

Proposed spring emmer PI 306-535 accession for release in 2000

Submitted by: G. F. Stallknecht

Lucile

RECEIVED MAR 22 2002

Crop: wheat

Type: spring emmer, *Triticum aestivum* L. ssp. *dicoccum* (Schrank) Thell

Description: PI 535 emmer, is awned and has white glumes and straw. Typical of the cultivated emmers, the glumes are tenacious and the spikelet containing two kernels remains intact when threshed. The rachis internode fragments remain attached to the base of the spikelet. The glumes are long and narrow with rounded to elevated shoulder and a short obtuse beak. The spikelet lemma is awned and the spikelets are erect and dense with a 2- row profile.

The plant height of PI 535 emmer averages 38 inches, ranging from 28 to 45 inches compared to Otana oats averaging 40 ranging from 31 to 49 inches. PI 535 emmer heading date averaged 187 ranging from 179 to 193, compared to Otana oats which averaged 175 ranging from 166 to 185 Julian days. Test weight of PI 535 emmer averaged 35.2 lb/bu ranging from 28.8 to 38.6, compared to Otana oats averaging 32.9 and ranging from 28.1 to 35.5 lb/bu. Protein content of PI 535 emmer grain with hull averaged 18.2 compared to Otana 15.0 and Lewis barley 15.3 in the 1995 and 1996 Moccasin and Huntley studies.

Disease susceptibility or resistance data is unknown for PI 535 emmer. PI 535 emmer has moderate straw strength and is susceptible to lodging when grown in regions of high rainfall or under irrigation. The lodging index of PI 535 averaged 3.5 compared to 6.1 for MDELR-1 emmer, when grown under high moisture.

Yield and quality data: PI 535 emmer and MDELR-1 emmer yields in comparison to spring oats and barley are described in (tables 1 and 2). PI 535 emmer yields were 20% higher than MDELR-1 emmer, averaged over 6 site years from 1996 to 1998 (Table 1). Yields of PI 535 emmer were not significantly different from spring oats, wheat, or barley. In 1999, PI 535 emmer yields were 15% higher than MDELR-1 emmer, averaged over 4 Montana and 1 North Dakota research Center sites (Table 2). Yields of PI 535 emmer in comparison to spring oats, wheat, or barley was variable among the Research Centers.

Feed values of PI 535 emmer compared to oats and barley described in (Table 3). Grain protein content of PI 535 emmer with hull was higher than oats or barley. The low ADF and NDF values for PI 535 emmer as compared to oats was reflected in higher feed value scores of 79.3 TDN verses 74.1 for oats, and 320 RFV verses 186 for oats.

Spring emmer is grown in regions where winter spelt would normally winter kill. Similar to winter spelt, spring emmers are most often fed to weaning calves or to livestock on progeny tests. The advantage of the hulled wheat as cited by producers is the high grain protein, higher digestibility, and hull roughage factors which are considered to reduce acidosis problems when fed as full level rations.

Seed of PI 535 emmer spring emmer will be distributed by the Foundation Seed Stock Program in the Plant Sciences Department, Montana Agricultural Experiment Station, Montana State University, Bozeman, MT 59717. Release date for publicity notices shall be effective upon the date of the signatures of the release notice.