

## Among the Orchards of the Northwest

A Page of Interesting Advice and Information About Fruits, Large and Small.

To determine the proper time to spray is made easier if you make proper observations. The spraying must be done at the right time to be effective. This article tells you how to make it effective and certain.

By E. F. STEPHENS.

**I**N SPRAYING apples for the codling moth it is a convenience to know definitely the time adult moths emerge from the chrysalides. When this is known, then the spraying can be done at exactly the right time to be most effective. To encourage more certain methods in fighting the codling moth, by finding out the exact date the adults appear, Prof. T. H. Parks, of Idaho, is distributing codling moth cages, and in return asks orchardists to carefully watch and make note of the date the first and the last codling moth emerges. Each orchardist can make a cage for himself.

The material used is common window screen wire, and a convenient size for the cage is eight inches in diameter by twelve or fifteen inches in length. In these cages place the larvae of the codling moth, also place leaves or a bit of cloth cover for shelter, and, when the moth has actually emerged, it would be well to add twigs of apple bloom.

### Secure Average Temperature.

Place the cages in such position in the orchards as to give an average temperature. It is well to throw weeds over the cage to partially hide it, lessening the power of the sun. Since ten cents' worth of material will make a cage, it is well to have two or three of them placed under varied conditions. The writer places three different cages in varying conditions in the orchard.

As the larvae of the codling moth emerges from an apple in late fall, it seeks a place to winter with safety, wintering as larvae or worms. These larvae may winter under a bit of rough bark on the trunk of a tree or in any similar shelter. They are usually abundant about packing houses. As the larvae seeks shelter, it weaves over itself a thin web. Here it reposes until springtime.

The next step depends on the character of the season and on the earliness with which its place of concealment may warm up. Depending on the character of the shelter, the date of pupation may vary fifteen to sixty days, or more. The next step is for the larvae to change to the pupae form, called pupating. In cool weather it remains in this form for twenty-one days; in the heated summer a less time, and then emerges as a codling moth.

### Before Calyx Closes.

The codling moth, male and female, flies at night and mates. Within about four days of the emergence of the moth, egg laying commences. Each female moth is reported to deposit from one hundred and fifty to two hundred eggs. These eggs hatch in eight or ten days. B. F. Hurst, who has given very careful study to the habits of the codling moth in Idaho, reports that the larvae may feed one to two days on the foliage before entering the apple. Some observers report that, of the first brood or while the apple is yet very small, 80 per cent of the larvae may enter the apple through the calyx. A special effort should be made to deposit some form of poison, preferably arsenate of lead, in the calyx before the calyx closes. This poison lodged within the calyx may poison not only

the larvae of the first, but some of the second brood, since the poison remains in position to intercept the larvae whenever it does enter.

### Eggs on Leaves.

A skillful orchardist does not spray until after pollination has taken place and the major portion of the petals have fallen. In the Yakima district in a favorable season, the rule is to begin to spray when eight-tenths of the petals have fallen. After the petals fall there is usually five to seven days' time in which to spray before the calyx closes so tightly as to prevent the lodgment of the poisonous spray. This first calyx spray should be with high pressure, aiming to force the liquid into the portion of the calyx cup. Since the eggs of the codling moth have not yet been deposited and may not be deposited for some weeks after this spraying, the object of this first spray is to securely lodge this poisonous liquid in the calyx of each apple on the tree.

Careful observers, like Mr. Hurst, note that most of the eggs of the codling moth are deposited on the leaves, and that the young larvae may feed a little on the leaf before seeking the apple. This gives an opportunity to intercept the larvae by the second spray, which this time should be a fine mist, coating the under and upper sides of the leaf.

### Moth Cage Is Aid.

To determine the best time for the second spray is the object of the moth cage, the careful observation of which ascertains when the moth will be ready to lay eggs and thus determine the time for the second spray, which should coat the leaves just in advance of the laying of the eggs.

On the other hand the time of the first spraying is determined by and must be before the calyx closes. White Winter Pearmain blooms earlier than Jonathan or Winesap, Rome Beauty and Rawles' Janet later than either, making a period of ten days or more between the earliest and latest closing of the calyx.

If the season is favorable without loss by frost, spray when eight-tenths of the bloom has fallen. If, on the other hand, the season has been unfavorable, and the early bloom has been destroyed, and the crop is dependent on the later bloom, then do not spray until the latest bloom has shed its petals. The orchardist, therefore, will carefully study his own bloom, and will spray with reference to that particular portion of the bloom which in his case will set fruit. This varies with varieties.

### Study of Trees.

To determine when to spray against the second brood, about the first of June place burlap bands about the trunks of the older trees, preferably in some old orchard, or in some orchard sadly infested with worms. Under these band traps the larvae of the first brood will hide to transform into adults. Place a goodly number of these worms in the moth cage, study their development, and spray for the second brood when the moths are ready to lay eggs. In the Boise basin that would quite likely be in the neighborhood of the first of July. Since the broods overlap, it might be necessary to spray again in the early days of August. Careful observers believe that in the Snake River and the Boise Valleys we have first and second broods only, but that these broods overlap and may continue their work even in September.

By studying trees that are old and young and pruned in different methods, it will be found that in your orchards that are allowed a large amount

of wood more fruit buds will set at the age of four, five or six years than orchards pruned for large good growth. If a four or five-year-old tree has comparatively few fruit buds, it will bloom within a period of a very few days, but if a tree, whether old or young, has an excessive number of fruit buds, then that tree will continue to come into bloom for a period of twelve to fourteen days. In case of an unfavorable spring with frost periods, the tree having the greatest abundance of bloom and blooming for the longest period of time would be the tree most likely to set crop of fruit in a frosty spring, an item of great importance, particularly in the handling of young orchards.

## Points on Pigs

**F**EEDING and care are as important as the breeding in producing a good hog. Plenty of feed and good care may make a good hog out of a runt, but lack of it will always make a runt out of a good pig.

To make pork cheaply a permanent pasture and forage crops must be used. Young pigs must have a dry bed and plenty of sunshine.

Begin feeding the pig as soon as he will eat, and keep him growing until he is mature.

Always keep plenty of clean, fresh water where the hogs may drink any time.

Quarantine all newly purchased animals for three weeks.

Never keep a female for a brood sow, no matter how well bred she may be, if she will not produce more than four strong pigs at a litter.

The more milk a sow will give the faster her pigs will grow.

Lice prevent a hog from doing well. Always keep a mixture of charcoal, wood ashes, lime, sulphur, salt and copers before the hogs.

### Final Plans For Water System.

What is believed to be the last hitch in the building of the Chehalis gravity water system was straightened out when arrangements were completed for running the Chehalis pipe across the Centralia intake site.

Four buffalo calves have just been born in the Wichita national forest, bringing the herd up to 51.

### 22,000 Rainbow Trout Planted.

Twenty-two thousand rainbow trout, ranging from a half-inch to an inch in length were planted in the trout streams of Lewis county, Wash., by Game Warden Norton Wynn and his deputies. The trout were brought from the state fish hatchery in Seattle and upon arrival were divided into three equal lots. One bunch was freed in Lincoln Creek, the second was turned out on the south fork of the Newaukum, while the third was taken to Dunn Creek, between Dryad and Doty, this creek being a tributary to the south fork of the Chehalis River. The streams in which the trout were planted will be closed to fishing for a term of two years.

### Plan For Fair in Chehalis County.

The Chehalis county fair will be held at Elma, Wash., September 23-27, according to an announcement by George Simpson, president of the fair association. This is earlier than usual, the fair having always previously been held in October. The premium list will be issued in July.

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