearful Long Siege of Daily Pain and Misery.

Charles Von Soehnen of 210 A St., Colfax, Wash., says: "For at least thirty years I suffered with kidney troubles, and the attacks laid me up for days at a time with pain in the back and rheumatism. When I was up and around sharp twinges caught me, and for fifteen years the frequent passages of kidney secretions annoyed me. But Doan's Kidney Pills have given me almost entire freedom from this trouble and I cannot speak too highly in their praise."

Sold by all dealers. 50 cents a box. Foster-Milburn Co., Buffalo, N. Y.

Rapid Rise.
"Pa," said Mrs. Hardapple, as she opened the letter, "the man who ran over our old crippled cow with his automobile wants to know how much she was worth."
"Tell him about six dollars," drawled Hiram Hardapple. "Let me see, it was that poor village doctor, wasn't it?"
"No, Hiram; it was a city feller."
"Was, eh? Well, by heck, tell him she was a first-class critter and worth every cent of \$500."
"And come to think of it, Hiram, his automobile was almost as long as a steamboat, with glass windows, six lights and a horn that you could hear five miles."
"What? Then write and tell him the cow he killed was a genuine imported prize-winning Holstein and worth \$500, and if he doesn't settle up every cent in cash I'll put the law on him."

For 12c and this notice the John A. Salzer Seed Co., La Crosse, Wis., in order to gain 250,000 new customers during 1908, will mail you free their great plant and seed catalog together with:

- 1 pkg. "Quick Quick" Carrot.....\$.10
- 1 pkg. Earliest Ripe Cabbage..... .10
- 1 pkg. Earliest Emerald Cucumber..... .15
- 1 pkg. La Crosse Market Lettuce..... .15
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Total.....\$1.00
Above is sufficient seed to grow 35 bu. of rarest vegetables and thousands of brilliant flowers and all is mailed to you POSTPAID FOR 12c, or if you send 16c, we will add a package of Berliner Earliest Cauliflower. John A. Salzer Seed Co., La Crosse, Wis. K. & W.

Generally Done.
"Did you know that the Downtown Merchants' bank had closed its doors?"
"Good heavens! Is that so?"
"Certainly. It always does when cool weather comes."—Baltimore American.

ONLY ONE "BROMO QUININE"
That is LAXATIVE BROMO QUININE. Look for the signature of E. W. GROVE. Used the World over to Cure a Cold in One Day. 25c.

Most people who talk too much get it where Tessie got the beads, sooner or later.

PILES CURED IN 6 TO 14 DAYS.
PAZO OINTMENT is guaranteed to cure any case of itching, blind, bleeding or protruding Piles in 6 to 14 days if money refunded. 50c.

Some men just can't foot a bill with out kicking.

Cheapness vs. Quality
In the matter of food you can't afford to sacrifice Quality for Cheapness. Economy is right and good but inferior food products are dear at any price.

KC BAKING POWDER
is economical—not Cheap. Try it. The best at any price or your money back.
JAQUES MFG. CO. Chicago.

Starch, like everything else, is being constantly improved, the patent Starches put on the market 25 years ago are very different and inferior to those of the present day. In the latest discovery—Defiance Starch—all injurious chemicals are omitted, while the addition of another ingredient, invented by us, gives to the Starch a strength and smoothness never approached by other brands.

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Cardui, the woman's remedy, has been known for many years as "Woman's Relief," because of its great value in the treatment of female diseases. 'Twill help you, if you are a sufferer from any of the ills peculiar to women, which can be reached by medicine. Why? Because it has helped other sick women.

Wine of Cardui

for headache, backache, pressing-down pains, nervousness, irritability, and other symptoms of general female weakness. Mrs. R. L. Denney, of Huntsville, Ala., writes: "Cardui does me more good than any medicine I have ever taken." Try.

WRITE FOR FREE BOOK

HAD TO GET STRENGTH FIRST.

Hard Worked Woman Not Ready to Face Hired Girl Problem.

A Massachusetts man, whose business frequently takes him over the line into Vermont, says that one evening he was a guest at a farm house in that state when he observed that the wife of the owner—a poor, wan little woman—was doing every bit of the work around the house.

As he himself put it, she did an amount of work that would have put an ordinary Massachusetts horse to shame and he really felt like a villain sitting there watching her.

Feeling considerable compassion for the woman, who looked as if ready to drop from overwork, the visitor asked:

"Why don't you get help here? Surely you are not going to try to pull through the long winter without a hired girl?"

A sickly smile came to the pallid face of the woman. "Waal, I dunno," she said. "I don't feel as if I could just sit; but 'praps of I should get to feelin' a little better and stronger I might."—Illustrated Magazine.

Habitual Constipation

May be permanently overcome by proper personal efforts with the assistance of the one truly beneficial laxative remedy, Syrup of Figs and Elixir of Senna, which enables one to form regular habits daily so that assistance to nature may be gradually dispensed with when no longer needed as the best of remedies, when required, are to assist nature and not to supplant the natural functions, which must depend ultimately upon proper nourishment, proper efforts, and right living generally. To get its beneficial effects, always buy the genuine

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INFANTS—CHILDREN
Promotes Digestion, Cheerfulness and Rest. Contains neither Opium, Morphine nor Mineral NOT NARCOTIC.
Recipe of Old Dr. SAMUEL HUTCHER
Pumpkin Seed -
Licorice -
Sulphate of Soda -
Cinnamon -
Syrup of Marshmallows -
Clarified Sugar
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A Perfect Remedy for Constipation, Sour Stomach, Diarrhoea, Worms, Convulsions, Feverishness and LOSS OF SLEEP

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NEW YORK.

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33 Doses - 35 CENTS
Guaranteed under the Food and Drug Act
Exact Copy of Wrapper.

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The Kind You Have Always Bought Bears the Signature of
Chas. H. Hutcher
In Use For Over Thirty Years
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Capsicum-Vaseline.
EXTRACT OF THE CAYENNE PEPPER PLANT TAKEN DIRECTLY IN VASELINE

DON'T WAIT TILL THE PAIN COMES—KEEP A TUBE HANDY

A QUICK, SURE, SAFE AND ALWAYS READY CURE FOR PAIN—PRICE 15c.—IN COLLAPSIBLE TUBES MADE OF PURE TIN—AT ALL DRUGGISTS AND DEALERS, OR BY MAIL ON RECEIPT OF 15c. IN POSTAGE STAMPS.

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