

TRITICALE



Triticale is a crop species resulting from a plant breeder's cross between wheat (*Triticum*) and rye (*Secale*) and is a niche crop in the Yuma area. The name triticale combines the scientific names of the two genera involved. The hybrid is produced by cross pollinating wheat and rye.

Hybrids between wheat and rye date back to 1875, but until recently there was little effort to develop high yielding triticales as a field crop. Plant breeders originally wanted to include the combination of grain quality, productivity, and disease resistance of wheat with the vigor and hardiness of rye.

Even though triticale is a cross between wheat and rye, it is self-pollinating (similar to wheat) and not cross pollinating (like rye). Most triticales that are agronomically desirable and breed true have resulted from several cycles of improvement via advanced breeding techniques. A local Yuma triticale breeder is responsible for some of the world's most productive varieties known.

In the 1960's, approximately 250,000 acres were grown annually in the United States, however markets did not develop as expected, particularly as a food. Today, triticale is grown primarily as a feed grain and as a substantial silage crop.

Feeding trials indicate that triticale has a great future as a feed grain. The protein content of triticale lines has ranged from 10 to 20 percent on a dry weight basis, which is higher than wheat. The amino acid composition of the protein is similar to wheat. And, Triticale produces yields equivalent to, or better than, those for wheat.

Triticale is one of the rare artificial species produced by interspecies cross pollination using traditional breeding techniques.

Triticale also has secondary advantages, such as its high production of straw, which is of direct interest to livestock farmers. For a yield equivalent to wheat or barley, it produces a 30% larger volume of straw.

Along a historical timeline, triticale is a very recent species, but its development has nevertheless taken almost 100 years to complete. The first cross of rye and wheat dates back to 1876, when Scottish botanist Alexander Stephen Wilson succeeded, for the first time, in pollinating soft wheat plants with rye pollen in his greenhouse.

Triticale is the first species of an agricultural crop produced scientifically by humans. Used for both human food and livestock feed, its major advantage over other cereal grasses is a high grain yield even under adverse growing conditions, such as acidic soils or heavy competition from weeds.

The nutritional quality of triticale is superior to both wheat and rye, making it an excellent cereal grain. However, its dough lacks the strength for making bread unless mixed with wheat flour. Current triticale varieties do not possess the grain, milling and flour characteristics of

the wheat used in bread and pasta products. As a result, triticale grain is fed to poultry, cattle and other livestock.

Interest in triticale has developed around two areas of potential use for the grain. The first area of interest is for use as a feed grain because it has proven to be a good source of protein, amino acids and B vitamins. It has shown promise as both a forage crop and as an alternative protein source in formulated rations for cattle, sheep and goats as well as chickens and pigs. Feeding trials with both swine and poultry have shown that triticale can replace corn in diets with little effect on animal performance.

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