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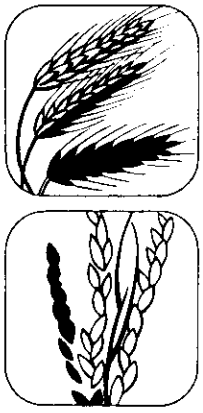
TrAE FX Florence x Aurore **Cultivar Source: Institut National Agronomique, Versailles FX CID:1722 SID:1**

Dana G Dalrymple, Emile Schribaux (breeder). The development of Florence x Aurore wheat. In: Development and spread of high-yielding varieties of wheat and rice in the less developed countries: Fifth edition *Foreign Agricultural Economic Report* nr.95 pp119-120 (Washington DC US: United States Department of Agriculture USDA, 1976) The statement was repeated on p129 of the Sixth edition (1978) AGRIS 79-443653. The cultivar is exploited in various countries, see TrAE DZ Florence Aurore, TrAE LY Florence x Aurore, TrAE MA Florence x Aurore C (2511), TrAE TN Florence Aurore.



Development and Spread of HIGH-YIELDING VARIETIES OF WHEAT AND RICE in the Less Developed Nations

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PREFACE

This bulletin represents the fifth edition of this report. The preceding edition was issued in July 1974 under the same title, while earlier editions, titled *Imports and Plantings of High-Yielding Varieties of Wheat and Rice in Less Developed Nations*, were issued in February 1972, January 1971, and November 1969. All are supplanted by this edition.

In this edition the material has been updated through 1974/75 and several changes have been made:

- Chapter I has been rewritten to include more precise varietal definitions.
- In Chapter II, the portion on the origin of high-yielding wheat varieties has been expanded.
- In Chapters III and IV, a section on the Near East has been added, including West Asia and North Africa. Within each chapter, the coverage of high-yielding varieties in Africa and Latin America has been expanded considerably.
- In Chapter III, material has been included on rice improvement in Communist nations which was formerly contained in the Appendix.

The statistical portion of this report focuses on the 10 crop years from 1965/66 to 1974/75, a period that might be called the first decade of the "green revolution." Some fragmentary preliminary estimates are included for 1975/76. Data reported are based on information in hand as of April 1976.

As in the past, many individuals and organizations have cooperated generously in the preparation of the report. Among the individuals, I would particularly like to acknowledge the many contributions of Dr. R. Glenn Anderson of the International Maize and Wheat Improvement Center (CIMMYT) and Dr. T. T. Chang of the International Rice Research Institute (IRRI). Collection of country data was largely made possible through the assistance of agricultural attachés of the U.S. Department of Agriculture (USDA) and food and agriculture officers of the Agency for International Development (AID). I am also indebted to scientists from the Agricultural Research Service, USDA, and staff members of the Ford Foundation, the Rockefeller Foundation, and the Food and Agriculture Organization of the United Nations (FAO).

FAO plans to publish some similar, but more comprehensive, area data for several grains in the near future. A review of the preliminary FAO data suggests the use of a broader definition of high-yielding varieties than is utilized here. This report, as will be noted, is largely limited to semi-dwarf varieties.

While an attempt has been made to make the report as accurate as possible, some errors have undoubtedly gone undetected. I bear the responsibility.

Funding for this project was, as in the past, provided through the Office of Agriculture, Technical Assistance Bureau, AID. Some work was done on this project while I was on part-time detail to the Bureau for Program and Policy Coordination, AID.

B. THE DEVELOPMENT OF FLORENCE X AURORE WHEAT[1]

Florence x Aurore has long been one of the leading improved wheat varieties in North Africa. It played a role in the early Mexican breeding program (see Chapter II) and has served as a parent for numerous other improved varieties. Yet its origins have been obscure. Since it represents one of the better improved varieties, it may be useful briefly trace its origin and development.

Florence x Aurore was the result of a cross between two Australian varieties, Florence and Aurore, made in 1920 by Emile Schribeaux of the Station d'Essais de Semences of the Institut National Agronomique in Paris.

Florence, in turn, represented a Australian cross made by William J. Farrar in 1901 (and named in 1906) between two unnamed varieties descended from White Naples,[2] Improved Fife,[3] and Eden (Fulcaster). Florence was widely planted in Australia and was also grown in other countries.[4]

Aurore was also an Australian cross, made by Farrar, between Jacinth (from A. E. Blount, Colorado[5]) and Ladoga (a well-known spring red wheat of Russian origin[6]).[7] It was developed by Henry de Vilmorin in France.

Florence x Aurore was one of a packet of 19 F_2 generation varieties of seeds sent to Dr. F. Boeuf in Tunisia by Dr. Schribeaux on December 2, 1922.[8] It was released for general cultivation in 1930/31 and is still widely

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[1] Based, except as noted, on letters and materials from: P. Auriau, Station Centrale de Génétique et d'Amélioration des Plantes, CNRA, Versailles, September 10, 1975, January 6, 1976; N. H. Luig, Plant Breeding Institute, University of Sydney, Castle Hill, New South Wales, October 1, 1975, January 5, 1976.

[2] "Richelle Blanche de Naples." Provided by Vilmorin. Described in *Les Meilleurs Blés,* Vilmorin-Andrieux, Paris, 1880, p. 44. Also see S. L. Macindoe and C. W. Brown, *Wheat Breeding and Varieties in Australia,* Department of Agriculture, New South Wales, Sydney, Science Bulletin No. 76, 1968 (3rd ed.), p. 216.

[3] A white-grained selection from Red Fife made by A. E. Blount of Colorado State University (Macindoe and Brown, *op. cit.*, p. 141).

[4] For background information on Farrar and Florence, see: J. Allen Clark, "Improvement in Wheat," *Yearbook of Agriculture, 1936* (USDA), pp. 239-240; and H. Wenholz, *The Improvement of Australian Wheat; Milestones in its Progress,* Department of Agriculture, New South Wales, Sydney, 1937, pp. 1-3.

[5] Possibly a selection from Fife. According to Clark (*op. cit.*, p. 222): "A. E. Blount at the Colorado Agricultural Experiment Station was among the first to breed varieties of hybridization. Several of his wheats were sent to Farrar of New South Wales, and these entered into the parentage of some of Farrar's best wheats." No mention of Jacinth, however, has been found in USDA or Colorado State University files.

[6] See, for example, J. A. Clark and B. B. Bayles, *Classification of Wheat Varieties Grown in the United States in 1939,* U.S. Department of Agriculture, Technical Bulletin No. 795, June 1942, p. 116.

[7] Macindoe and Brown, *op. cit.*, pp. 57, 142.

[8] Dr. Auriau kindly provided a copy of Schribeaux's cover letter and a list of the other 18 varieties. Also see F. Boeuf, "Le Blé en Tunisie," *Annals du Service Botanique et Agronomique,* Tunis, Tome VIII, 1932, pp. 60-61.

grown. Florence x Aurore, under the name Marroqui, was used in the early Mexican breeding work.[9]

Lines subsequently selected from Florence x Aurore in Tunisia include Ariana 8 and Koudiat 17. Lines selected elsewhere include: 8193 in Algeria, 2511 in Morocco, and Blé d'Avril in France. A Florence x Aurore strain, selected in 1925, is known as Cailloux (registered in Tunisia as No. 588). Florence Aurore is also included in the parentage of a number of varieties, including Karaj 2 in Iran and Lakehish in Israel.

[9] Norman E. Borlaug, "Wheat Breeding and Its Impact on World Food Supply," *Proceedings of the Third International Wheat Genetics Symposium*, Canberra, 1968, p. 5.