Vegetative Phase Change and Response to Common Rust (Puccinia sorghi) in Sweet Corn. (C01-tracy140530-Poster)

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Abstract:

Development in corn can be divided into juvenile and adult phases. The timing of phase change is highly heritable and has been associated with resistance to common rust. We used three cycles of divergent full sib recurrent selection to develop early (adult earlier) and late (adult later) phase change populations. Divergent selection for vegetative phase change was successful with a strong linear response to selection for last leaf with juvenile wax. We initiated a planting date study in which all seven cycles were planted at three dates. The cycles were inoculated on the same day with one planting at the v5 stage, another at v10 and the third at v15. For the v5 group there were significant differences among cycles but they did not indicate any linear trends and the level of rust was high in all cycles. Inoculation at v10 resulted in a significant linear trend over cycles. Both C3E and C3L had more rust than C0. In v15 there was a significant linear trend for the late direction with the late plants having more rust than C0. There was no linear trend in the early direction. The effect of developmental rate on rust response depends on the timing of inoculation.

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Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 4:00-6:00 pm
Poster Board Number: 1214

Keywords:

Maize, Pest resistance, Zea mays, Plant development