THE CHAIN OF LIFE – PART II

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Last month, we were introduced to the Chain of Life concept initiated by Dr. George Staby of Ohio State University and the Society of American Florists. Simply put, Chain of Life is a method of providing longer floral life and therefore a better product to the consumer. Last month, we saw the requirements for water, water temperature and preservatives. This month, we shall review refrigeration, humidity, ethylene and cutting stems under water.

REFRIGERATION

Refrigeration is probably the most difficult phase of the CHAIN OF LIFE to qualify for, yet it can be the simplest. You need only to have refrigeration capable of holding 38° or lower with a humidity of not less than 80%. Questions most frequently asked of the Spokespersons concern the need for multiple refrigerators for the specific needs of each commodity that we sell, the lack of a dial to adjust humidity, where to turn for help and the costs of making changes.

The majority of our products survive very well in the temperature range of 34 to 36 degrees. Remember that many flowers do not show freezing damage until they reach 29 degrees. Certainly, some items such as Gladioli and Anemones like 45° and Orchids 50°. We all know that Anthuriums survive best at low room temperatures. Excepting for Orchids, one could squeeze by with a 38 degree box, especially if one knew where the "warm spots" might be. Temperature is easy—just spin the dial and set it where you want and, providing that your equipment is right, the box cools to the proper temperature.

HUMIDITY

Humidity is an entirely different matter. There simply is no dial. The humidity in your refrigerator is determined by the difference in temperature of the cooling coil and the temperature of the air around it, called the ambient temperature. The smaller the difference in these two figures, the higher the relative humidity. Run with too low a RH and your flowers will dry out. Go too high and the water running down the walls will increase the incidence of Botrytis and other diseases.

Our advice is to, first, be certain where you stand. Get temperature readings over a period of days in various parts of the refrigerator. Using a sling psychrometer (you should be able to borrow one from your high school science department) or a dial humidity gauge, determine the humidity at different times of the day. Should you vary significantly from that 38 degree/80% relative Humidity, call your local refrigeration man. Usually minor compressor corrections will solve the problem. Sometimes it might take a different size compressor or coil. Again, it is not money spent, but money invested that will pay off handsomely in less dumpage, fewer complaints and the ability to buy better because your merchandise will last longer.

ETHYLENE

The major problem caused by the wrong temperature or humidity or a combination of them is the increased incidence of ethylene. Now, we all know about ethylene . . . that gas given off by apples. We know that carnations and apples don't mix. Ethylene, that odorless, colorless gas is ever present, especially in our refrigeration units. At low temperatures it takes a very high concentration of the gas to do any damage to flowers. As temperatures rise, it takes less and less of the gas to show effects. As an example, at 31 degrees F it takes 22,000 parts per million to damage a carnation. At 80 degrees, only 379 ppm will have the same effect. Ethylene is the cause of most of our flower damage. How sad; it is so easily controlled.

Proper temperature is a good control for ethylene, as are good sanitation and the proper use of your facilities.

There are many sources of ethylene. Certainly we know enough to keep fruits and vegetables out of the refrigerator. Clean your containers regularly . . . scrub them. The algae in that dirty water give off tremendous amounts of ethylene. Don't hold on to those dying carnations "Just because I might need them." They are giving off ethylene. Store your non tropical greens elsewhere. They are known producers of ethylene. Avoid storing butter and cheese with flowers. They in themselves are not bad, but that little mold that they develop is hazardous. Remove all rubbish, broken stems and damaged leaves. They all produce ethylene. Try to avoid shipping mixed boxes of commodities for long distances. Pom pons and carnations are an especially susceptible combination. One's leaves are a particularly high ethylene producer and the other a very susceptible product.

So, there we have it. Use high quality water at the proper temperature with preservatives. Store your products at 38 degrees or lower Farenheit with a humidity of more than 80%. Keep your refrigerators and containers clean to eliminate as much ethylene production as possible.

Now, all of this is for nothing if the consumer breaks the chain. We, the retailer, must take care of that final link. Grower-shipper-wholesaler-retailer-consumer. All the links are important to the CHAIN OF LIFE. Be certain to put a proper care tag on each item delivered. Tell them about preservatives and about keeping flowers cool when not being enjoyed. Tell them that they are a vital part of the CHAIN OF LIFE.

Before ending any discussion on the CHAIN OF LIFE these days one must be certain to address the **"cutting under water"** controversy.

Actually, there is no controversy. It works. Cutting stems under water adds time to the longevity of the flower. Advocated by Japanese floral people for years, promoted by our own garden club people in the 1940's, recent research shows us that it works.

The premise is that whenever we cut a stem, particularly one that has been out of water for a substantial length of time, inner stem pressures have built up. The stem is trying to draw water through dry, clogged passages. Suddenly as you cut that stem there is a great upsurge of air to fill that void.

Now, if it is cut under water with shears, when that upsurge occurs, it is water that gets into the stem. And, as the stem is moved from the cutting container to a storage container you will not have a little bubble of water that hangs on. No air is going in there. Try it. It works. Next time you have a particularly badly wilted shipment of flowers, cut some under water and some the way you usually do. Put them in warm water with preservatives. You will see a difference in minutes.

That is the CHAIN OF LIFE story. Only you can make it work. But then, you are the one who will profit most by your efforts.