



Stages for First Application.

Stage for Second Application.

Stage for Third Application.

### Formulae for Insecticides.

#### Insecticides for Biting and Lapping Insects.

##### 1.—ARSENATE OF LEAD PASTE.

Use 2 to 3 lbs. to 40 gals. of water, or of lime-sulphur or of Bordeaux mixture.

##### 2.—ARSENATE OF LEAD POWDER.

Use 1 to 1½ lbs. to 40 gals. of water, or of lime-sulphur or of Bordeaux mixture. The powder form of arsenate of lead is twice as strong as the paste form.

##### 3.—ARSENATE OF LIME (Calcium arsenate).

Use ¾ to 1 lb. if in powder form to 40 gals. of Bordeaux mixture. Double the amount if in paste form. (There is some doubt yet whether this poison is always safe with lime-sulphur. It is not safe alone.)

##### 4.—PARIS GREEN.

Use ¼ to ½ lb. with 40 gals. of Bordeaux mixture. (This poison is not safe with lime-sulphur).

#### Insecticides for Sucking Insects Only.

##### 1.—LIME-SULPHUR.

For scale insects, Blister Mites and Red Spider.

##### 2.—TOBACCO EXTRACTS.

For Aphids, Leaf-Hoppers, Psyllas, etc.

(a) BLACK-LEAF 40, strength to use is indicated on the cans.

(b) NICOTINE-SULPHATE 40%. Strength is indicated on the cans. (Practically same as Black Leaf 40).

(c) HOME-MADE EXTRACT. Soak 1 lb. tobacco refuse in 1 gal. water for 24 hrs. with occasional stirring, or steep 1 lb. in 1 gal. water for 1 hr. Make up for water that evaporates. Use at once without dilution; spoils in a few days if not used.

##### 3.—KEROSENE EMULSION.

Kerosene (coal oil).....2 gals.

Rain water.....1 gal.

Soap.....½ lb.

Dissolve the soap in water by slicing and boiling; take from fire, and while hot pour in kerosene and churn vigorously for five minutes. For use dilute with 9 parts of water, so that the above 3 gals. of stock emulsion will make 30 gals. of spray mixture.

##### 4.—WHALE-OIL SOAP.

For brown or black aphids, 1 lb. in 4 gals. rain water. For green aphids, thrip and leaf-hopper, 1 lb. in 6 gals. rain water.

### Formulae for Fungicides.

##### 1.—BORDEAUX MIXTURE.

Copper Sulphate (Bluestone).....4 lbs.

Unslaked Lime.....4 lbs.

Water.....40 gals.

Dissolve the copper sulphate in a wooden or brass vessel with hot water, pour into a barrel and add cold water to make 20 gals.; slake the lime, preferably with hot water; add cold water to make 20 gals. Stir both barrels well and pour lime into the copper sulphate barrel. (Never mix concentrated milk of lime and copper sulphate solutions).

A stock solution of each may be made and kept indefinitely if not mixed.—Dissolve 40 lbs. copper sulphate in 40 gals. of water by suspending just below the surface of the water in a coarse sack. Each gallon of the liquid will now contain 1 lb. copper sulphate. Slake any desired quantity of lime and put into a box or barrel in shaded place, or sunk in the ground. Keep covered with small amount of water to exclude the air. Calculate how much is required for 4 lbs. lime if well stirred. Hydrated lime may be used but requires about 6 lbs. instead of 4.

To test Bordeaux mixture, let a drop of ferro-cyanide of potassium solution fall into a little of the mixture in a saucer. If this causes it to turn reddish brown, add more lime until no change takes place.

##### II.—LIME SULPHUR WASH.

1.—HOME BOILED (for use on dormant wood only):

Fresh stone lime.....20 lbs.

Sulphur (flour or flowers).....15 lbs.

Water.....40 gals.

Slake 20 lbs. of lime in about 15 gals. or more of boiling water in a kettle or other boiling outfit. While slaking add the 15 lbs. sulphur made into

paste by the addition of a little water. Boil vigorously, with stirring, for 1 hour. Dilute to 40 gals. with cold or hot water. Strain and apply at once.

##### 2.—COMMERCIAL LIME-SULPHUR. (Factory-made concentrated lime-sulphur).

This as purchased is usually about 1.200 specific gravity strength or 33 degrees Beaume.

##### 3.—HOMEMADE CONCENTRATED LIME-SULPHUR.—This may be used as a substitute for commercial lime-sulphur, but is only about two-thirds as strong as a rule.

Sulphur (a fine grade).....100 lbs.

Fresh stone lime, high in percentage

of calcium.....50 gals.

Water.....40 or 50 gals.

Put about 10 gals. water in the boiling outfit, start fire, add sulphur, stir to make paste and break lumps, then add remaining water, and when near boiling put in lime. Stir frequently while slaking and until all the sulphur and lime are dissolved. Add water from time to time to keep up to 40 or 50-gal. mark. Boil 1 hour, then strain through a screen of 20 meshes to inch into storage barrels. Make enough at once for season's work. Cover well to keep out air, or pour oil of any kind over surface to depth of ½ inch for same purpose.

To determine how much to dilute for different applications use a hydrometer with specific gravity readings, and apply the following rule:

Put the hydrometer in the clear liquid when it is cold and the sediment has all been settled for a day or two. Note the number to which it sinks. Suppose this is 1:240: The strength for use before the buds burst should be 1:030 or stronger. To determine how much to dilute a strength of 1:240 to get 1:030, divide the three figures to the right in 1:240 by 30, that is 240 divided by 30=8. This means that each gallon of such a wash must be diluted to 8 gals. with water to give us a strength of 1:030, the proper spring strength. For the second application 1:009 is about the right strength. To get it divide the 240 by 9, which gives 26⅔, or roughly speaking 27. This means that each gallon of a wash of the strength of 1:240 must be diluted to 26⅔ or 27 gals. to make the right strength for the second application. For the third application and any later ones 1:008 is about the right strength, and to get this we proceed in the same way and divide 240 by 8=30, so that each gallon must be diluted to 30 with water for this application. If the strength of the concentrated were 1:212 or any other number, you would in the same way divide the three figures to the right by 30, 9 and 8, respectively to get the proper dilutions for each spraying.

TABLE FOR CHANGING BEAUME READINGS INTO THEIR EQUIVALENT SPECIFIC GRAVITY READINGS.

Beaume.	Specific Gravity.	Beaume.	Specific Gravity.
18	= 1:141	27	= 1:230
19	= 1:150	28	= 1:240
20	= 1:159	29	= 1:250
21	= 1:168	30	= 1:260
22	= 1:178	31	= 1:271
23	= 1:188	32	= 1:282
24	= 1:198	33	= 1:293
25	= 1:208	34	= 1:305
26	= 1:219	35	= 1:317

Note.—Commercial lime-sulphur should be tested with the hydrometer and diluted according to the same rules as the homemade concentrated form.

##### 4.—SELF-BOILED (chiefly for use on peach foliage).

Fresh stone lime.....8 lbs.

Sulphur (flour or flowers).....8 lbs.

Water.....40 gals.

Best prepared in quantities of 24 lbs. at a time to get sufficient heat. Place 24 lbs. lime in a half barrel, add enough cold water to start it slaking well and to keep the sulphur off the bottom. Dust the 24 lbs. sulphur over the lime, having first worked the sulphur through a screen to break lumps, then add whatever further amount of water is necessary to complete the slaking. Stir well with a hoe to prevent the lime caking on the bottom. As soon as the slaking is over, add enough cold water to cool the whole mass and prevent further combination. Strain into spray tank. Keep well agitated while spraying.

##### 5.—DUST.

For biting insects and fungous diseases the substances used now are 85 to 90% of sulphur and 10 to 15% of arsenate of lead powder. Dusting at date (1918) is still in the experimental stage.

##### III.—DISINFECTANTS (for pruning tools and for wounds on trees).—

1.—Corrosive sublimate, 1 part to 1,000 by weight = 1 tablet to 1 pint of water. Apply with a swab on end of a stick.

Caution.—Corrosive sublimate is a deadly poison to man or beast if taken internally. It will also corrode iron or metal, so use in a glass or wooden vessel and be sure to wash these out very thoroughly when through using them.

2.—Lime-sulphur about twice spring strength, or bluestone, 1 lb. dissolved in about 14 gals. water, may be used to disinfect wounds or cankers, but is not satisfactory in case of Pear Blight.

## FARM BULLETIN.

### Record Board Holds Annual Meeting.

At the annual meeting of the Record Board, held in Toronto on Friday, April 5, some plain speaking was indulged in. The Chairman, William Smith, M. P., Columbus, in his address expressed the opinion that the increase in railway tariffs, suggested by the Railway Board and sanctioned by the Government, was not a permanent solution of the matter. It was simply a way out of the difficulty. Mr. Smith also brought to the attention of the meeting that, in 1915, George Pepper, Toronto, had been engaged by the Government to assist the Department of Agriculture in certain matters pertaining to transportation, etc. Mr. Pepper, he said, had gleaned some startling information from various sources, but now for some unknown reason his services have been dispensed with by the Government. The speaker said that he thought Mr. Crerar, the newly-appointed Minister of Agriculture, had made a mistake when he dispensed with Mr. Pepper's services on the Department, and, were it not for war conditions and the shadows which darkened the doors of so many homes, "it seems to me that Mr. Crerar and the Dominion Government should be given to understand that there is such a class of people in Canada as the Canadian farmer." In regard to the live stock interests, Mr. Smith said that the receipts at the Record Office indicated a prosperous state of affairs. During the months of January, February and March, of 1918, the receipts showed an increase of \$6,270.78 over those of a like period of 1917.

Peter White, K. C., Toronto, explained their efforts in the attempt to block the increase in freight rates, and expressed the opinion that the increase would be ineffective. Other speakers who discussed matters pertaining to transportation and live stock interests were: George Pepper, Toronto; Robt. Miller, Stouffville; and H. S. Arkell, Dominion Live Stock Commissioner. In view of the fact that the Estimates then before the House showed a decrease of twenty-five per cent. in grants to fairs, the following resolution was carried unanimously: "That the Record Board here assembled view with alarm any disposition on the part of the Government or any other organization to discourage the holding of fairs, either through the diminution of grants or otherwise."

The entire Record Committee was re-elected for 1918, the Committee is made up as follows: Wm. Smith, M. P., Columbus, Chairman; Peter White, K. C., Toronto, Representing Heavy Horses; W. F. Stephen, Huntingdon, Que., Dairy Cattle; Robert Miller, Stouffville, Beef Cattle; Robert Ness, Howick, Que., Light Horses; J. M. Gardhouse, Weston, Sheep; J. E. Brethour, Burford, Swine; Jno. W. Brant, Ottawa, Secretary-Treasurer.

### No Change in R. O. P. Test.

Committees from the various dairy breed associations met in Toronto on Friday, April 5, to discuss the Record of Performance test. There has been some agitation to shorten the Record of Performance test to three hundred days, with a freshening limit of three hundred and ninety or four hundred days. The consensus of opinion was that the regulations now in force should remain. The arguments against any change were that in order to make a favorable showing against United

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