The Georgia Agricultural Experiment Stations
College of Agricultural and Environmental Sciences
The University of Georgia

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Insect Screening Results

Evaluation of Corn Hybrids for Resistance to Insects

Xinzhi Ni, Matthew D. Krakowsky, and Kedong Da

During the growing season of 2005, the environmental conditions in southern Georgia were favorable for the rapid buildup of insect populations, providing the potential for considerable damage to the corn crop. Six ear-feeding insects recorded in our trials were the southern green and brown stink bugs, the pink scavenger caterpillar, the corn earworm, the fall armyworm, the maize weevil. While stink bug feeding before anthesis may kill developing silks and terminate kernel development by preventing pollination, stink bug feeding post-anthesis can prevent normal kernel development. Although the ear-feeding insects usually cause the greatest amount of damage in the late-planted corn, corn left in the field for an extended period past maturity could also be severely damaged by the pink scavenger caterpillar and maize weevil.

In 2005 stink bugs caused the greatest percentage of injured kernels, while maize weevil damage was least observed. Percentage of all insect-damaged kernels for these hybrids varies from 1% to 11% and is reflected by a rating of very good (VG), good (G), fair (F), poor (P), and very poor (VP) shown in the table. Hybrids in the test sustained average of 5.2% of the kernel damage. Of the total damage, 65% was caused by stink bugs, 27% by the pink scavenger caterpillar, 8% by the corn earworm and the fall armyworm, and only less than 0.1% was by the maize weevil. Although the stink bug-damaged kernels might not result in a complete yield loss, the high percentage of shriveled and discolored kernels can reduce quality and increase the opportunity for infection by molds. Losses to the pink scavenger caterpillar and maize weevil were based on damage by multiple generations of these insects as the corn dries in the field. Timely harvest can substantially reduce losses caused by these two insects.

Hybrids resistant to insects are highly recommended for planting and are presently the most economical means, especially in late plantings, for the reduction of ear-feeding insect damage. Consult your local county agent and/or extension entomologists for additional control recommendations for a specific insect pest in your region.

Rankings of the 67 hybrids for their resistance to six ear-feeding insects are given in the following table. During the damage evaluation process, husk tightness ratings were assigned using a scale of 1 to 5, in which 1 = very loose and 5 = very tight. Because average rating for husk tightness is between 3.5 and 4.7, only loose (L), medium (M), and tight (T) ratings are given in the table. The insect resistance ratings were VG = 0-2%, G = 2-3%, F = 3-7%, P = 7-10%, and VP = >10%. The lettered ratings in the table refers only to relative resistance to insects and are not indicative of yield. Please refer to the yield data in other tables for specific information.

All entries were planted on April 5, 2005 and harvested on October 11, 2005. Plots were thinned to 20,000 plants per acre. Data for this section was compiled by J. C. Mullis, P. Tapp, and G. Gunawan at the Coastal Plain Experiment Station in Tifton, Georgia.

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Tifton, Georgia: Evaluations of Corn Hybrids for Resistance to Insects and Related Traits, 2005

Company or Brand Name	Hybrid Name	Days to Antheses	Husk Tightness[1]	Overall Resistance to Insect Injury[2]	
				2005	2 or more years
Garst	8292YG1	75	M	VG	G
Monsanto	NC6901	78	M	VG	-
Southern States	692Bt	76	M	VG	-
DeKalb	DKC69-71(RR2/YGCB)	80	M	G	G
DeKalb	DKC67-60(RR2)	79	M	G	G
Garst	8200YG1	76	M	G	G
NK	N91-R9	80	M	G	G
NK	1851W*	79	M	G	G
DynaGro	58K22	76	M	G	-
Southern States	804	77	M	G	-
Terral	TV2140nRR	78	M	G	F
Croplan	799Bt	74	L	F	G
NK	NX8363	77	M	F	G
Terral	TV26B23	79	M	F	G
Vigoro	V58Y41	77	M	F	G
AgraTech	733RR	79	M	F	F
Greenwood	780	79	M	F	F
Hytest	7729HX/LL	78	M	F	F
Hytest	7806RR2/Bt	77	M	F	F
Pioneer	33M54	78	M	F	F
Pioneer	31G66	75	M	F	F
Pioneer	33V15	77	L	F	F
Pioneer	34B24(YGCB)	75	L	F	F
Pioneer	32D99	78	M	F	F
AgraTech	X41861Bt	77	M	F	-
AgraTech	X41955Bt	78	M	F	-
AgraTech	755RRb&CRW	76	M	F	-
AgraTech	X41766RR	75	L	F	-
AgraTech	755RR	75	M	F	-
Croplan	851RR2/Bt	78	M	F	-
Croplan	822RR2/Bt	80	M	F	-
DeKalb	DKC69-72(RR2)	80	M	F	-
DeKalb	DKC66-21(YGCB)	76	M	F	-
DeKalb	DKC61-72(RR2)	75	M	F	-
DynaGro	58P59	79	M	F	-
DynaGro	58K40	79	M	F	-
DynaGro	CX04520	78	M	F	-
Golden Acres	2295RR	80	T	F	-
Greenwood	845	80	M	F	-
Greenwood	830*	79	T	F	-

Tifton, Georgia:
Evaluations of Corn Hybrids for Resistance to Insects and Related Traits, 2005 (Continued)

Company or Brand Name	Hybrid Name	Days to Antheses	Husk Tightness[1]	Overall Resistance to Insect Injury[2]	
				2005	2 or more years
Greenwood	775	79	M	F	-
Hytest	7891RR2/Bt	78	M	F	-
Hytest	7799Bt	74	M	F	-
Monsanto	NC6702	80	M	F	-
Monsanto	NC6704NRR1	80	T	F	-
NK	NX8513	78	T	F	-
Pioneer	31N26(RR2)	75	M	F	-
Pioneer	33H25	75	M	F	-
Southern States	746RRBt	79	M	F	-
Terral	TV26B34(YGCB)	77	M	F	-
Terral	TV25R31(RR)	78	M	F	-
Terral	TV26B82	78	M	F	-
Terral	TV26BR41(RR/YGCB)	77	M	F	-
Terral	TV27C48	76	M	F	-
Terral	TV23R31(RR)	78	M	F	-
Terral	TV25BR23(RR/YGCB)	78	M	F	-
Vigoro	V62R66	79	M	F	-
Vigoro	V56Y51	78	M	F	P
Greenwood	835	81	M	P	G
Southern States	842RR2/YGCB	78	T	P	F
DynaGro	CX05516	78	M	P	-
Vigoro	V59YR52	79	M	P	-
Croplan	820RR2/Bt	79	M	P	-
Croplan	731HX/LL	80	M	VP	-
Hytest	7924RR2/Bt	79	T	VP	-
Golden Acres	8112	80	M	VP	VP

* White kernel hybrid.

1. L = loose husks, M = medium-tight husks, and T = tight husks.
2. Overall insect resistance to ear-feeding insects (i.e., the corn earworm, the fall armyworm, the maize weevil, and the pink scavenger caterpillar). The damage measured by the percentage of kernels infested with the ear-feeding insects from five ears, where VG = very good, G = good, F = fair, P = poor, and VP = very poor.