

Obtaining chromosome counts from mature field-grown maize plants

Two procedures are typically employed to obtain tissue for determining chromosome numbers in maize plants: 1) rapidly growing root-tips can be harvested from germinating kernels or from seedlings growing in pots or 2) microsporocyte (immature tassels) samples can be removed from plants at the appropriate stage.

As I was carrying out the work in the previous report, I learned that it was also possible to obtain excellent root-tips for chromosome counts from field-grown plants that were past the pollen-shed stage (anthesis). I dug up the plants and transplanted them into potting soil in our greenhouse, and much to my surprise, I found that plants that were nearing senescence would still produce excellent root-tips. I used this procedure to obtain excellent root-tips from three of the exceptional plants described in the previous report. All three of these exceptional plants were past anthesis, and I was able to obtain accurate chromosome counts for each of these plants.