

(18A)

Geneology: MEL was derived as an induced mutation from the publicly-released cultivar, CODA (PI 594372), a Soft White Winter Club Wheat, *Triticum aestivum* L. ssp *compactum* cultivar, developed by the USDA-ARS, Pullman, WA, in cooperation with the Agricultural Research Center, Pullman, WA; the Idaho Agricultural Experiment Station, Moscow, Idaho; the Oregon Agricultural Experiment Station, Corvallis, OR, and released as a public cultivar in 1998. Coda was derived from the cross 'Tres'/'Madsen'//Tres made in 1991. Seed of Coda was treated with mutagens EMS(Ethylmethane sulfonate, and Sodium Azide, sequentially) The M1(treated generation) was field grown near Pullman, WA, in 1998-99, and the M2 population was sprayed with Imazamox herbicide in summer 2000, after which herbicide tolerant candidate mutants were selected and transferred to a growth chamber for vernalization, and afterward to a greenhouse for growing to maturity. In fall 2000, M3 progeny from the candidate mutants were planted in greenhouse seed cups for spraying with herbicide to confirm the herbicide tolerances. Two M3 progenies showed homozygosity for herbicide tolerance, and seed harvested from single plants, selected from the M3 screened population were field sown in fall 2000 for seed increases. In spring 2001, the M4 progenies were sprayed with 1, 2 and 4 X expected field doses of herbicide, and scored for tolerance. Mutant 1, among the two tolerance mutants showed somewhat greater tolerance to the herbicide than Mutant 2, thus sublines, derived from single plant increases of Mutant 1, were harvested separately, and the increases sown in fall 2001 for further increases and field tolerance evaluation tests. The progeny increases were sprayed with herbicide in spring 2002, and field trial evaluations, as well as gene sequence analyses were conducted by BASF, of the several M1 sublines. The herbicide

tolerance of Mutant 1 lines was confirmed, and the lines were harvested individually in fall 2002 for Preliminary (first stage) Breeder Seed. Single spike selections were made also from all M1 sublines for use in developing new breeder Seed stocks from individual spike increases. The first stage individual Breeder Seed lines were used as the stock for production of further Breeder Seed and for Foundation Seed production, while the selected single spike samples from each line were processed separately to provide for the individual subline stock increases for future Breeder Seed. As the individual Preliminary Breeder Seed lines were also entered into field trials to further evaluate their herbicide tolerance and yield performance, the final Foundation Seed stock will be composed of a blend of all sublines showing the highest tolerance and yield performance. The Breeder Seed sublines were sown in fall 2002 by General Mills Operations near Blackfoot Idaho. New Breeder seed stock and Foundation Seed will be harvested from the individual M1 subline increases in fall 2003. A portion of a preliminary blend made up of a subset of the tolerant Breeder Seed sublines, that were grown at another increase location, was also sown at Blackfoot. Foundation Seed from that blended seed lot will be downgraded to Certified Seed, and made available for a first stage sale to selected farmers in the PNW. Because the spike selections for the follow-up Breeder Seed increases were not sown in fall 2002, sample lots from each of the sublines growing in Blackfoot, ID, will be harvested, to serve as second season Breeder Seed, after inspection and approval by the Breeder.