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Variety of Bread Wheat "Aldane"

"Aldane" is a winter bread wheat (*Triticum aestivum* L.) variety developed by Trakya Agricultural Research Institute (TARI) and registered in 2009. Aldane cross is Bul2477-2/3/093-44/Au//Bez with TE5255-2T-1T-1T-0T pedigree. Crossing was made in 1996 and yield test began in 2001-2002 growing year.

The spike of the Aldane cultivar is moderately long, white, smooth, awnless and compact. It resembles cultivar Pehlivan. The flag leaf is twisted, light-green, and with low glaucousity. Grain is long-oval, hard and red colour and with 37.6 g Thousand Kernel Weight. Aldane is a medium-tall cultivar, similar to Pehlivan. Plant height is between 95 and 105 cm depending on the growing conditions. It is medium early and as it has good adaptation ability, it has been grown throughout Trakya-Marmara region and some other parts of Turkey. It gives high yield both on fertile and less fertile soils. It has resistance to winterkilling and is tolerant to medium drought conditions. Aldane is tolerant to powdery mildew (*Erysiphe graminis* f. sp. *tritici*) and stripe rust (*Puccinia striiformis* f. sp. *tritici*). It is resistant to leaf rust (*Puccinia recondita*). It is susceptible to root rot diseases; if it is grown on flat area lodging could be problem.

Yield test of the Aldane was done for 12 years in Trakya region in Turkey. Yield potential is medium high however, high yield can be obtained if environmental conditions are favorable and applied good agronomic practices. The highest grain yield obtained was 9220 kg ha-1 and mean yield of last 12 years (2003 and 2014) was 6652 kg ha-1 in Trakya growing conditions. The highest yield (9220 kg ha^{-1}) was obtained in 2004-2005 growing season in Tekirdag location. Suggested planting rate is between 450-500 seeds/m^2.

Grain quality is excellent. The mean values of some bread making qualities of the last 5 years (2009 and 2013) are; test weight 81.6 kg, protein content 13.5 %, gluten value 38.2%, gluten index 89.8 % and sedimentation 59.5 ml. The highest quality values in last 5 growing seasons were; test weight 84.1 kg, protein content 15.6 %, gluten value 46.0 %, gluten index 96.5 % and sedimentation 69.8 ml. Some other bread wheat quality characters are; absorption (%) 60-65, and energy value (W) 250-280.

Pre-Basic and Basic seeds of the Aldane cultivar have been produced by Trakya Agricultural Research Institute (TARI). Certified seed of the Aldane are produced by both private companies and state farms.

Picture 1. Spike and grain of the Aldane cultivar

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Variety of Bread Wheat "Selimiye"

"Selimiye" is a winter bread wheat (*Triticum aestivum* L.) variety developed by Trakya Agricultural Research Institute (TARI) and registered in 2009. Selimiye cross is Lau/Agd/3/Odes95//Olv/B16 and selection history is TE5402-4T-1T-2T-0T. Cross was made in 1997-1998 and yield testing began in 2003-2004 growing year.

The spike of the Selimiye cultivar is moderately long, red colour, smooth, awnless and compact. Spikelet and glume is very though. Appearance of the spike looks like Pehlivan and Aldane but colour is red. The flag leaf is twisted, dark-green, and with gloucoisity similar to Pehlivan. The grain is oval, hard, red colour and with 37.1g Thousand Kernel Weight. Selimiye is medium-tall cultivar with plant height 90 to 105 cm depending on the growing conditions. It has resistance to winterkilling, tolerant to medium drought condition and medium early. Selimiye has been grown throughout Trakya-Marmara region. It has high productive tillering capacity. It is suitable for growing on fertile and less fertile soils. Selimiye is susceptible to powdery mildew (*Erysiphe graminis* f. sp. *tritici*). It has

tolerance to yellow rust (*Puccinia striiformis* f. sp. *tritici*) and leaf rust (*Puccinia recondita*) and some root rot diseases. If the variety is grown on fertile and flat area in combination with the use of high seed rate and fertilizers, lodging could be problem.

Selimiye was tested for 11 years in Trakya region in Turkey. It has high yield potential. Average yield of the last 11 years between 2004 and 2014 growing year in Edirne condition was 7553 kg ha^{-1}. The highest yield with 9180 kg ha-1 was obtained in 2013-2014 growing season in Edirne location. Suggested planting rate is 450-500 seeds/m^2.

Selimiye has good bread making quality characteristics. Some of the quality mean value of the last 5 years (2009 and 2013) are; test weight 83.2 kg, grain protein content 12.4%, gluten value 37.2 %, gluten index 84.7% and sedimentation 51.6 ml. In the same period (2009-2013) the highest values were; test weight 85.9 kg, grain protein content 14.7%, gluten value 44.1%, gluten index 92.9% and sedimentation 68.8 ml.

Pre-Basic and Basic seeds of the Selimiye cultivar have been produced by Trakya Agricultural Research Institute (TARI). Certified seeds of Selimiye are produced by both private companies and farmers and state farms.

Picture 1. Spike and grain of the Selimiye cultivar

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Variety of Triticale "Ümranhanım"

"Ümranhanım" is a hard red winter triticale (x*Triticosecale* Witt.) cultivar developed by East Anatolia Agricultural Research Institute and registered in 2010 for its high level of winter hardiness. Under the controlled environment experiment for cold tolerance Ümranhanım was resistant to -17^{0}C. It has the highest survival rate among the tested genotypes.

Ümranhanım was selected from the advanced material provided by Bahri Dagdas International Agricultural Research Institute (BDIARI) in 2002. Ümranhanım was released primarily for its superior adaptation to dryland agriculture in East Anatolia. It is tall (120-130 cm) with good straw strength, high yielding, early and resistant to foliar and spike diseases. When it was tested for 4 years at 4 locations (Ilıca, Pasinler, Mus, Erzincan) in the eastern part of Turkey, yield of Ümranhanım cv (4862 kg/ha) was higher than check varieties Tatlıcak 97 (4672 kg/ha), MIKHAM (3825 kg/ha), Melez (3931 kg/ha) and Karma (4144 kg/ha). In addition, Ümranhanım has the best yield stability in the region compared to other varieties.

It has slightly colored spikes with awns. Spikes are long, and dense with brown glumes. Kernels are semi-hard and red in color. The seed is elongated and oval-shaped.

It has a winter growth habit with high-tillering capacity. It is mid-early maturing, drought and lodging resistant and its response to fertilizer is high. Threshing ability is good.

1000-kernel weight 22,4-45,0 g; the long-term range is 9,9-16,2% grain protein content; test weight is 71,3-76,6 kg/hl; digestible protein is 9,5-10,8; crude oil is 2,3-2,5%; crude cellulose is 1,8-2,0%; grain hardness is 57,3%. Ümranhanım is resistant to yellow rust (*Puccinia striiformis*), leaf rust (*Puccinia recondita*), stem rust (*Puccinia graminis*), powdery mildew (*Erysiphe graminis*), common bunt (*Tilletia foetida*) and smut (*Ustilago tritici*) in field conditions.

It has higher grain yield than barley and oats under dryland conditions in the region. It is recommended for dryland areas in Eastern Anatolia Region and the other cold areas. Its grain can be used both for human consumption as well as animal feed.

Certified seeds of Ümranhanım are produced by both private companies and state farms.

Figure 1. Spike and grain of the Ümranhanım cultivar

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Variety of Barley "Altıkat"

"Altıkat" is six rowed spring barley (Hordeum vulgare L.) cultivar developed by GAP International Agricultural Research and Training Center (GAPIARTC) and it was registered in 2011.

Altıkat was selected from the cross Arta/4/Arta/3/Hml-02//Esp/1808-4L, which was made by International Center for Agricultural Research in the Dry Areas (ICARDA). The selection history is ICB96-0601-0AP-10AP-0AP. It was distributed by ICARDA in IBYT-LRA-M trial and selected by GAP IARTC in Diyarbakır in 2003-2004 growing season.

This cultivar was first tested in yield trial for two years (2003/04-2004/05) and selected for regional trials. It was tested for three years and in seven locations in Southeastern Anatolia Region of Turkey. It was proposed as candidate cultivar to registration and certification center in 2007, because of its high stability and superiority. It was registered in 2011.

The morphological characters: Altıkat has vertical development, white leaf color, long stems, early maturity. The plant height of Altıkat (100-130 cm) is shorter than Şahin 91 and Sur 93, also the maturity of Altikat is earlier than Şahin 91 and Sur 93 cultivars.

Test weight of Altıkat is similar to Akhisar 98 and Vamıkhoca 98, but less than Sur 93 and Şahin 91. The grain aleurone layer color is weak in seed with thin chaff. The technological characteristics of Altıkat were determined through 3 years testing by Ankara Central Quality Laboratory for field crops with Şahin 91, Sur 93, Atılır and Fırat check cultivar. Altıkat's average thousand grain weight, hectoliter weight and protein content were less (5%-15%) than two rowed barley cultivars which were used as check in study.

Altıkat was tested by registration and certification center in 7 environments in 2008-2009 and 2009-2010 seasons. The yield average of Altıkat was 4745 kg ha-1, while the yield average of checks was 4475 kg ha-1. The results of yield trials showed that Altıkat has 6% more than checks averages. The stability results indicated that Altıkat had b value (0.9777) to near 1 and positive a value (35.8). Moreover, Altıkat was the best yielding genotype in bad conditions, while second after Atılır cultivar in good conditions. The results showed that the yield of Altıkat could be higher after Atılır in good conditions, but it is yielding 6% more than checks in bad conditions. Altıkat is recommended for farms because of high yielding and stability in Southeastern Anatolia Region of Turkey.

Figure 1. Spike and grain of the Altıkat cultivar

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