

increasing with each successive day for a week or more. The use of arsenate of lime alone on foliage is not recommended, although it has been used in some cases successfully on potatoes.

Used in conjunction with lime no damage such as burning of the foliage need be apprehended.

### *The use of Arsenate of Lime with Lime.*

It has been found that where ten parts of either water-slaked or hydrated lime is used to one part of arsenate of lime, the material can be applied to apple and potato foliage without injury.

### *Arsenate of Lime compared with Arsenate of Lead when used with Lime-sulphur.*

The following comparisons of arsenate of lime and arsenate of lead with lime-sulphur may be drawn from three years experience with arsenate of lime in Nova Scotia: Arsenate of lime with lime-sulphur has invariably given slightly better results in the control of fungous diseases than arsenate of lead with lime-sulphur. This is very possibly due to the fact that upwards of 35 per cent of the sulphur may be precipitated in the latter composition. Arsenate of lime with lime-sulphur has, in all experiments in Nova Scotia, caused less leaf-burning or singeing than the arsenate of lead with lime-sulphur spray. This is on account of the larger quantity of soluble arsenic in the latter combination.

Arsenate of lime with lime-sulphur has caused noticeable yellowing of the leaves more often than the arsenate of lead with lime-sulphur combination. The underlying causes of the yellowing of the leaves would appear to vary and they are now being investigated. It may be noted, however, that only here and there an isolated grower reported yellowing from the third spray (that applied immediately after the blossoms), while possibly 5 per cent of those who used lime-sulphur with arsenate of lime for the fourth spray (the spray applied two weeks after the blossoms) reported yellowing.

The type of yellowing that is due to arsenical injury can be easily eliminated by adding either five pounds of water-slaked or hydrated lime to each 40 gallons of the lime-sulphur with arsenate of lime combination when used for the sprays after the blossoms. So far as our observations go, the addition of lime to the third spray (the spray immediately after the blossoms) is only necessary in orchards where the trees are subject to yellowing on account of the variety of apple or the treatment of the orchard. Lime sulphur is not advocated by us for the spray two weeks after the blossoms, but where it is used as a fungicide in that spray and arsenate of lime is added for a poison, it would seem advisable to add five pounds of water-slaked or hydrated lime to prevent the liberation of soluble arsenic and the yellowing of the leaves.

The trees sprayed with the arsenate of lime with lime-sulphur combination have in all the experiments carried on by us for three years given more apples than those sprayed with the lime-sulphur and arsenate of lead combination.

In poisoning value arsenic in the form of arsenate of lime (with lime sulphur) is fully equivalent to an equal quantity of arsenic in the form of arsenate of lead.

The arsenate of lime with lime-sulphur combination is much more easily and thoroughly agitated than the arsenate of lead with lime sulphur combination on account of its physical properties and freedom from lead sulphide or "sludge."

Arsenate of lime in its convenient powdered form may be more easily and accurately weighed and added to the spray, and it may also be stored more safely than paste arsenate of lead.

Arsenic in the form of arsenate of lime is less than 60 per cent of the price of arsenate of lead in the paste form according to the prices in Nova Scotia for 1918.