

# FRUIT AND ROSE RESEARCH - OVERTON, 1983

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ROSE CROWN GALL CONTROL DEMONSTRATION  
Smith County, 1982

George Philley and Lynn Brandenberger\*

INTRODUCTION

Crown gall is caused by a bacterial organism that survives in the soil. It is a serious widespread disease of many wood ornamentals. Crown gall can cause considerable loss to producers of landscape-type plants that are propagated from cuttings. Infection takes place at wound sites and cuttings obviously provide an open wound.

Although the disease has been researched for many years, economical control measures have not been devised. In recent years, a biological control was discovered in Australia. The biological agent is a bacterium sold under the tradename Galltrol®. It has been tested in the United States and found to give good control on certain crops.

Galltrol® has been tested for three years in East Texas with sporadic results. This demonstration was established to obtain additional information on its performance.

PROCEDURE

Two plots were established in separate areas of a large field. At one location, cuttings were planted on January 21, 1981. Prior to planting, cuttings were dipped in the Galltrol® solution which was mixed in distilled water at twice the recommended rate (2 plates/gallon). The planting date was not recorded for the second plot but was sometime between late January and early February. In this plot, the cuttings were treated in a solution mixed at the normal rate of 1

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plate/gallon. Both plots were dug on December 9, 1982 and evaluated by counting the number of crown gall-infected plants out of twenty at nine randomly selected locations. A total of 180 plants were examined per plot.

## RESULTS

A significant amount of crown gall developed in the nontreated area where Galltrol<sup>®</sup> was used at twice the normal rate. In the treated rows, four out of 180 plants were infected (2.2%) and 27 out of 180 (15%) in the nontreated rows. It was obvious that the treatment reduced crown gall incidence.

Where Galltrol<sup>®</sup> was used at the standard concentration, there was not as much crown gall to develop. The treated area had 1.6% infection and the nontreated had 3.3%. Although overall infection was less in this area, the treatment still reduced the number of crown gall-infected plants by 50%.

## DISCUSSION

Galltrol<sup>®</sup> performed well in this demonstration and should be further tested. Its use on other woody ornamentals in East Texas has shown inconsistent results ranging from no control to a 50% reduction in crown gall. Factors affecting performance include soil type, soil conditions at planting, treatment technique and variation of the crown gall bacterium in the soil. Some strains of the bacterium are resistant to the Galltrol<sup>®</sup> treatment. These strains were identified two years ago in East Texas. However, where crown gall is a severe problem, producers may want to consider using this material since there is a chance some degree of control may be achieved. Check plots, where no treatment is made, should always be included in order to judge performance of the material.