elongation. Plants treated with 50 ppm. produced longer stems than did those treated with only 10 ppm. Leaves and growing points on the treated plants appeared in every way like those of the non-treated plants. After a period of 40 to 50 days stem elongation of the treated plants apparently stopped. Thereafter treated plants formed small non-marketable heads. Non-treated lettuce plants produced good marketable heads of lettuce.

RESPONSE OF POLE BEANS, TOMATOES, SWEET CORN AND CELERY TO GIBBERELLIC ACID

C. M. Geraldson

Gulf Coast Experiment Station

Bradenton

An experiment was conducted at Bradenton to determine the effect of gibberellic acid with and without extra fertilizer on the yield and quality of tomatoes, sweet corn and pole beans. A replicated 3 x 2 x 2 factorial experiment included 2 fertility levels (4-8-8 and 12-16-16 at a 2500 lbs./A. rate) and ± 5 applications of nutritional sprays (1 gal./100 of a 10-20-10 + minors). Gibberellic acid was applied as a spray (0, 20 and 200 ppm) to the seedlings within 10 days after emergence (Feb. 1957).

The combinations of nutritional sprays and fertility levels produced only minor differences in the effects of gibberellic acid treatments.

A response to gibberellic acid by corn was not noted. Pole beans produced smaller and yellow colored leaves and seemed to produce more blossoms, especially with the 200 ppm. treatment. The yield of marketable beans and tomatoes was reduced when either 20 or 200 ppm gibberellic acid were applied. The tomato yield reduction was caused by an increase in culls (fasciation and catfacing) which was statistically significant at the 1 percent level. The plots receiving no gibberellic acid produced 8 percent culls, those receiving the 20 ppm treatment – 33 percent culls; and with the 200 ppm treatment – 38 percent culls.

In another experiment, celery in four different commercial fields in the Sarasota area was sprayed with 0, 20, and 200 ppm gibberellic acid. There was a marked response, best described as a lengthening of the petioles. Petioles grew 3 to 5 inches longer, but not as thick as the untreated. However, both yield and quality of the treated plants were inferior to that which was not treated. Quality measurements were made by Dr. C. B. Hall, Dept. of Food Technology and Nutrition, University of Florida, at Gainesville.

Results of these experiments indicate that certain vegetable crops respond to gibberellic acid treatment. However, some of these responses may be undesirable and at this point recommendations for use on vegetable crops are not in order.

GIBBERELLIN – HISTORY AND PHYSIOLOGY

Howard J. Teas

Agricultural Experiment Station

Gainesville

The history of gibberellin knowledge goes back to 1898 when a disease of rice was described and the causative agent identified as *Fusarium heterosporum* (*6*, general reference). This species is now known as *Gibberella fujikuroi*, and is used industrially to produce gibberellin by a large scale fermentation process. The rice disease was given the name "bakanae" disease or "foolish seedling" disease because the infected plants grew taller than healthy ones, as though foolishly wasting their energies, then died. Actually, symptoms of the bakanae disease had been recorded as early as 1808 (*6*). The unique property of gibberellins to increase plant growth was discovered by Kurosawa in 1926. He succeeded in producing foolish seedling disease symptoms in rice plants by application of sterile filtrates of the medium in which *Gibberella*