

This makes constant stirring necessary. Paris green does not dissolve in water, and is merely mixed with water to facilitate its even distribution on vegetation in the very small quantities that are necessary to destroy insects. The finer the poison is ground, the quicker its effect on the insects which eat it, because the minute crystals are more rapidly dissolved by the digestive juices in the stomachs of the insects. The finer it is ground, the better also it will remain suspended in a liquid application. For most insects, one ounce of Paris green in 10 gallons of water is the standard strength; but some plants with coarse foliage, such as the potato, will stand double that strength.

Adulteration of Paris Green.—The unsatisfactory results so frequently reported from the use of Paris green against cutworms and other pests is largely due to the frequent adulteration of this article. The following are some of the methods by which pure Paris green may be known:

It dissolves wholly and freely in ammonia, forming a beautiful blue liquid. All of the material which fails to dissolve represents so much crude matter which has been added as an adulterant. While this affords valid grounds for rejection of the article, it must be borne in mind that white arsenic and a number of other substances used in the adulteration of Paris green are also soluble in ammonia, hence the test is but a partial one.

Another test of purity is to take a small quantity of the green upon a slip of glass, holding it at such an angle as will cause it to slide. If it is pure it will leave a bright green streak on the glass; if adulterated, this streak would be pale in colour with light and darker shadings, due to the presence of such articles as arsenic, gypsum, flour and other foreign substances which the intense green hides from view, unless critical examination is made with a compound microscope, which will show the Paris green to consist entirely of green spheres. In case of adulteration, the green spheres are mixed with matter more or less white, of crystalline irregular shape, entirely foreign to the pure article and should be rejected, as likewise should all samples showing any tendency to dampness or caking.

Arsenate of Lead.—A poison which has come into much notice since the work of the Massachusetts Gypsy Moth Commission is Arsenate of Lead, which has been placed on the market in a very convenient form under the name of Bowker's Disparene and Swift's Arsenate of Lead. The chief advantages of Arsenate of Lead are that it can be applied to all kinds of foliage with less danger of injury than is the case with Paris green; and, on account of its fine state of division, it lasts longer on the foliage, because it does not wash off so easily. The cost of using it is about the same as that of Paris green, because, although cheaper, pound for pound, it is necessary to use three times the amount of it to get the same results. Arsenate of Lead may be made at home. Formulæ for its preparation vary slightly; but in the United States Division of Entomology, Bulletin No. 41, the following instructions are given for making the Arsenate of Lead wash ready for use:—

Arsenate of soda	10 ounces.
Acetate of lead.....	24 ..
Water	150 to 200 gallons.