

Wheat Variety Selection

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Main Regions of Wheat Production in California

- Fall-Sown Spring Wheat (Hard Red, Hard White):
 - Central Valley
 - Rainfed (Central Valley foothills and similar areas)
 - South-central coastal areas
- Fall-Sown Durum:
 - Imperial Valley
 - San Joaquin Valley
- Fall-Sown Winter Wheat (Soft White, Club, Hard White):
 - Intermountain area (Northeastern California)
- Spring-Sown Spring Wheat (Soft White, Club, Hard Red, Hard White):
 - Intermountain area (Northeastern California)

General Considerations

- Importance of diversity in selecting varieties
 - Spread out production risk
 - Willing to change varieties year to year
- Varieties appropriate for cropping system
- Varieties meet market requirements
- Varieties can be profitably produced

Traits to Consider

- Grain yield potential
 - Integration of many factors
 - Base selection on multi-year performance data
- Growth and development characteristics
 - Vernalization requirement?
 - Day length insensitivity?
 - Time to heading?
 - Time to maturity?

Traits to Consider

- Growth pattern
 - Stand establishment
 - Tillering capacity
- Stature (plant height)
 - Stress environments
 - High input systems

Traits to Consider

- Disease reactions
 - Stripe rust: All regions except IV, S. Calif.
 - Septoria tritici blotch: Sac and N. SJ Valley
 - BYDV: All regions
 - Leaf rust and powdery mildew: Sporadic
 - Bacterial blights (black chaff, etc.): Minor
 - New/emerging diseases: Be alert

Traits to Consider

- Insects and other pests
 - Aphids: Avoid varieties that support high infestations
 - Avoid the most sensitive varieties
 - Monitor crop, adjust variety selection from year to year
- Tolerance to pesticides
 - Use varieties that show only minimal crop damage from fungicides, insecticides, and herbicides

Traits to Consider

- Grain protein content
 - Hard wheat and durum wheat vs soft wheat
- End-use quality
 - Flour yield and millability
 - Starch quality
 - Nutrients, minerals, enzyme levels
- Market access traits
 - low alpha amylase (falling number)
 - low cadmium (durum)

Traits to Consider

- End-use as green chop
 - Boot stage harvest
 - Taller stature, early maturing
 - High biomass
 - Soft dough stage harvest
 - Short to medium stature, early-midseason maturing
 - High biomass
 - Lodging resistant, disease resistant

Sources of Information

- UC Statewide Small Grains Testing Program
 - Agronomic characters: Plant height, lodging, heading/maturity
 - Disease reactions: Stripe rust, leaf rust, Septoria tritici blotch, BYDV, powdery mildew, other
 - Grain yield, bushel weight, kernel weight
 - Quality: Protein content, milling/baking (CWC lab)

Sources of Information

- UC Small Grains website ([//smallgrains.ucdavis.edu/](http://smallgrains.ucdavis.edu/)):
 - Results of UC Statewide Small Grains Testing Program
 - Agronomy Progress Reports from 1998 to 2012
 - Wheat variety descriptions
 - All varieties evaluated from mid-1970's to 2011

Sources of Information

- California Wheat Commission website:
(www.californiawheat.org/):
 - Certified Wheat Seed Buying Guide
 - California Wheat Crop Quality Reports
 - California Wheat Seed Dealers and Distributors Guide

Sources of Information

- California Wheat Collaborator Meeting
 - Held annually
 - Participants represent all segments of wheat industry
 - Breeders and researchers, farm advisors and consultants, seed company reps, millers and bakers, growers and others
 - Discussions on potential of new varieties and elite germplasm for production in key regions of CA; other issues of interest