

HOW MUCH ETHYLENE GAS IN OUR FLOWER STORAGEES?

The answer to our snapdragon shattering problem may hold the key to several other problems which we have every fall and early winter in the Denver and perhaps other areas.

Let us think about several problems which occur together each fall -- usually in October and November. Snapdragons have more than a normal tendency to shatter -- that is drop their blooms prematurely. Carnations do not keep as well as they should. Some trials made last fall by wholesale houses in Denver showed poor keeping with almost all varieties. Another problem during the fall period is that of heavy supplies of chrysanthemums -- both local and field grown stock. Sometimes this stock is held in the wholesale houses for considerable periods before it is moved.

All this may add up to an answer if we can dig it out. Fischer, in his storage work at Cornell, found that snapdragons and calceolarias can produce enough of a gas (presumed to be ethylene) to cause their own shattering. Williamson of the Ornamentals Research Laboratory on Long Island has shown that almost all diseased plant material gives off a gas presumed to be ethylene. Numerous workers have shown that various plants and plant parts give off a similar gas that tends to hasten maturity of fruits and flowers.

Certain indicator plants have come to be used for detecting the presence of ethylene gas. The leaves of tomato plants drop and curl slightly when subjected to small concentrations of ethylene in the atmosphere. This reaction is known as "Epinasty." Pea seedlings which have previously been grown in the dark show a characteristic curling and malformation in the presence of minute amounts of ethylene gas.

This fall we plan to make some exhaustive studies on this problem. How much ethylene gas is normally present in our storages and what is its chief source? It has been suggested that chrysanthemum may be the culprit. No one, to our knowledge, has shown that healthy chrysanthemums give off toxic amounts of ethylene. Dr. Williamson found (New York Flower Growers Bull. 49) that chrysanthemums infected with ray blight and Botrytis cinerea produced rather large amounts of ethylene gas. Possibly large numbers of chrysanthemums giving off small amounts of gas can add up to snap shattering and poor keeping carnations.