



Colorado State Flower Growers Association

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SELENIUM FOR SPIDER ON CARNATIONS by George Beach

Remember a few years ago, the excitement there was about sodium selenate and P-40? It was swell, but growers asked the Colorado Experiment Station, "How often will we have to apply it to keep on getting these good results?" So we started a study of selenium for spider control on carnations.

Would selenium in soil cause a stunting of carnation plants? Some thought it did - others as vigorously denied it.

And then came Parathion! Who cared a whoop now about selenium? But having an experiment in progress, we finished it and published the findings.*

There is evidence that Parathion penetrates the leaf tissue and that its killing action comes when the insect feeds on the poisoned tissue, rather than killing by fumigation as it was first thought to do.

Blauvelt at Cornell's 1950 Short Course told of a new compound he used against those spiders resistant to Parathion, that we have been reading about. This material (octomethyl phosphoramidate) can be used either as an aerosol or on the soil. Whichever way it is applied its killing action is as a stomach poison, since the material is absorbed in the tissue where spiders feed.

This, of course, is the same way selenium kills, so we are prompted to summarize our findings published elsewhere in detail*

*Proceedings of American Society for Horticultural Sciences 53:507 and also the forthcoming issue of same.

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We found that by using sodium selenate at 1/8 the rate recommended on the package and repeating this treatment each month for four months, we actually increased the flower production somewhat. The plots treated this way produced the same number of first grade flower as, and no greater numbers of thirds and splits than, untreated check plots. The increased yield came in flowers with 15 to 22 inch stems.

Our work on selenium in nutrient solution and reports of the work of others leads us to believe that carnation plants in soil with a sulfate test below 300 ppm. would be stunted by sodium selenate used at the recommended rate. Sulfur and selenium are taken up by plants rather indiscriminately. If abundant sulfur is present, less selenium is taken by the plant and vice versa. Hence, the same dosage of selenium on soils of differing sulfur content would result in greater selenium uptake by plants in some cases than in others.

A very little selenium in the tissue will give good spider control, but an over-dose of it will cause the plant to branch profusely and produce an over-abundance of weak and short stemmed flowers.