

New green manuring *Lathyrus sativus* variety AC Greenfix available in USA

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Note: Dakota Frontier Seeds is a commercial company and is the exclusive nationwide distributor of AC Greenfix in the USA working with seed dealers throughout the USA.

AC Greenfix (Fig. 1), a new variety of grass pea (*Lathyrus sativus*) has been developed to supply green manure nitrogen for both organic and conventional growers, and presents a good new choice for green manuring or green fallow.

Partially replacing summer fallow with green manure legumes not only adds valuable nitrogen, but also reduces soil loss from erosion, increasing soil

productivity for subsequent crops. AC Greenfix overcomes the problems of soil moisture depletion and limited abilities to fix nitrogen that have kept growers from using traditional green manure crops in the past. It is a tremendous boon for organic farmers, the fastest growing agricultural segment in the US. Its features make it ideal for green fallow rotation, required for continued organic certification.



Fig. 1. *Lathyrus sativus* cv AC Greenfix. From left to right: Seeds, 2-3 weeks growth, flowers and pods.

AC Greenfix was developed in Saskatchewan, Canada by Dr. V.O. Biederbeck from studies conducted from 1984 to 1992. It is useful for farmers wishing to increase soil fertility, improve yields and conserve soil. AC Greenfix was officially registered under the Canada Seeds Act and became commercially available in May 1996 from Johnson Seeds, of Arborg, Manitoba, Canada. Its benefits were shown in four years of on-farm studies with only 125-150 mm of rainfall. The studies showed an average production rate of 90-100 kg N/ha, with more than 200 kg produced in one research test plot. Nitrogen fixing begins in the top 30 cm of soil about two weeks after emergence and reaches maximum activity between early and full bloom. About 80 percent of the nitrogen is contained in aboveground growth. Plant growth usually ranges from 40 to 90 cm high, with plants in

full bloom in about 60 days. AC Greenfix will continue to flower and grow as long as there are adequate moisture and temperature.

Early spring planting yields the best results, but is recommended when the temperature is no longer expected to fall below -1 °C. Cool spring weather enhances root development and enables the plant to benefit from winter moisture.

AC Greenfix also survives well during severe drought and heat and responds well to irrigation. With its drought tolerance, moisture efficiency and resistance to many insects and diseases, AC Greenfix is suitable for a variety of climates and soil types, and can enhance the major components of soil quality and boost soil fertility. It has great potential as a soil-

improving crop and as an alternative to commercial fertilisers. Seed cost in the US is about US\$1 per kg and is available exclusively from Dakota Frontier Seeds for the 2003 growing season.

Proper seed inoculation increases legume growth by about 100 percent, raises water use efficiency by 130 percent and reduces weed population. The inoculant must be designated for field peas or vetch, rather than for alfalfa, sweet clover or soybeans. Canadian researchers suggest a high-quality, self-sticking, peat powder-type *Rhizobium leguminosarum* inoculant, similar to that used for peas and lentils. The seed can be planted in the top 8 cm of soil, depending on the available moisture, soil type and protection from possible freezing. It should be covered with at least 3 cm of soil.

The available moisture, climate and intended use of the growing crop determine the plant sowing rate. A rate of 50-70 kg/ha is recommended, and experimentation will help growers find the rate for their situations.

A regular grain drill or air seeder is recommended for planting AC Greenfix as they will not damage the seed or chip the corners, making them susceptible mould and other pathogens and reducing germination.

US researchers in North Dakota, Montana and Oklahoma have studied the forage quality traits of AC Greenfix against 25 other annual and perennial legumes. The crude protein normally runs from 22 to 26%, with a high ranking for total digestible nutrients and relative feed value. Cool season hay forage trials were conducted at North Dakota State University's Carrington Research Extension Center from 1995-2000. The studies showed that AC Greenfix excelled when compared to 15-25 other annual legumes, cereals and cereal/legume mixtures.

For research statistics and other information on AC Greenfix, go to www.acgreenfix.com.