EXCEL

Synonyms - None.

HISTORY
Excel originated from an F5 plant from the cross Cree/Bonanza/Manker/3/2*Robust made in 1981 and was tested as M52. It was developed by the Minnesota Agricultural Experiment Station and released in February 1990.

AREA OF PRODUCTION
Excel is well adapted to the major malting barley production areas of the upper Midwest.

AGRONOMIC CHARACTERISTICS
Yield - Excel has yielded 9% higher than Robust and similar to Stander in Minnesota trials.
Excel has a lower percentage of plump kernels than Robust.
Maturity - Medium late, similar to Robust.
Straw Strength - Moderately strong, similar to Robust.
Straw Length - Medium, shorter than Morex or Robust.
Disease Reaction - Excel possesses the \( R_p1 \) gene for resistance to stem rust and is moderately susceptible to the QCC pathotype of stem rust. It has the NDB112 gene for resistant to spot blotch and a low level of resistance to net blotch.

UTILIZATION
Used for malting and brewing.

September, 1996
DESCRIPTION

**Plant** - Spring growth habit.

**Head** - 6-row, medium long, medium lax, semi-erect.

**Beard** - Smooth.

**Glume** - Glumes have a band of long hairs.

KERNEL

**Hull** - Adhering and wrinkled.

**Aleurone** - Colorless.

**Rachilla Hairs** - Long and fragile.

**Veins** - Central and lateral veins moderately prominent.

**Barbs of Lateral Veins** - Few to none.

**Crease** - Crease narrow at the base, flared toward beard end.

**Point of Attachment** - Depression tending toward a crease.

**Kernel Size** - Medium.

**Kernel Shape** - Wide at center, tapering to both ends. More slender than Robust. Lateral kernels moderately twisted.