

compromises might at first appear to the technical man, a valuable survey can be made even in a complex situation that can form the basis of sound decisions for a total air pollution control program.

-- Authors' conclusions

- 1016 Injuries Caused to Fruit Trees by Fluorine-Containing Gases. E. Bovay. Landwirtsch. Jahrb. Schweiz 72, 541-544 (Nov. 1958). French.

Determinations were made of the fluorine and of the chlorine content of the leaves of various fruit trees growing in the vicinity of 2 factories. One factory produced aluminum and released a fluorine-containing gas while the other produced soda ash and released a gas containing chlorine. The aluminum factory was not in operation during 1957 and the fluorine content of the dried leaves barely reached 2.5 mg. %. The content during previous periods of injury had been higher than 10 mg./100 g. of dried leaf matter. No symptoms of burn were seen on the leaves of the fruit trees during 1957. Contrary to the findings on fluorine content, the chlorine concentrations during 1957 showed little change from the usual great variability. During 1957 this range was from 21.3 to 113.0 mg./100 g. The results lead to the conclusion that the damage to the fruit trees of the area was the result of the presence of the fluorine rather than the chlorine gas. This does not rule out the possibility of a synergistic action due to the simultaneous presence of the chlorine, but this would appear to be unlikely.

-- APCA Absts.

- 1017 Antiozonants to Protect Plants from Ozone Damage. S. Rich and G. S. Taylor. Science 132, 150-151 (July 15, 1960).

Manganous 1,2 naphthoquinone-2-oxime protected tomato foliage in the field from damage apparently caused by excessive atmospheric ozone. The compound proved to be a very effective antiozonant. The similar cobaltous and manganous chelates of 8-quinolinol were also effective antiozonants. The materials were applied to cloth of the type used to make field tents for shade-grown tobacco. Tomato plants covered with cloth treated with cobaltous-8-quinolinolate were protected against otherwise damaging concentrations of ozone. These materials and methods may afford a useful way to reduce weather fleck of the tobacco and other plant injuries caused by excessive atmospheric ozone.

-- Authors' abst.

- 1018 The Prevention of Air Pollution Damage to Plants by the Use of Vitamin C Sprays. H. T. Freebairn. J. Air Pollution Control Assn. 10, 314-317 (Aug. 1960).

The evidence presented by the author indicates fairly conclusively that vitamin C applied as a spray moved into the leaf cells of some plants and because of its presence increased the tolerance of the cells to the damaging agents in smog. The protection afforded by vitamin C in the laboratory from ozone and in the field from air pollutants implied that either ozone was a damaging agent in the field or that vitamin C was effective against other toxic agents in the field. Of course both possibilities could have been occurring together. It is interesting that in some instances complete protection was obtained, but in most of the cases only partial protection resulted. This could serve as suggestive evidence that more than one group of toxic agents were present in the polluted air and vitamin C was only effective against one particular group of these toxic agents (the oxidants seem to be the most reasonable group for vitamin C action). It would not be expected, for instance, that vitamin C would be effective against pollutants such as ethylene. Another consideration which probably was important was the relationship between the concentration of the toxicants in smog and the amount of vitamin C in the plant cells. High concentrations of toxicants would presumably damage the cells in spite of the presence of increased amounts of the vitamin because the vitamin increases were small in comparison to the increased smog. Different plants absorb vitamin C at widely varying rates and also differ in their susceptibility to smog poisons. This possibly accounts for the fact that spinach was not protected while romaine lettuce was. Both of these plant types grown in the same field, received the same vitamin treatment and were exposed for about the same time to the polluted air.

-- Author's conclusions

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