

Flower Growing & Marketing



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IN THIS ISSUE

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*** SOIL MIX MEETING - SEPTEMBER 14 ***
R & D DEPT. SEASONAL CARNATION FLOWERLIFE EXPERIMENT *** HOUSEHOLD
ROSE KEEPING RECIPES *** PLANT HIGH !! ***
WATER QUALITY IMPACT ON COMMERCIAL GREENHOUSES IN THE CENTRAL COAST REGION

Soil Mix Meeting - September 14

The 7th in a series of 1983 monthly training meetings will be held on Wednesday, September 14, at 3:30 PM, at the San Diego County Flower and Plant Auction, 689 Puebla Street, Encinitas. The subject is "soil mixes" and will be presented by Dr. O.A. Matkin, President of Soil and Plant Laboratory, Inc.

Support your San Diego County Flower Association and your Farm Advisor by taking advantage of these special meetings.

Seasonal Carnation Flowerlife Experiment

A more detailed report will be published later. Briefly, 96 fresh harvested White Sim carnations were collected from 3 different carnation ranges, each month for 13 months from February 1982 through February 1983. Each grower's flowers were kept separate and placed in the same overnight treatments in the refrigerator. The 4 conditioning treatments were then split into only 2 vase solutions, either plain deionized water or 2% Floralife.

The results showed:

1. Little seasonal variation in flower life of untreated carnations during the 13 months (6 to 7 days). Also, there was no basic difference between the 3 growers' flowers, despite quite different temperature conditions in the various greenhouses.
2. STS (silver thiosulfate) used overnight and straight water thereafter increased flowerlife by 300 percent (16 to 19 days) the first 4 months of the experiment. STS was only moderately effective during the other 9 months and we are suspicious that our stock solution went bad !!
3. STS + 10 percent sugar was not more effective than STS alone as an overnight conditioner.
4. "Phydan-20" + 10 percent sugar was also effective but slightly less than STS or STS + sugar.

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5. Keeping the flowers in a 2 percent Floralife vase solution their whole life after the overnight treatments, extended flower life by 2 or 3 days as compared to using only deionized water in the vase.
6. The take-home message. If all carnation growers would treat all flowers right after harvest in STS solution overnight, they would be providing a product that is 300 percent better !! This is the main factor behind Columbia's "Super Carnations".

Household Rose Keeping Recipes

This is a true story ! At the 1983 San Diego County Fair, our Cooperative Extension - University of California office had a booth featuring the county flower industry and displaying a continuous demonstration of 6 vases of fresh red roses. The cultivar "Cara Mia" was used most of the time because of its reputation for "neck droop" at the consumer level.

All roses were trimmed, removing 50 percent of the leaves (lower, of course), soaked under warm water (flowers and stems) for 30 minutes, recut under the water, and placed in the 6 vases with the following solutions, all made with San Diego tap water (ugh!)

- 1 - $\frac{1}{2}$ pint regular 7-UP (diet type won't do!), $\frac{1}{2}$ pint water, $\frac{1}{2}$ teaspoon household bleach.
- 2 - 1 quart water + 2 Tablespoons vinegar, 1 Tablespoon sugar, $\frac{1}{2}$ teaspoon bleach.
- 3 - 1 quart water containing 2 percent "Floralife"
- 4 - "Cornell Solution" = 200 ppm 8-hydroxyquinoline citrate, 50 ppm aluminum sulfate, and 25 ppm silver nitrate plus 2 percent sugar.
- 5 - Tap water only (the control treatment)
- 6 - 1 quart of water, 2 Tablespoons lemon juice (fresh), 1 Tablespoon sugar, $\frac{1}{2}$ teaspoon bleach.

The booth was in a hot natural sky-light, greenhouse-like tent. Basically, all flowers in 5 repeated groups opened from their buds. However, neck droop and severe wilt set in with treatment 2 and 5 within 2 days. I suspect that without the hydration treatment, removal of leaves, and cutting under water, these flowers would not have opened at all! Why the vinegar and sugar treatment failed, we don't know, unless the pH was too low. The lemon juice-sugar-bleach treatment was absolutely superb. The flowers opened fully and lasted 7 to 8 days. In fact, all four treatments: (1) 7-UP-sugar-bleach, (3) 2% "Floralife", (4) "Cornell Solution" and (6) lemon juice-sugar-bleach, were basically equal and excellent in performance. If you want to get really particular, the Cornell solution was a hair better than all others because the aluminum sulfate kept the petals from blueing -- but the difference would not be obvious to the average observer. My office staff often choose the blue-red roses over the brighter-red in vase life experiments !!

The take-home message is that consumers can easily make excellent cut flower solutions for roses and other flowers from their own available household ingredients. Our "recipes" at the fair booth were well received and a favorite hand-out. But also important, an overnight treatment by growers in a solution of 200 ppm citric acid could do wonders for rose keeping quality.

Plant High !!

In looking at several floral crop problems recently, one simple old problem continually reappears -- planting too deep. Some plants, such as tomatoes will re-root along the stem if you plant exceptionally deep. This is unusual. Basically, all woody plants, and especially roses, fruit trees, and shrubs should be planted "high". By high, we mean that the crown or original soil line of the young plant should be placed slightly above the soil line of the permanent plant location. There are several reasons for "high" planting. Many plants settle after irrigation begins. Many plants are very susceptible to crown rots when the crown is buried. Believe it or not (it's a rule of the physics in water movement in soils) but surface water will move more readily into the root system of a young plant that often has a much different type of container media than the field soil where it is finally planted. Water doesn't move well from one soil type to another.

So, we lose many transplanted crops from high soil moisture or low soil moisture, but also improper irrigation placement of water on young plants as compared to older plants, or planting too deeply.

As mentioned above, some crops are "notorious" for developing disease problems if planted too deep. Two famous examples are carnations and gerberas. But again "native-type" woody shrubs such as Geraldton Waxflower, Australian Tea-bush (*Leptospermum*) and the "Proteas" are all quite susceptible to problems from planting too deeply.

WATER QUALITY IMPACT ON COMMERCIAL GREENHOUSES IN THE CENTRAL COAST REGION (reprinted from "Flower & Nursery News", Monterey Bay Area)

The Central Coast Region Water Quality Control Board has finished a survey it conducted to assess water quality problems associated with commercial greenhouses. Below are the conclusions and recommendations from the final report. If you wish to receive the entire report or ask questions, contact Vernon L. Jones, Engineering Associate, California Regional Water Quality Control Board, 1102-A Laurel Lane, San Luis Obispo, CA, phone (805) 549-3147.

Conclusions and recommendations:

1. Of the approximately 225 greenhouses operating throughout Region 3, only a small number are posing a threat to water quality. Minor changes at most of those facilities would alleviate concerns.
2. Wastes associated with greenhouse operations include: water softener brines, boiler blowdown, pesticide and fertilizer rinsewater, irrigation tailwater, roof drains, and solid wastes. The wastewaters listed above may contain any of the following:

Total Filtrable Residue (TDS)

Sodium (Na)
Chloride (Cl)
Nitrate (NO₃)
Potassium (K)
Calcium (Ca)
Magnesium (Mg)
Ammonia (NH₃)
Iron (Fe)
Manganese (Mn)

Copper (Cu)

Zinc (Zn)

Boron (B)

Molybdate (MoO₄)

Biochemical Oxygen Demand (BOD)

Total Non-Filtrable Residue (Suspended Solids)

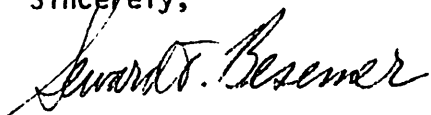
- The approximate flow volumes for the waste listed above are:
- Water softener brines - 10 to 1,000 gallons per day
 - Boiler blowdown wastes - 5 to 150 gallons per day
 - Pesticides and fertilizer rinsewaters - Varies
 - Irrigation tailwater - Varies with application methods
 - Roof drains - Varies.

3. No water quality problems were discovered as a direct result of greenhouse operations assessed during this survey. Depending on the methods used at a site, it is still quite possible that certain individual operations or clustered groups of greenhouse operations could be causing, or significantly contributing to, a problem. These, of course, can be addressed on a case-by-case basis if they are discovered.

It should be noted that, because of a concurrent study, the greenhouses of Carpinteria Slough and a majority of these in Santa Barbara County were excluded from this study.

4. From a Regional Board perspective, the preferred method for supplemental heating of greenhouses are those that have no discharge, i.e., the closed loop hot water system and space heaters.
5. Where boilers are used for heating, water softener regenerant and boiler blow-down waste should not be discharged in a manner that will adversely impact surface or ground-water. Where receiving waters are not saline, these wastes should be discharged to impermeable evaporation beds.
6. Pesticides and fertilizers should be applied in a manner and in concentrations that minimize the possibility of discharge of these pollutants off-site. Waste containing pesticide and fertilizer residues should not be discharged where it may enter surface waters or percolate to ground-water.
7. Spills of any type that may jeopardize beneficial uses of water should be reported promptly to the Regional Board.
8. Compost should be stored in a manner that minimizes generation of leachate. Leachate controls should be installed as necessary to protect state waters.
9. Disposal of sludges, salt residues, pesticide residues, and solid waste should be in a manner and location appropriate for the type of waste.
10. Treatment and disposal of waste should be in a manner that prevents nuisance conditions.
11. Injector systems should be provided with an anti-siphon device.
12. Greenhouse operators meeting these general guidelines should be allowed a waiver of waste discharge requirements. Waste discharge requirements should be considered on a case-by-case basis for facilities where size, location, and design of the operation and sensitivity of the receiving waters make periodic review in the public interest.

Sincerely,



Seward T. Besemer
Farm Advisor
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