Miag Multomat Milling Method

The Miag Multomat Mill is a pneumatic conveyance system consisting of eight pair of 254 mm diameter x 102 mm wide rolls, and ten sifting passages. Three pair are corrugated and employed as break rolls and five pair are smooth rolls utilized in the reduction process. Each sifting passage contains six separate sieves. The two top sieves for each of the break rolls are intended to be used as scalp screens for the bran. The third break sieving unit of the Soft Wheat Quality Laboratory (SWQL) Miag Multomat Mill was modified so that the top four sieves are employed to scalp bran. That modification increased the final bran sieving surface by 100% and essentially eliminated any loss of flour. Thus, the mill very closely approximates full scale commercial milling.

Experimental Milling Procedure

All SRW varieties are tempered to a 14.0% moisture level. Generally tempered wheat is held for at least 24 hours in order for the moisture to equilibrate throughout the grain. Wheat is introduced into the first break rolls at a rate of 54.4 Kg/hour (120# / hour). Straight grade flour is a blend of ten flour streams, the three break flour streams and the five reduction streams, plus the grader flour from the break streams and the duster flour from the reduction streams. The straight grade flour mean volume diameter is about 50 microns with an ash content usually between 0.42% and 0.52%.

Flour generated by the (SWQL) Miag Multomat Mill very nearly represents that of commercially produced straight grade flour. Bran, head shorts, tail shorts and red dog are by-products which are not included with the flour. Flour yields vary between 70% and 78%, which is variety-dependent due to milling quality differences and/or grain condition. Sprouted and/or shriveled kernels negatively impact flour production. Recovery of all mill products is usually about 99%. Least significant differences for straight grade flour yield and break flour yield are 0.75% and 0.82%, respectively.