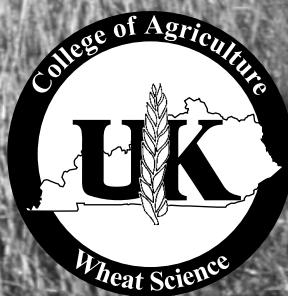




COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY • COLLEGE OF AGRICULTURE

A Comprehensive Guide to
Wheat Management in Kentucky



A Comprehensive Guide to
Wheat Management in Kentucky



Developed by:

University of Kentucky Multidisciplinary Extension and Research Team

Written by:

Morris Bitzer, Agronomy, Co-editor

James Herbek, Agronomy, Co-editor

J. D. Green, Agronomy

John Grove, Agronomy

Donald Hershman, Plant Pathology

Douglas Johnson, Entomology

James Martin, Agronomy

Sam McNeill, Biosystems and Agricultural Engineering

Lloyd Murdock, Agronomy

Doug Overhults, Biosystems and Agricultural Engineering

Lee Townsend, Entomology

Richard Trimble, Agricultural Economics

David Van Sanford, Agronomy

Acknowledgments

The authors acknowledge the following for their assistance with this publication.

Photographs

Cover: Provided by Kentucky Prairie Farmer Magazine.

Photographs in this publication are keyed to the following sources:

- 1—Kansas State University College of Agriculture
- 2—Michigan State University College of Agriculture
- 3—University of Kentucky College of Agriculture (Bill Mesner)
- 4—University of Kentucky College of Agriculture (James Herbek)
- 5—University of Kentucky College of Agriculture (Lee Townsend)

Partial financial support for some of the research reported in this manual: Kentucky Small Grain Growers Association, Louisville, Kentucky; Kentucky Integrated Pest Management Program; Wheat Science Group, UK College of Agriculture.



Some material contained in this publication was adapted with permission from: Alley, et al., *Intensive Soft Red Winter Wheat Production* (No. 424-803), Virginia Cooperative Extension Service, Blacksburg, Virginia (1993), and Shroyer, James P., et al., *Spring Freeze Injury to Kansas Wheat* (C-646), Agricultural Experiment Station and Cooperative Extension Service, Kansas State University, Manhattan, Kansas (March 1995).

Dennis Duross, Debbie Allen, and Linda Kiesel, University of Kentucky, College of Agriculture, for their professional assistance in editing and preparing this manual for publication.

Mention or display of a trademark, proprietary product, or firm in text or figures does not constitute an endorsement and does not imply approval to the exclusion of other suitable products or firms.

Contents

Section 1—Introduction	5
Section 2—Growth and Development	7
Section 3—Cultural Practices	8
Field and Soil Selection	8
Crop Rotation	8
Variety Selection	8
Planting Practices	8
<i>Planting Date</i>	9
<i>Seed Placement</i>	9
<i>Seeding Rate</i>	9
<i>Row Width</i>	10
<i>Tramlines</i>	11
Winterkill and Freeze Injury	11
Determining Plant Populations, Tiller, and Head Counts	11
<i>Plant Populations</i>	11
<i>Tiller and Head Counts</i>	12
Lodging Control and Plant Growth Regulators	12
Section 4—Planting Methods	13
Drilling	13
Broadcasting	13
Aerial Seeding	14
No-tillage Planting	14
Section 5—Fertilizer Management	16
Nitrogen	16
Other Nutrients	17
Section 6—Weed Management	18
Weed Scouting	18
<i>Survey Site</i>	18
<i>Weed Map</i>	19
Weed Identification	19
Weed Control Practices	23
<i>Cultural Practices</i>	23
<i>Chemical Control</i>	23
Section 7—Disease Management	25
Scouting for Diseases	25
How Preplant Decisions Affect Diseases	25
<i>Variety Selection</i>	25
<i>Crop Rotation</i>	25
<i>Tillage</i>	26
<i>Seed Quality, Seed Fungicides, Seeding Rate, and Planting Method</i>	26
<i>Planting Date</i>	26
<i>Nitrogen Fertility</i>	26
Fungicide Seed Treatments	26
Foliar Fungicides	30
Disease Descriptions	32
<i>Barley Yellow Dwarf (BYD)*</i>	32
<i>Wheat Soil-borne Mosaic</i>	33
<i>Wheat Spindle Streak Mosaic</i>	34
<i>Powdery Mildew</i>	34
<i>Leaf Blotch Complex (<i>Stagonospora nodorum</i> and <i>Septoria tritici</i> leaf blotches)</i>	34
<i>Leaf Rust</i>	35
<i>Glume Blotch</i>	35
<i>Head Scab</i>	36
<i>Loose Smut</i>	36
<i>Take-all</i>	37
Section 8—Insect Pests	38
Field Scouting	38
Key Factors	38
Insecticide Selection	38
Major Pests	39
<i>Aphids</i>	39
<i>Armyworm and Fall Armyworm</i>	39
<i>Cereal Leaf Beetle</i>	39
<i>Hessian Fly</i>	39
Scouting Procedures	39
<i>Aphids</i>	39
<i>Armyworm</i>	40
<i>Cereal Leaf Beetle</i>	41
<i>Hessian Fly</i>	41
Section 9—Economics of the Wheat Enterprise in Kentucky	42
Wheat Enterprise Economics	43
Growing Wheat on Rental Land	45
Summary and Conclusion	46
Section 10—Harvesting, Drying, and Storing Wheat	47
Harvesting	47
<i>When To Start?</i>	47
<i>Operating the Combine</i>	47
<i>Header Choices</i>	47
<i>Other Techniques</i>	48
<i>Check Harvest Losses</i>	48
Drying	48
<i>In-bin Drying</i>	49
<i>High-speed Dryers</i>	49
<i>A Word of Caution</i>	49
<i>Avoid Overdrying When Possible</i>	49
Storing	50
Supplemental Section	51
Freeze Damage	51
Other Problems	53
References	53

