

4. Draught-resistant cotton species

Creation of draught-resistant agricultural crop species and their introduction is very important for this impact mitigation. Long-term research of Genetic Institute of the Academy of Science of Uzbekistan led to creation of new cotton species (1996).

Navbahor – is created by N.G. Gubanova, O.D. Dzhurayev and D.A. Musayev from Genetic Institute. It relates to medium-ripe specie. Period between sprouting and ripeness is 125-127 days. It is resistant to diseases (30-40% less compared with standard species). Average yield is 4.5-5.0 t/ha. Boll mass is 5.6-5.8 g. Fiber output is 40-42%. Optimal density is 75-85 th.plant/ha on fertile lands and 110 th. plant/ha on sandy and non-fertile lands. Specie is responsive to organic and mineral fertilizers (phosphorus, potassium). Recommended ratio of nitrogen, phosphorus and potassium is 1:0.8:0.5. Mineral fertilizers are recommended to apply before July 15. Recommended irrigation scheme is 1-2-0 or 1-2-1.

Gulbahor - is created by N.G. Gubanova, O.D. Dzhurayev, U.I. Ismailov and D.A. Musayev from Genetic Institute. It relates to medium-ripe specie. Period between sprouting and ripeness is 122-125 days. Its development rate is high that allows to pick up it as the first grade by 90-95%.

It is resistant to diseases (60-65% less compared with standard species). It is draught-resistant and salt-resistant. It has mighty root system and effectively uses soil moisture requiring by 30-35% less irrigation water. Average yield is 4.2-4.5 t/ha that is by 0.4-1.1 t/ha higher compared with standard species. Boll mass is 6.3-6.5 g. Fiber output is 35-36%.

Norm of seeds for sowing is from 50-60 kg/ha to 25-30 kg/ha. Optimal density is 70-80 th.plant/ha. Recommended ratio for nitrogen, phosphorus and potassium is 1:0.7:0.5.

In 1998 SANIIRI tested these species in Syrdarya oblast with and without film cover comparing it with standard specie "An-Bayaut" (sowing area was 1,2 ha) (Table 3) .

Table 3 | Main results of cotton "Gulbahor" test

| Cotton specie | With film cover | | Without film cover | | Irrigation water expenses |
|---------------|-----------------|--------|--------------------|--------|---------------------------|
| | Yield | Growth | Yield | Growth | |
| | t/ha | t/ha | t/ha | | t/ha |
| An-Bayaut | 3.40 | | 3.30 | | 8060 |
| Gulbahor | 5.07 | 1.67 | 4.16 | 0.76 | |

Under equal gross irrigation water expenses (moisture recharge + three vegetation irrigations) Gulbahor yield growth compared with standard specie amounted for 23-49% with and without film cover, respectively. Species created by Uzbek scientists were tested in different climatic zones and were highly appreciated by producers. This year area under these species was 70 th.ha. Unfortunately, wide spread of them is delayed.