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DEPARTMENT OF AGRICULTURE
ENTOMOLOGICAL BRANCH.

C. GORDON HEWITT, DOMINION ENTOMOLOGIST.



Crop Protection Leaflet No. 10.

ARSENATE OF LIME.

(Calcium Arsenate).

During the last few years the Entomological Branch has been devoting increased attention to the study of insecticide, with special reference to the possibility of securing cheaper materials. One of the first results of this study consisted in a demonstration of the value of arsenate of lime or calcium arsenate as an insecticide. On account of the low cost as compared with the cost of other widely used insecticides, its use is highly desirable for many purposes at the present time. Its value has also been recognized for the same reason in the United States.

At the present time arsenate of lime, which should be clearly distinguished from arsenite of lime, is only recommended as a spray for apple, potato and pear; it is not regarded as a safe insecticide for trees having tender foliage such as plum, cherry or peach. Nor do we recommend the use of arsenate of lime alone, but only in conjunction with lime, Bordeaux mixture, or sulphide sprays as described later. During the years 1915, 1916 and 1917 it has been used in Nova Scotia both commercially and experimentally in a variety of ways. Although the results from its use have not been uniformly satisfactory, this could not be expected on account of the lack of knowledge concerning the material. Nevertheless the satisfaction following its use has been such that orders for arsenate of lime in Nova Scotia in 1918 have exceeded those of all previous years combined; in fact, the orders for arsenate of lime in the Annapolis Valley exceed those for all other arsenical insecticides combined.

In discussing this poison it must be understood that unless otherwise stated we refer to the commercial dry material containing 40 per cent arsenic oxide in the form of tri-calcium arsenate and less than 1 per cent soluble arsenic, and so powdered that one pound of the dry material occupies eighty cubic inches. Although originally intended for use with Bordeaux mixture it was soon found, after the material had been introduced, to be the only poison that could be used safely with sulphide sprays, that is without being responsible for unsatisfactory results such as injury to foliage or the formation of undesirable chemical combinations.

The action of Arsenate of Lime on foliage when used alone.

Many growers and investigators have used arsenate of lime alone, usually with disastrous results. The properties of this material are such that, when it is used alone, it causes a yellowing and often a burning of the foliage. The yellowing is generally caused by the formation of soluble arsenical compounds, and burning results from either an excessive use of the insecticide or certain weather conditions which abnormally hasten the breaking up of the material and the liberation of soluble arsenical compounds. Injury from the use of arsenate of lead alone is usually slight at first,

* By George E. Sanders, Dominion Entomological Laboratory, Annapolis Royal, N.S.
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