

Formulae for Insecticides.

I.—POISONS (for biting insects only).

1.—ARSENATE OF LEAD (paste).—2 or 3 lbs. to 40 gallons liquid spray; 3½ lbs. for potato beetles. Dry arsenate of lead requires only half these strengths.

2.—PARIS GREEN.—(a) 1½ to 1½ lb. to 40 gals.; 1 lb. for potato beetles. If used with water alone, add 1 or 2 lbs. fresh lime, (b) 1 lb. mixed with 50 lbs. land plaster, air-slaked lime or some similar substance, for dusting on plants.

N.B.—With Bordeaux, 1 or 2 above may be used; with lime-sulphur only 1; the other causes burning.

3.—POISON BRAN MIXTURE FOR GRASSHOPPERS:

Bran.....20 lbs.
Paris Green.....1 lb.
Molasses.....½ gallon
Water.....about 2 gallons.
Lemons.....2 or 3 fruits.

Mix thoroughly the bran and Paris green in any large receptacle the night before using. In morning squeeze the juice of the lemons into the water, run pulp and rind through a meat chopper, add this and also molasses to the water, stir well, then pour the liquid upon the poisoned bran, and mix so thoroughly that every part is moist and will fall like sawdust through the fingers. Apply in the morning between 5 and 7 o'clock by scattering so thinly over the infested field, fence corners and roadsides, that the above amount will cover 4 or 5 acres. Sometimes a second application about 3 days later is necessary. Use as soon as the pest is abundant. Do not look for results for 2 or 3 days. This mixture applied in the evening will also kill cutworms and armyworms.

4.—WHITE HELLEBORE.—One oz. to 1 gal. water, or dust undiluted over the plants. Hellebore left exposed to air is useless.

II.—CONTACT POISONS (chiefly for sucking insects).

1.—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.

2.—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.

3.—TOBACCO WATER.—Steep 1 lb. refuse tobacco in 1 gal. of water for 1 hour, make up for water that evaporates, or soak 1 lb. in 1 gal. water for 24 hours with occasional stirring.

4.—BLACK LEAF 40.—Directions on the cans. A little soap with it helps, but soap cannot be added if used with lime-sulphur.

5.—PYRETHRUM (or insect powder):

Pyrethrum Powder.....1 oz.
Water.....1 to 2 gals.

Dry mixture. Mix thoroughly 1 part by weight of pyrethrum with 4 of cheap flour, and keep in airtight vessel for 24 hours before dusting over plants. Note.—Pyrethrum is useless if left exposed to the air.

6.—LIME-SULPHUR WASH.

(See under fungicides.)

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.

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.—HOME-MADE CONCENTRATED LIME-SULPHUR.—This may be used as a substitute for commercial lime-sulphur, but is only about 2/3 as strong as a rule.

Sulphur (a fine grade).....100 lbs.
Fresh stone lime, high in percent-
age of calcium.....5 lbs.
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 1/8 inch for same purpose.

To determine how much to dilute for different applications use an 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 1:300 or stronger. To determine how much to dilute a strength of 1:240 to get 1:300, 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 1:300, the proper spring strength. For the second application 1:1000 is about the right strength. To get it divide the 240 by 9, which gives 26 2/3, or roughly speaking, 27. This means that each gallon of a wash of the strength of 1:240 must be diluted to 26 2/3 or 27 gals. to make the right strength for the second application. For the third application and any later ones 1:1008 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 home-made concentrated form.

3.—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.

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 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.

STICKER.

Resin.....2 lbs.
Sal Soda (crystals).....1 lb.
Water.....1 gal.

Boil together till a clear brown color, which takes from 1 to 1½ hours. Cook in an iron kettle in an open place. Add the above to 40 gallons Bordeaux for use on smooth foliage like onions, cabbages or asparagus. If used with a-senate of leyl or Paris green, add 1 or 2 lbs. of fresh lime to every 40 gallons of spray.

FARM BULLETIN.

Crescent Ridge Holsteins Sell Well.

The dispersal of the entire Crescent Ridge Holstein herd at the farm near Bright, Ontario, on Wednesday, March 21, was the fifth of a series of successful sales held in the County of Oxford during the past four or five weeks. The herd, owned by Jacob Leusler & Son, was one of the oldest in the Province. The 48 head catalogued included 13 mature cows, 24 heifers under two years, 11 bull calves, and the herd sire. The cows made an average of \$248.40, the heifers, \$184.00, and the bulls \$137. The herd sire, Correct Change, by Changeling Butter Boy, topped the sale at \$500. He went to the bid of L. H. Lipsitt, of Forest Ridge Farm, Strathroy. Johanna Fairmont Hengerveld was purchased by T. Wilcox, of Smithville, for \$450. Her two-weeks-old bull calf brought \$90. The stock was sold by auctioneer T. Merritt Moore. Following is a list of the animals which sold for \$100 and over, together with the names and addresses of their purchasers:

Correct Change, L. H. Lipsitt, Strathroy.....	\$500
Anniebelle Colantha, M. Lafret, Maidstone.....	215
Aaltje Lyons, W. W. George, Putnam.....	125
Anza Lyons, E. W. Nesbitt, Woodstock.....	245
Lyons Lady Zelle, S. Brubachir, Kitchener.....	200
Lady Zelle Lyons, J. McNee, Owen Sound.....	145
Lady Zelle Colantha, D. Ulch, South Woodslee.....	125
Lydia Korndyke De Kol 2nd, E. W. Nesbitt.....	300
Correct Change Korndyke, J. J. Waechter, Mildmay.....	155
Lyons Ruth Abbekerk, D. Ulch.....	145
Ruth Lyons, Jas. Liddle, Dundas.....	105
Hengerveld Gretqui, G. F. Saul, London Jct.....	205
Ruby Gretqui Changeling, Wm. Stock, Tavistock.....	125
Pussie Hengerveld Changeling, Wm. Stock.....	150
Flossie Hengerveld 2nd, Jas. McNee.....	190
Flossie Hengerveld Korndyke, E. Snyder, Burgessville.....	220
Samantha Hengerveld, J. McNee.....	215
Samantha Hengerveld Changeling, Wm. Stock.....	155
Colantha Tehee, D. Ulch.....	275
Colantha Changeling Tehee, C. Bollert, Tavistock.....	105
Johanna Korndyke Tehee, F. J. Firth, Maidstone.....	105
Inka Mercedes Tehee, A. E. Betzner, West Flamboro.....	240
Lyons Bena Tehee, J. McNee.....	190
Changeling Sir Inka, G. Kiest, New Dundee.....	115
Sir Changeling Colantha, J. Liddle.....	120
Inka Posch Hengerveld 3rd, T. Wilcox Smithville.....	385
Gretchin Favorit, D. Ulch.....	235
Gretchin Favorit Changeling, J. Liddle.....	165
Canary Bess Vale De Kol, R. J. Lambkin Paris.....	275
Vale Lyons, Norman Currah, Bright.....	220
Canary Lyons, Norman Currah.....	175
Bessie Changeling Vale De Kol, Norman Currah.....	145
Johanna Fairmount Hengerveld, T. Wilcox, Smithville.....	450
Ruby Lyons Johanna, F. J. Frith.....	105
Pontiac Atlas Mary Lyons, J. Liddle.....	165
Hesseltje Alice De Kol, S. Brubachir.....	100
Hesseltje Alice Lyons, Wm. Stock.....	205
Hesseltje Alice De Kol Lyons, J. Liddle.....	115
Alice Segis Lyons, H. Bollert.....	175
Alice Prilly Changeling, Wm. Stock.....	200
Belle Korndyke Crescent Ridge, J. McNee.....	160
Correct Change Ormsby, R. Bond, Richmond.....	105
Betsy Pauline Artis, R. J. Lambkin.....	275
Betsy Pauline Korndyke, J. McNee.....	160
Correct Change Johanna, N. Currah.....	170

The Big Tractor Demonstration.

We understand that arrangements have been made to hold a monster Tractor Farming Demonstration on a large farm near Toronto, September 18, 19, 20 and 21. The success of the last demonstration held on Robt. Fleming's farm last November and the increased interest in tractor farming warrants a continuance of these demonstrations. Last year, it is claimed, the demonstration was held too late in the year. Farmers want to see the tractors work before they do their fall plowing. This year the demonstration will, as the dates show, be held much earlier. Entries are pouring in already. There will also be a large exhibit of accessories.

Daniel Drummond Passes.

Daniel Drummond, for many years a leading breeder of Ayrshire cattle and later in charge of the Record of Performance work under the Live-Stock Commissioner, passed away in Ottawa, March 22, at the age of 60 years. He became an officer of the Department of Agriculture in 1900 and continued in charge of the R. O. P. work until the time of his death.