MORRELL
AGRO INDUSTRIES, PLC
"Sowing Hope and Prosperity"

FACT SHEET

Jefferson Hard Red Spring Wheat

New Wheat Variety for Lowland Areas

Scientific Name: Triticum aestivum L

Jefferson Wheat
Smallholder farm in Langano, Ethiopia
(backyard farm)

Jefferson Wheat
Smallholder farm in Langano area
(bigger farm area)

Farmers Field Day 2010, Ethiopia

Alyssa Farm, MAI-Ethiopia
Jefferson Seed Multiplication Center
Beltu, Bale Zone, Oromia NRS

DESCRIPTION:
Jefferson wheat is a semi-dwarf hard red spring wheat intended for dry land production. Jefferson can also be used as an irrigated variety. Jefferson tends to produce higher levels of protein, 13% or greater, with excellent milling and baking qualities. Sample tested in a miller's laboratory in Ethiopia showed 17% protein. Adaptation trials showed Jefferson HRS wheat to yield best in the lowland areas in Ethiopia; the average time to reach maturity in the lowland areas was 75-80 days. Jefferson is white chaffed at maturity. Height: 91 cm.
Seed: Dark Red, Hard, Ovate, and Plump. Seed size average: 40 mg.

GENETICS:
Excellent milling and baking qualities; adult resistance to stripe rust (*Puccinia striformis*); moderate resistance to Hessian Fly (*Mayetiola destructor*); moderate susceptibility to leaf rust (*P. recondite*); susceptible to Russian wheat aphid (*Diuraphis noxia*); resistance to lodging and drought. Production is possible in rainfall regimes below 600 mm.

HISTORY:
Jefferson wheat was originally released by the Idaho AES, USDA-ARS in 1998 for dry land production in the regions of southern Idaho and northern Utah, USA.

MANAGEMENT:
Seeding rates: use a 1000 kernel weight (it is the weight in grams of 1,000 seeds) to establish the desired plant population and seeding rate. Optimum plant population for dry land production in fields without weed issues is 200-250 plants per m^2. Adjustment to the seedling survival rate, according to the planting method, should be made. Example - a broadcast planting method, 60% survival rate, and desired plant population: 250 plant/m^2 × 25 g/1000 kernels ÷ 0.60 survivals ÷ 100 = 104 kg/ha seeding rate. In areas of low rainfall, below 500 mm, farmers should consider reducing their planting rate by 10-15% to reduce competition. Soil moisture content should be around 50% of the water holding capacity before planting to achieve optimum germination and to give the crop ample moisture to sustain the seedlings between rainstorms. Dormant seeding into dry ground with 15% of water holding capacity or lower can be done under the caution that if rainfall is insufficient or too intermediately spaced out the seeds risk dehydration and permanent wilting and crop failure. Planting the seed deeper in the soil, 30-40 mm, can offset some of the risk but requires more moisture to be received before the seedlings will be imbibed and germinate. Recommended harvest moisture content is 13% or less. In practical terms, the crop is ready to harvest when the seed has taken on red color and is extremely hard when chewed in bite test.

FERTILIZATION: Proper fertilization to achieve desired yield goals should be encouraged.

PRODUCTION POTENTIAL:
In general, wheat requires a minimum of 127 mm of rainfall to produce a crop, and each 25 mm received beyond the 127 mm will produce 5 quintals in yield increase. Under smallholder farming conditions, the average yield in Ethiopia for the last two years has ranged from 15-35 qu/ha, depending on rain and farm practices.

- Morrell Agro Industries (MAI) provides technical support and training to farmers.
- For more information please contact us.

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