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**TrDR TR Akbasak 073/44 Cultivar Source: Selection from a Turkish landrace, TR
CID:236 SID:_**

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Durum Wheat Breeding
*Current Approaches
and Future Strategies*

Volume 2

Part IV: Breeding Strategy and Methodology
Part V: Applied and Strategic Research
in Durum Breeding Programs

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Chapter 33

Durum Wheat in Turkey: Yesterday, Today, and Tomorrow

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INTRODUCTION

Durum wheat [*Triticum turgidum* L. ssp. *durum* (Desf.) Husn.] is cultivated on approximately 10 percent of the world's wheat area. In the Mediterranean basin, around 20 million t, or 60 percent of world production, is produced on approximately 11 million ha, or 85 percent of the world durum area. Processing and marketing of durum wheat are also concentrated in the region (Nachit, 1998).

Turkey is among the ten largest wheat producers in the world (Braun, 1999). Wheat is grown on 9.4 million ha, and annual production varies from 18 to 20 million t. Yield is around 2 t·ha⁻¹. Table 33.1 shows the area sown to wheat, production and average grain yield from 1897 to 1998.

Approximately 25 to 30 percent of total wheat acreage and production is devoted to durum wheat. Average annual production is 5 million t. Turkey is the leading durum wheat producer among West Asian and North African (WANA) countries. Durum wheat is grown primarily in three regions: the central plateau and transitional zone, the southeast, and the coastal zone. They meet 50 percent, 26 percent, and 12 percent of total durum wheat production, respectively (Eser, 1998).

Durum grain is consumed in Turkey as follows: 850,000 t as bulghur, 360,000 t as pasta, and 75,000 t for other purposes (Eser, 1998). Turkey was in 1998 the fifth largest macaroni producer worldwide, with 750,000 t; ap-

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of the macaroni production capacity is in Gaziantep (Southeast Turkey), 35 percent in Central Anatolia, and 25 percent in the Aegean region (Oztah-tacı, 1998).

HISTORICAL BACKGROUND

In the early 1930s, durum was the dominant wheat type in most wheat-growing regions of Turkey. Durum wheat covered 80 percent of the total wheat area in Southeast Anatolia, 70 percent in Central Anatolia, 60 percent in Thrace (European Turkey), and 40 percent in the coastal areas (Tuncer, 1964). The major landraces grown in the mid-1950s in Central Anatolia were the cultivars Uveyik, Sahman, and Kunduru; cultivars Bagacak, Sorgul, Beyaziye, Havrani, Menceki, and Iskenderi in Southeast Anatolia; cultivars Karakilcik, Kocabugday, Kokana, and Akbasak in Marmara and Thrace; cultivars Akbasak, Akkusen, and Cambugdayi in the Aegean region; and cultivars Kibris bugdayi, Amik, and Havrani in the Mediterranean region (Kün, 1981).

Durum wheat cultivars Kunduru 414/44, Sarı Bursa 7113, Kunduru 1149, and Berkmen 496 have been selected from landraces and were widely grown in Central Anatolia and the transitional zones. 'Akbasak 073/44' and 'Karakilcik 1133' were landrace selections grown in Marmara and Thrace (Kün, 1981). Eight durum wheat varieties were bred prior to 1969. Disease screening, in particular for bunt, smut, and rust, emerged as quality analysis started in the early 1950s.

From 1950, mainly due to increased mechanization, the wheat area expanded from 4.4 to 7 million ha in 1960 and 8.6 million ha in 1970. However, the average national grain yield did not improve dramatically until improved bread wheat cultivars from abroad were introduced on a larger scale. From 1950 to 1970, bread wheat cultivars such as Mentana, Floransa, Sonora 64, Lerma Rojo 64, Super X, Penjamo 62, and Bezostaja 1 have been introduced to Turkey and replaced durum cultivars to a large extent due to their much higher grain yields.

Wheat research in Turkey started in the 1920s. After the founding of the Turkish Republic in 1923, steps were taken to improve the agrarian standard of living. The first Seed Improvement Station was established in Eskişehir in 1925, followed by stations in Adapazari, Yeşilköy (Istanbul), Ankara, Samsun, Adana, and Antalya. Wheat breeding began at Eskişehir in 1925 and with a cereals agronomic research program initiated four years later (Zencirci et al., 1996). Agronomy research at Eskişehir ARI concentrated on crop rotation experiments on less fertile and slightly hilly fields to obtain stable and higher wheat yields, while the ARI in Ankara carried out

Year ^a	Source ^b	Variety name ^c	Cross	Cross # and pedigree	ME ^d	Rht- genes ^e	Country of origin ^f	Released by
1989	4	SHAM 1	FRIG'S=WAHA'S=PLC'S/RUF F'S//GTA'S/RHTE'S	CM17904	1/4	Rht1	Mex-Syr	Cukurova ARI
2002	3	SOLEN 2002	STN/ALTAR/3/GS/CNDO	CD72067-A-1S-0S-1S-4S-2S-0S	1/2/4	Rht1	Mex-izm	Aegean ARI
1997	5	SVEVO			1	Rht1	Italy	
2002	3	TUTEN2002	ALTAR/ATO/3/GS/FG/CNDO	CD72352-A-1S-11S-3S-5S-0S	1/2/4	Rht1	Mex-izm	Aegean ARI
1997	5	ZENIT			1	Rht1	Italy	
<i>Spring durum wheat with permission for seed multiplication</i>								
1995	5	COSMODUR			1	RHT1	France	
	5	DURAKING			1	RHT1	USA	
<i>Officially released winter and facultative durum wheats</i>								
<1970	1	AKBASAK 0731444			12	No	TK	Ankara
1998	1	ALTIN 40/98			8/12	No	TK-Esk	Eskisehir
1995	1	ALTINTAC 95	KND//68111/WARD	YE0313-18E-3E-2E-0E	9/12	No	TK-Ank	Ankara
1998	1	ANKARA98			9	No	TK-Ank	Ankara
<1970	1	BERKMEN 469	Sel. from Landrace		9/12	No	TK-Ank	Ankara
1999	1	C-1252			8	Rht1	TK-Ank	Ankara
1979	1	CAKMAK 79	UVY162/61.130		9/12	No	TK-Ank	Ankara
1991	1	KIZILTAN91			9/12	No	TK-Esk	Eskisehir
2000	5	KUMBET 2000			9/12	No	TK-Esk	Eskisehir
1967	1	KUNDURU 1149	Sel. from Landrace		9/12	No	TK-Esk	Eskisehir
2002	1	MERAM2002			9/12	No	TK-Kon	Ankara
2000	1	MIRZABEY 2000			9/12	No	TK-Ank	Ankara
1997	1	SELÇUKLU 97	073/44*2/0M/3/DF-72//61-130/ÜVEYK 162	YA 03986-21A-1A-5A-6A-1A-0A	12	No	TK-Ank	Konya