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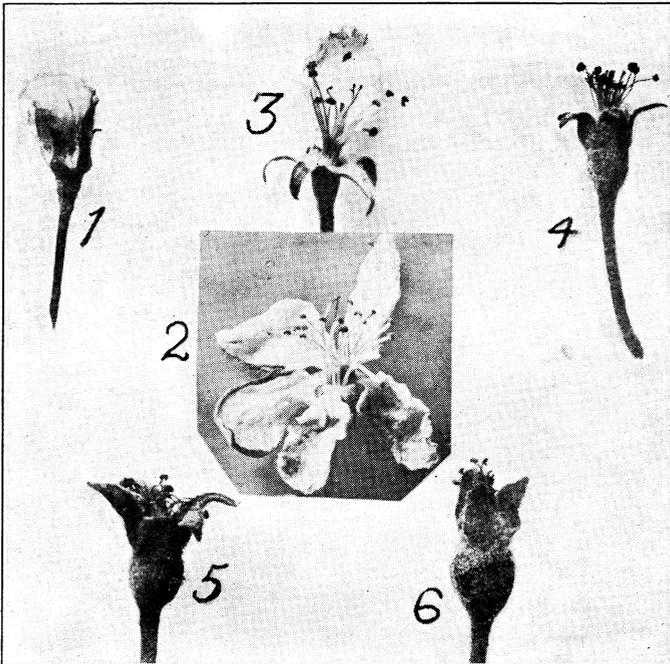
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SPRAYING APPLE TREES

SPRAYING APPLE TREES

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Apple flowers in different stages of development. Figure 1 shows when to make the first spraying, and figures 3 and 4 when to make the second spraying. The stage shown in figure 2 is somewhat early and that in figure 5 somewhat late for the second spraying, while at the stage shown in figure 6 no poison can be forced into the calyx cup.

MIXING THE SPRAY.

The degree of success in spraying depends almost wholly upon when the materials are put on and how they are applied. The two principal pests that concern Nebraska apple growers are the apple scab and the codling moth worm. There are other injurious insects and fungous diseases common to the orchard, but if the orchard is properly treated for those two the others will in a large measure be controlled.

The life histories of the apple scab and codling moth are so well known that fairly definite directions can be given for fighting them. The scab is a fungous disease that develops upon the flowers, leaves, and fruits of many of our best varieties under favorable weather conditions. If flowering time is accompanied by a few days of cloudy, damp weather, there is apt to be a great dropping of the young fruits later, due to this disease working upon the young flower stems. In addition to this loss, the remaining fruits are apt to be rendered unfit for the market by the time they reach maturity. Scab has been unusually scarce in Nebraska the past two seasons, on account of the weather being unfavorable for its development. These seasons have been exceptions rather than the rule, and growers should not abandon their fungicide sprays, thinking they are of no use.

There are two materials that may be used to control apple scab,—Bordeaux mixture and commercial lime-sulfur solution. One is equally as effective as the other in controlling this disease. Lime-sulfur is somewhat more convenient to use in that no mixing devices are required for making it; and there is not so much danger in russetting certain varieties like Ben Davis and Jonathan. Most commercial brands of lime-sulfur test 32 or 33 degrees Baumé. When they are put up in this strength they should be diluted about 30 to 35 times with water before being used as a spray for apples when the leaves are on. Bordeaux mixture can be made by using fresh stone lime, copper sulfate (bluestone), and water. The ordinary formula used in making Bordeaux mixture is—

4 pounds copper sulfate;
4 pounds stone lime;
50 gallons water.

To make it, slack the lime in a little water and dissolve the copper sulfate separately in warm water. Dilute each of these to 25 gallons and pour them together. A fine strainer should be used to keep the coarse particles of lime out of the sprayer.

Lead arsenate, dissolved at the rate of 2 pounds to 50 gallons of spray material, is recommended for controlling the codling moth worm. It may be used with the Bordeaux mixture or lime-sulfur, in the second and third applications.

SPRAYING CALENDAR.

First Spraying—After the cluster buds of the apples open, but before the individual flowers expand, use lime-sulfur or Bordeaux mixture. (See figure 1.)

Second Spraying—For effective work, this application must be made between the time the flowers begin to drop and the time the calyx lobes close. (See figures 3 and 4.) Use the same material that was used for the first application plus two pounds of lead arsenate for each fifty gallons.

Third Spraying—This application should be made three weeks after the second, using the same materials.

Fourth Spraying—This application is primarily for the second brood of worms, and should consist of lead arsenate and water,—two pounds to fifty gallons. It should be applied about the 15th or the 20th of July.

METHOD OF APPLICATION.

The first spraying should be done in a thoro manner. Use a fine mist spray and cover every part of the tree, paying particular attention to getting the material into the flower clusters. Owing to the absence of much foliage, this is the best time to drench all parts of the trunk and large branches. Merely fogging the tree from the windward side, letting the mist float thru, is not spraying. Direct the spray from every angle, being careful not to continue in one place until it drips.

The second spraying is the most important one of the four. The principal object of this application is to get the poison into the calyx cups before they close, at the same time covering the fruits and leaves with the fungicide. In order to do this, use high pressure and direct the spray downward as much as possible. Use a type of nozzle that throws a coarse spray for this application. Most nozzles have disks with different sized holes accompanying them. The coarseness of the spray increases with the size of the hole.

The third and fourth sprayings should be applied as fine mists.

A well-pruned tree makes a good job of spraying easier, and the actual amount of material needed is much less.

An average sized apple tree, 18 or 20 years old, will require about 15 gallons of spray material for the four applications. Of these four sprayings, three contain the fungicide, and three the lead arsenate. One hundred trees 18 or 20 years old will require about 50 pounds of lead arsenate and 35 gallons of concentrated lime-sulfur. In case Bordeaux mixture is used, 90 pounds of lime and 90 pounds of bluestone will be needed.