

The Breeding of Gan Nan Sunflower No1 And Its Popularization

By Gao shouyou Lin chang
Zhao Zhi gang Lu Cheng pu

The sunflower Research Institute of Gan Nan county. Heilongjiang province.

The Gan nan Sunflower (initially G S) No1 is the first edible type in this province which is bred by the Sunflower Research Institute of Gan Nan County, Heilongjiang Province. Since the tests in large area with the allowance to popularize in 1989, the G S No 1 has been proved that it owns the following qualities: It has the steady high production, the the good potentiality to increase production as well as the broad adaptability. It has no branches and the seeds are big and plump with high colour. Thus the G S No1 is welcomed by the planters and buyers .

I. The Breeding of the GSNol

1. The Process

Originally the G S No1 was coded as No 853, which was bred by our institute for 7 generations in 4 years (from 1981 to 1984) on the basis group of the local sunflowers. To breed No 853, we first selected the mixed pollination from the better collective sunflowers, with the combination of the breeding means by interchangeably

selfing. But the feature of the local sunflowers - big plump seeds with bright colour, were still remained. Finally the sunflower No 853 was cultivated with the following qualities: They had the same breeding term, strong stem and leaves, big plump seeds as well as no branches. In 1984, it was verified in our institute that the sunflower No 853 produced 129 kg. each acre, increasing 14.27 percent in comparison with that of the type Hei lao ya zhui. From 1985 to 1986, the average production of each acre was 127 kg. in 21 test points throughout the province, increasing 9.87 percent compared with that of the type Hei lao ya zhui. From 1987 to 1988, the average production of each acre was 135 kg in 9 test points, increasing 15.99 percent compared with that of the type Hei lao ya zhui. In 1989, the sunflower No 853 was passed through the examination by the Heilongjiang Production and Seeds Examining Committee and was named the G S No1.

2. The feature and qualities

The G S No1 belongs to the early or mid-termedly mature type. The breeding term is 110 days and the active accumulated temperature is from 2100 to 2300°C. The G S No 1 has strong adaptability against the thin barren soil as well as the drought. The fruiting rate is also high. The height of the sunflower is about 240 centimetres and each stem has about 31 leaves, without bronehes. The diameter of the sunflowers' flat disc goes from 25 to 30

centimetres. The Sunflower slants at the angle of Grade 5. Shaped like circular cone, the seed is black with the stripes of white colour. Every hundred seeds weigh 12 (grams) g. The shell rate is 40 percent. The seed contains 33.54 percent of fat and 12.22 g. of protein.

3. The essential points of the cultivation.

(1) To choose the field. The field should be selected on the one with the former stubble of the cereal crops and the rotation for 5 year.

(2) To seed at proper time. The selected field should be ploughed and ridged for the preservation of soil moisture and high production in autumn. The seeding time may be set according to the formal active accumulated temperature. In the north Heilongjiang province, it should be grown in the mid-May.

(3) To seed with poison. Choose 0.3 percent of Polybacteriumantigen (多菌灵) (in dencity of 50 percent) and mix it up with the seeds. It will set the preventive effect against the disease of scleromycetes.

(4) The seed spacing. The seed spacing cannot be less than 60×70 centimetres. It's preferable to keep 1590 plants each acre.

(5) The field management. It should be early to start the field managemewt. The young Hants should be thinned and set the final singling in time. When the second mid-term ploughing is made, 5 kg of carbamide should be fertilized each acre.

(6) To make the pollination properly. In the area which lacks of bees, the artificial pollination must be made two or three times. It can add up 10 to 20 percent to the production.

(7) To harvest properly. It should be harvested in time in condition that the sunflower disc turns yellow. the seeds become hardening and most of the leaves become. Withered and yellow and start to fall down. After the havesting, the seeds should be shelled and sunshined properly. It's prohitted that the seeds are put in large pile, or it will milden and rot.

II. The popularization

1. The range of popularizafion. According to the incomplete statistics, the G S No1 has peen spread to 1,000, 000 acres in the whole province from 1990 to 1994 . The planted areas have been developed from Heilongjiang Provence, Liaoning Province and Zner mogolid Jilin provice Liao Ning province He Bei province. Now the papularized area is increased steadily as 1,000,000 aeres each year. Just in the district of Qiqihar, the popularized area was 500, 000 acres in 1995 and 200,000 acres in Gan Nan County. The G S No1 has become the chief type of sunflowers in this province.

2. The preservation of the good qualities of the seeds. The G S No 1 has won the good reputation for its high production and nice qualities. since it was spread. In order to keep; the good qualities, our institute has managed to cast a great deal of

manpower and material: We take the full use of the original breeding bases in Shanya, Hainan Province, Gan Nan as well as the new bases in Bao shan, Xing long. Za ha yan. We send the professional managers to take care in order that we can apply the better seeds in production.

3. The analysis of the economic effects. The spreading of the G S No1 can bring about the high economic profits. If it produces 100 kg. each acre, it will increase 20 percent of production. That means to increase 20 kg. each acre. If 1,000,000 acres are spread steadily each year, 20,000 tons will be increased. If each kilogram of the seeds are sold in 2 yuan, each acre will increase 40 yuan. 1,000,000 acres means 40,000,000 yuan. In addition, the G S No 1 has no branches, which can save the field labour for the peasants to cut them 1,000,000 acres will save 500,000 labour hours, which equals to 5,000,000 yuan. Thus the G S No1 Can bring about good economic profits.