

Evaluation of commercial sweet corn cultivars for response to tar spot in Hancock, Wisconsin, 2025.

A trial was established on 30 Jun at the University of Wisconsin Hancock Agricultural Research Station in Hancock, WI, to evaluate commercial cultivar resistance to tar spot. Eighteen commercial sweet corn cultivars from 4 suppliers (Seminis, Syngenta, Harris Moran, Crookham Company) were evaluated. The experimental design consisted of 4 replicates arranged in a randomized complete block design. Each treatment plot consisted of four, 25-ft-long rows spaced 30 in. apart with 5-ft barren buffer alleys at the end of plots in the same row. Insect, weed, and fertility management was carried out as per commercial standards for the production region. Naturally occurring inocula of tar spot was present from nearby sweet corn plots not sprayed with fungicides, and from the general agricultural region of Hancock. No fungicides were applied to the plots for the duration of the trial. The trial was rated for disease incidence and severity on the leaves closest to ear set on 5 dates, 14 Aug, 28 Aug, 11 Sept, 18 Sept, and 2 Oct using the Horsfall-Barratt rating scale (0-11 rating with 0=no disease, 11=100% disease severity). The Area Under the Disease Progress Curve (AUDPC) was determined by trapezoidal integration and then converted into Relative AUDPC (RAUDPC), i.e. percentage of the maximum possible AUDPC for the whole period of the experiment. Ten feet of the center 2 rows was hand-harvested for each plot on 2 Oct. All ears with silk were harvested, counted, and weighed without shucking. Data were analyzed using ANOVA ($\alpha=0.05$) and Fisher's LSD at $\alpha=0.05$.

Disease pressure was heavy with 100% disease incidence in all plots. Due to the later planting, yields were lower than expected for commercial sweet corn. There were significant differences in the yield, average ear weight, ear number per acre, and disease severity (RAUDPC) across the cultivars tested. The top six yielding cultivars included Forerunner, GH9335, GSS3951, Coachman, Triple Threat, and CSHYP16-1027. The top 5 cultivars with the least amount of disease were CSHYP16-1027, GSS2259P, GH9335, GSS3951, GSS2259P.

Variety	Yield (ton/A)	Average Ear Weight (lb)	Ear Number/Acre	RAUDPC ^z
Azlan	4.64 b-d ^y	0.569 cd	49658.4 d	0.211 c-e
Braveheart	4.48 bc	0.628 c-e	43560.0 b-d	0.244 f-h
Coachman	5.91 e-h	0.741 ef	48787.2 d	0.221 c-f
CSHYP16-1027	5.90 f-h	0.698 d-f	51400.8 de	0.122 a
Forerunner	6.64 h	0.674 d-f	60112.8 e	0.208 c-e
Fortitude RMN	2.28 a	0.381 ab	34848.0 ab	0.236 e-g
GH9335	6.11 gh	0.764 ef	48787.2 d	0.162 b
GSS2259P	5.22 b-g	0.716 ef	44431.2 cd	0.151 ab
GSS3951	5.93 f-h	0.730 ef	49658.4 d	0.197 c
GSS4628	5.76 d-h	0.769 f	46173.6 cd	0.201 cd
Kamet	4.84 b-f	0.649 d-f	45302.4 cd	0.224 c-f
SSK 0279	4.92 b-f	0.659 d-f	46173.6 cd	0.227 c-f
Strongheart	1.48 a	0.331 a	27007.2 a	0.273 h
SVSK 7434	4.65 b-e	0.753 ef	37461.6 bc	0.262 gh
SVSU 5255	5.48 c-h	0.706 def	47916.0 d	0.232 d-g
SVSU 5823	5.50 c-h	0.667 d-f	49658.4 d	0.253 f-h
Townsend	4.11 b	0.508 bc	49658.4 d	0.204 cd
Triple Threat	5.90 f-h	0.700 d-f	51400.8 de	0.203 cd

^zRAUDPC= Relative Area Under the Disease Progress Curve.

^yColumn numbers followed by the same letter are not significantly different at $P = 0.05$ as determined by Fisher's Least Significant Difference (LSD) test.