

Currents Status and Development Trends of Chinese Oat Breeding and Cultivation

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Introduction

Oat is a specialty minor grain crop in China, and also belongs to the multipurpose crops of food, feed, and medicine. 95% of Chinese oats are naked oats; the other 5% are hulled oats.

During the 1960-1970s, the oat cultivation area was at its peak point, which was 1.7 million hectares. The field area dramatically declined after the 1980s, and the trough in field area came in 2003, which was 0.3 million hectares.

Currently, the area and total yield are about 0.7 million hectares and 0.7 million tons. According to the varieties requirement, quality characters, and industry demands, there is the need to breed high yield, stable yield, desirable maturity time, high quality, lodging resistant, and disease resistant new varieties in China. There is the need to study the supporting technology of oat cultivation, provide good materials for food processing, develop the oat staple food which coincides with Chinese eating habits, and improve the oat industry level.

In the last decades, Sino-Canada oat research cooperation has been carried out actively, the Chinese Agriculture Ministry has put the oat project in the name list and invested financial support, and 10 new widely adapted oat varieties have been licensed, which was a breakthrough for the oat double cropping and cultivation system in the N45° area.

In China, oat has been used for marginal soil, sandy soil and saline soil control; it can grow well in the soil with pH 9.5 and salinity content 0.5%, and make a great contribution for environmental renewal and sustainable agriculture development.

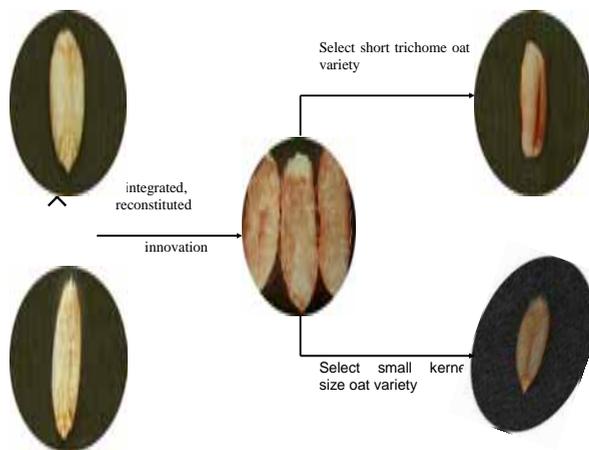


Fig 1 Naked oat germplasm innovation

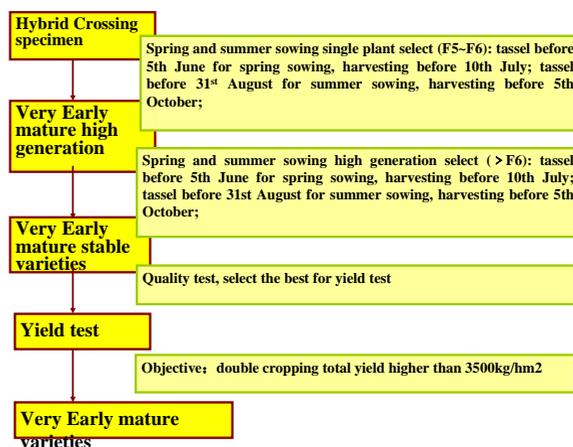


Fig 2 Oat double cropping breeding innovation research strategy

OATS GROWING ON SALINE SOILS BETTER THAN OTHER CEREALS

Table I Saline soils

verity	pH	pH after 5 yr oat planting	salt content/%	salt content after 5 yr oat planting /%	Kernel yield amount t/ha	Straw amount t/ha	Rainfall /mm
Baiyan 2	9.5	9.18	0.48	0.28	2.0-2.5	2.5-3.0	300



Fig 3,4 Oats can grow well in saline soil



Fig 5 The oat straw in saline soil is salty



Fig 6 The root of oat in saline soil is 1.97m depth

Conclusion

Place more emphasis on hullless oat improvement because of its superior nutrition, medicinal value, ability to grow on marginal and saline soils, its ability to flower normally at any latitude (green revolution of oats), its ability to replace corn and soybean meal in animal diets and its history as a safe food and animal feed. Varieties are available now to contribute to the UN's call for higher cereal grain production.

Acknowledgement

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