

For parks and other large, open areas where plants need to be protected, the spent hops may solve an important problem, but in your own garden, you will probably want to continue using leaves

or straw. The hops have a disagreeable odor which gradually disappears in large open areas, but might be less attractive in a small, compact home garden.

Science News Letter, January 17, 1948

PLANT PATHOLOGY

Test for Plant Diseases

A brilliant red color develops when certain virus-infected leaves are treated with an alkaline solution. May also prove useful as tool for study.

► A QUICK chemical test for some virus diseases of plants has been developed by Dr. R. C. Lindner, plant pathologist of the State College of Washington, at the Tree Fruit Branch Experiment Station at Wenatchee.

The test depends on a brilliant red coloration that develops when certain virus-infected peach or sweet cherry leaves are treated with an alkaline solution.

The test should be of great aid in establishing virus-free sources of plant material for propagation purposes, Dr. Lindner points out in his report to the journal, *Science* (Jan. 2).

It should give material aid in diagnosing some cases where symptoms are few and not typical, and might also be useful as a tool for study.

Ring spot, mottle leaf, rasp leaf, rusty mottle, twisted leaf and little cherry diseases of sweet cherry trees and cherry rusty mottle, western X-disease and little peach diseases of peach trees have been detected by the test.

Virus diseases of apples, apricots, raspberries, strawberries and blueberries can probably also be detected by the test.

To make the test, a disk is punched out of the middle of a leaf with an ordinary paper punch. The leaf disk is put in a test tube with a solution of sodium hydroxide, copper sulfate and sodium citrate. The tube is heated in a boiling water bath for five to 10 minutes, allowed to cool for 10 minutes and then shaken thoroughly. Normal leaves give a blue-green color, those from plants infected with certain viruses give a red color of varying intensities. The differences can be detected by the eye alone, but for accurate work, they are measured in a photoelectric colorimeter.

The chemical that gives the color has not yet been identified but is believed to be a tannin.

Girdling is the only factor known at

present to interfere with the test. Leaves from a girdled branch of virus-free trees give a red color like that of virus-infected leaves.

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TECHNOLOGY

New Machine Washes Eggs Quickly without Injury

► THE 500-bird poultry farmer, or the big poultry man, need no longer wash his eggs by hand. A new machine developed in Ithaca, N. Y., under the direction of Prof. Forrest B. Wright of Cornell University, will do the job five times as fast and without any injury to the eggs.

In the new machine, which in ap-

pearance resembles a horizontal cylinder some three feet long, the eggs are passed in a continuous stream and are flushed for 22 seconds in hot water at a temperature of from 165 to 170 degrees Fahrenheit. The water is supplied through a perforated pipe which extends out over revolving, abrasive-coated, cloth disks. The hot water softens the dirt; the scouring action of the disks removes it. The debris is carried away with the waste water.

The eggs are held against the pressure of the disks by two plastic rollers. These rollers also spin the eggs, causing them to turn on their short axes so that the ends of the eggs are cleaned as well as the rest.

The exposure of the eggs to the hot water for the short interval of 22 seconds has no effect on the matter inside the shell. After washing, the eggs are rolled over toweling to remove moisture, then quickly dried in a blast of hot air.

Dirty eggs washed in cold water will not keep as well as unwashed eggs, but those washed in this machine will keep in storage better than dirty eggs cleaned by any other method tested by the college. The machine removes very little of the natural "bloom" from the egg shells, and it can handle thin-shelled eggs without breakage.

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EGG WASHER—Without damaging even thin-shelled eggs, this new machine can clean a continuous stream of eggs. Hot water, supplied through a perforated pipe, softens the dirt, the scouring action of the cloth disks removes it and the debris is carried away with the waste water.