

Variety Description

MAGNUM 2000 is a very tall variety of white spring side oats with a botanical designation of *Avena sativa*, subsp. *orientalis*. Seeds are of normal shape but somewhat smaller in size compared normal grain oats. On occasion the primary kernel in a spikelet will be awned.

Seedlings are strongly upright and not dissimilar from other oat varieties. They will tiller profusely in thin stands producing up to 50 reproductive tillers per plant with good management.

Stems are stout and up to 8mm thick above the second node. Stems produce prop roots at the first and second nodes in moist spring conditions.

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Leaves are broad, long, and medium dark green 33-46cm long and 3.1-4.3cm wide. While they are generally upright, they will nonetheless nod at midpoint. Flag leaves are upright and vary from 7-20cm in length and 2-3cm in width and at times are clasping the culm. Under good growing conditions, plants will reach 155-168cm in height before head emergence. If cut for hay or green chop at this stage the feed is highly palatable and nutritious to almost all livestock. At full panicle extension, plants will reach 200-220cm with fall or early spring planting.

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Plants resist lodging despite their height. They will remain standing to maturity unless excessively fertilized with nitrogen, planted too densely, or if heavy rains combined with winds occur during the later growth stages. Primary tillers are taller than secondary or tertiary tillers, resulting in a multi-layered canopy of seed heads. Late plantings (early May) result in considerably shorter culms of only about 150cm. Panicle size will also be reduced.

Panicles are unilateral and strongly appressed at emergence with numerous branches. At maturity, heads fall semi-open under the weight of up to 400 kernels per panicle. Spikelets usually contain two kernels but three kernels per spikelet occur frequently in the upper 1/3 of the panicle.

Kernels are smooth, light colored, and narrowly oblong. The rachilla of the second kernel usually remains tightly attached to the first kernel. Some hulling occurs in machine

threshing. Dark angled awns occur occasionally on the primary kernels only and are similar to those on wild oats.

The mature plant of Magnum 2000 can be compared in size and shape only to two prior varieties out of this germplasm, namely Magnum and Magnum II. Magnum 2000 is taller and more massive than the prior two and is overall more robust.

Seed yields are dependent upon growing conditions and will vary from 3000 to 5000 lbs per acre.

MAGNUM 2000 is moderately susceptible to barley yellow dwarf, stripe rust, and loose smut. Seeding as early as possible to take advantage of cool weather in spring or fall seeding in moderate winter climates is desirable largely to avoid warm weather diseases such as the rust and barley yellow dwarf. For loose smut control, appropriate seed treatments are recommend.

EXHIBIT E

Statement of the Basis of Applicant's Ownership

Ledeboer Farms, LLC. is the sole owner of MAGNUM 2000. No other private or commercial entity has an interest in the variety. Frederick B. Ledeboer is the breeder and retains all breeding rights

Magnum 2000

Magnum oats are very tall and prolific forage, producing a high volume of plant material of very high quality hay and or green chop for all livestock. Forage and hay are very sweet and even with the larger straw, cattle and horses will readily clean up the feed trough. Magnum oats are small seeded, with good seedling vigor and great tillering. This variety has rapid elongation with broad leaves growing upright to produce a large almost bushy plant. If left un-grazed and with good growing conditions Magnum oats can reach five feet at head emergence and will exceed five feet after full heading. With a second count of 18,000 - 22,000 seed per pound a grower can generally cut the planting rate to 70 to 80% of common oats. The old walken oats won't even stand a chance against Magnum. Magnum oats are grown under P.V.P. and unauthorized propagation is prohibited.