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OPEN FLAME BURNERS AFFECT MUM CROPS*

Many growers throughout the country are using open flame burners as a source of heat and carbon dioxide (CO_2). Again this year, as in the past years, it was not surprising to find mum crops damaged by the harmful, by-product gases given off by these non-vented burners when they were used at night as a source of heat.

If you are planning to install or continue to use this type of burner, it would be wise to vent them properly. Much of the trouble takes place because many of them are not vented properly and the toxic gases go right into the greenhouse atmosphere. The gas builds up fast especially in the winter when vents are closed tight during the day or in tight plastic houses when the burners are used as a source of heat at night. We have never observed injury from open flame CO_2 burners when used during daylight hours for producing CO_2.

The effects these gases have on mum plants are obvious and can be described as follows:

1. FLOWER BUD DEVELOPMENT STALLS OR COMPLETELY STOPS-Plants begin to revegetate under short days. If the gas affects the plants in the early stages of bud development, small visible buds abort and new shoots begin to break out. If the gas affects a later stage of bud development, flowering can be uneven. The more advanced buds will flower, later ones will flower partially or not flower at all.

2. UPPER FOLIAGE BECOMES SMALLER.

3. INTERNODES BECOME CLOSER TOGETHER.

4. GENERAL APPEARANCE CLOSELY RESEMBLES LOW TEMPERATURE.

It has also been brought to our attention by gas company representatives and by experiences in several greenhouses that considerable damage can be caused by lack of sufficient oxygen to support combustion. This phenomenon appears to be particularly true in plastic houses or during extremely cold weather when the glass is frozen tight. If there is not enough oxygen in the house, incomplete combustion will occur. The fumes or gases created by this poor combustion are very injurious to plants.

Before the heating season starts, it would be advisable to check with your gas company to find out how much fresh air must be brought into your greenhouses to supply the burners that you are using. A little time taken now to provide an air source could well save your crop next winter from adnormal bud development caused by toxic gases from improperly vented open flame burners.

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