CHINA OAT RESEARCH SYSTEM

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China Oat and Buckwheat Research Center

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The oats are traditional crop in China, Naked oat is originated in China and has more than 2100 year history in China.
Chinese oat plant area reached 1.13 million hectares in 1960s and declined from 1980s, dropped to about 0.3 million ha in 2003, the lowest in history. After that, the plant area increased gradually. There were about 0.7 million ha of oats in 2015, and total yield about 850 thousands tons, and start increase gradually the recent years, with the change of people’s diet view, foods with health-enhancing functions are favored.
With enriched nutrition and unique healthcare function, Oat food becomes more and more popular, which increases oat research and industry development.
China Agriculture Research System (CARS)

China Oat and buckwheat research system

From 2008-2020, to fulfill the basic technology requirement and research development work for Oat and Buckwheat industry development, lead by Chief Scientist, China Oat and buckwheat research system built the 4 research lab and 16 demonstration station, this two ways combined as the oat industry research and development platform in China.

Ministry of Agriculture of China
Ministry of Finance of China

Chief Scientist (China Oat and Buckwheat Research Center)

The 4 research lab

The 16 demonstration station
The 4 research lab

Genetic breeding lab
(5 Research Scientists)

Pest and disease control lab
(2 Research Scientists)

Cultivation, soil and fertilizer research lab
(5 Research Scientists)

Processing and utilization lab
(3 Research Scientists)
Distribution of China Oat and Buckwheat Research system
Select varieties Suitable for north China, northwest and northeast China.
I Breeding the new varieties with four different maturation stages, including very early, early, middle and late mature varieties. These varieties meet the diversified demand for oats varieties in complex ecological conditions of China.
Π Breeding special new varieties with high quality, such as for popular mills, large grain type oatmeal, oat rice (groats), high protein and high β-glucan varieties. These varieties solving the problem that different processed products demanding for many types of special varieties with high quality.
With the popularization and application of new varieties for special purpose with high quality, driving the production of high quality raw oats material, promoting the diversification of product development and driving the development of oat industry.
The Research on key technology of high yield and high quality in different ecological regions

- According to different varieties
- According to different regions
- According to the different conditions of water and fertilizer
- According to the organic production
- Through the excellent cultivation techniques
- Using the high quality raw oat materials

Cultivation Technology Research

Producing high quality raw oat materials

Producing healthy food
2 Cultivation, soil and fertilizer research

Oats planting on saline and alkali soil in Baicheng

Restore the saline and alkali soil
Oat hay production
Oat hay production
Oat silage production
Main disease and insect control

The main diseases in oat production area are BYDV, powdery mildew and smut.

The main insects in oat production area are aphids and armyworm.
Main disease and insect control

The effective and simple way to control disease is seed coating. A patented technique was used in seed coating to control BYDV, aphids and smut.

Germination difference between coated and uncoated covered oat
Effectiveness of seed coating in covered and naked oat
Evaluation of BYDV resistance in oats
From 2010-2015, more than 200 varieties and lines were evaluated by means of aphids inoculation. High resistant materials were identified, including Baiyan No.2, NZ35, Baiyan 10, Longyan NO.2, VAO-1, AC Rigdon, Qingyin No.1, etc.
4 Processing and utilization lab

Oat-rice

- Oat-rice used naked oats as the raw materials, after lightly milling, then infrared roasting the groats to produce the oat-rice.
- Use oat-rice (groats) to cooking oat porridge.
- Mixed with rice to cook oat-rice meal.

Higher in dietary fiber-beta glucan, Rich in mineral contents, keep the mouth feel
Oat rice processing

Fry oat rice

Xinjiang oat Pilaf
Xinjiang style oat Pilaf

• Challenge of tradition Xinjiang style pilaf
  • Lower in dietary fiber
  • Lower in mineral contents
  • Too much fat and oil

• Advantage of Xinjiang style oat Pilaf
  • Higher in dietary fiber-beta glucan
  • Rich in mineral contents-Ca, Mg, Fe, Zn et al
  • Reduce the fat content
  • keep the mouth feel
Oat cold noodle
Xinjiang style stretched oat noodles

- Challenge of tradition wheat flour noodle
  - Lower in dietary fiber
  - Lower in mineral contents

- Advantage of tradition noodle enriched with oats
  - Higher in dietary fiber-beta glucan
  - Rich in mineral contents-Ca, Mg, Fe, Zn et al
  - Have the same stretch ability, chewing ability, mouth feel was good
Oat meat pie
the addition of oat kernels is about 50%. there are 3 merits including to decrease cost, improve the mouthfeel, decrease the calories and lipid,
Oatmeal processing
4 Processing and utilization lab

Oat Beverages Products

- Oat slurry
- Oat soya-bean milk
- Oat juice
- Oat vinegar
- Oat liquor
- Oat beer
- Oat tea
China–Canada cooperation on oat researching
Over the past twenty years, China and Canada have made remarkable achievements in cooperation in oat science and technology, that lead our oats development of the breeding, cultivation, processing and industry.
International Cooperation on oat researching
Win-win cooperation for oat future!

Thank you!