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# UNIVERSITY OF KENTUCKY

## COLLEGE OF AGRICULTURE

### Extension Division

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## APPLE SPRAY SCHEDULE

This schedule is for the average commercial orchard. The important sprays are starred (*). To assist the home orchardist who is not able to put on a full spray program, the most important sprays are starred twice. These are often adequate for a small, isolated orchard, but it should not be expected that the use of these only will give the best control of pests.

**Dormant spray.** If San Jose scale infestation is moderate to heavy, an oil spray should be used and the concentration increased to 3 percent.

**Scab sprays.** If wet weather prevails during the green tip stage the complete schedule of scab sprays should be followed. If dry weather prevails during the first part of the scab season, a spray need not be applied until after a moderately heavy rain has given the spores a chance to mature.

**Codling moth.** In most commercial orchards of Kentucky, the sprays indicated by a star, or stars, should give satisfactory control. Orchards which have a heavy infestation may need more sprays than this schedule indicates and special instruction should be obtained from the College of Agriculture. Sanitary measures in addition to spraying should be taken in all large orchards to prevent the building up of a large population of codling moths. These include scraping the rough bark from the trunks and limbs during the winter and burning it; use of chemically treated bands applied before June 1; hand picking and destroying wormy apples in June, and again in late July and early August; screening packing sheds.

## SPRAY SCHEDULE

**1. **Dormant season.** Use tank-mixed oil emulsion (see page 4) or liquid lime-sulfur, 12½ gallons to 100 gallons of water; or dry lime-sulfur, 30 pounds to 100 gallons of water.

*2. **Green-tip stage. When the tips of the flower buds are exposed,** use liquid lime-sulfur, 2½ gallons to 100 gallons or dry lime-sulfur, 10 pounds to 100 gallons.

3. **Pre-pink,** before the clusters separate. Same material as No. 2. Usually an important spray.

**4. **Pink,** when bud clusters have separated, the pink showing full. Use same material as sprays Nos. 2 and 3. Do not omit. Sprays 2 to 4 are recommended for scab during a rainy blooming period. Watch weather predictions. If the blooming period is dry and warm, the sprays may be reduced accordingly.

5. **Full-bloom spray,** when 1/3 of the blooms are open. For varieties that blight. Use weak bordeaux mixture (2-6-100) 2 pounds bluestone, 6 pounds of chemical hydrated lime, to 100 gallons of water. **Do not use lead arsenate** in this spray. This spray is beneficial on such varieties as Transparent, King David, Grimes Golden, Jonathan, Maiden Blush, Polly Eades, Red June, Wealthy, Hagloe and other varieties that are known to be susceptible to blight. It also helps to control scab.

**6. ***Petal-Fall Calyx spray.*** Decrease the strength of the lime-sulfur. Use 1½ gallons of liquid lime-sulfur or 6 pounds of dry lime-sulfur, 3 pounds of lead arsenate, and 3 pounds of hydrated lime, to 100 gallons of water.

*7. **One week after petal fall,** use 3 pounds of lead arsenate, and 3 pounds of hydrated lime, to 100 gallons of water.

**8. **Two weeks after petal fall.** For scab, codling moth, King David spot and blotch. Use 1½ gallons liquid lime-sulfur or 8 pounds of dry lime-sulfur, 4 pounds of lead arsenate and 4 pounds hydrated lime to 100 gallons of water. For varieties susceptible to blotch and King David spot use bordeaux mixture 6-8-100 and 4 pounds lead arsenate. If the weather is cool, lime-sulfur is preferred to bordeaux.

*9. **Two weeks after spray No. 7.** Use 4 pounds of lead arsenate with 6-8-100 bordeaux mixture. Omit this spray on early varieties.

* Important sprays (see p. 1). ** Most important sprays.

**Bitter rot.** To keep bitter rot in check a bordeaux spray should be made in all orchards about the first of July. Growers who have had losses from bitter rot should apply a bordeaux spray about the middle of June, and at two-week intervals, until four sprays have been applied. They should be alert to observe the first appearance of the disease. Hand-pick and destroy all rotted fruit and search for over-wintering sources, such as old fruit stems, mummied fruits and dead wood. The source usually may be found directly above the first rotting fruits, and should be removed.

### TANK-MIXED OIL EMULSION

USE LUBRICATING OIL, viscosity 125 to 200 seconds, Saybolt, at 100° F.; volatility less than 2 percent. This oil is sold at bulk stations under such names as "agricultural spray oil," "orchard spray oil," "scale oil," at about 20 cents a gallon.

| For Hand Pumps | | For Power Pump | |
|---|---|---|---|
| Oil | 1 gal. | Oil | 2 gal. |
| Calcium caseinate | 5 ozs. | Calcium caseinate | 6 ozs. |
| Water to make | 50 gals. | Water to make | 100 gals. |

1. Mix the calcium caseinate in a bucket with ½ pint of water, making a thick paste. Gradually dilute until the bucket is full. This step is important.

2. Put the calcium caseinate mixture into the spray tank and add just enough water to operate the pump.

3. Start pumping and allow discharge from the open spray rod to flow back into the tank under full pressure.

4. Add the oil, continuing agitation, and pump for a few minutes; then fill the tank with water. Apply spray immediately.

Power spray pumps are more satisfactory than hand pumps for making tank-mixed emulsions. The procedure is the same, but less calcium caseinate is needed.