

PERSPECTIVES ON AN ENDOWED CHAIR IN WHEAT BREEDING

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Outline

- Personal disclaimer
- CSU Wheat Breeding Program
 - Wheat breeders
 - Landmark varieties
 - Benchmarks of success
- Arguments in favor of an endowed chair
 - Examples from wheat breeding
 - Succession planning
 - The breeder's commitment
 - Graduate student training and research




Disclaimer



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COLORADO

Wheat Farmer

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Quality Needs of Japan

For the past several years U. S. wheat producers through Great Plains Wheat, Inc. and Western Wheat Associates and the U. S. Department of Agriculture have cooperated in an all-out effort to market U. S. hard red winter wheat in Japan.

Generally the efforts have been reasonably successful in convincing the Japanese government to establish a reliable second source for their increasing bread requirements.

Very extensive laboratory and commercial trials of Great Plains hard red winter wheat have been conducted by the mills and bakeries in Japan. The standard of comparison has always been Canadian Manitoba because the bread wheat mill blend has been 80 to 90% Manitoba.

However, the Japanese millers and bakers are somewhat less than enthusiastic about the prospects of substituting a substantial amount of U. S. hard red winter wheat for a similar amount of hard red spring wheat in their blends. The established blend was, to them, quite satisfactory and *any change* would create problems.

However, to change from a strong spring wheat mill-

Hard red winter wheat is greatly improved as a bread wheat if during milling or baking the flour is matured with an oxidant. This technical response to oxidation is no problem in the United States but it is a handicap in certain foreign countries which prohibit the bleaching of flour or the use of most oxidants.

If the United States is to compete successfully against Canadian wheat in Germany, the United States must grow the kind of wheat the German millers and bakers prefer and then assure them its availability for export by proper quality identification.

Another factor in German imports will be the agricultural policy of the Common Market. The long-range prospects indicate that Germany's import quality requirements will remain largely for strong blending wheat for which the competitive standard is Canadian Manitoba.

Quality Needs of United Kingdom

Milling in the United Kingdom is as sophisticated as in the United States, with mills having many different blends.

The United Kingdom produces about 1/3 of its own needs but the English wheat is weak, better suitable for

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Agronomist Employed At CSU

Dr. Byrd C. Curtis of Oklahoma State University will join the staff of Colorado State University to direct research to improve the quality of wheat varieties grown in Colorado.

On Jan. 1 Dr. Curtis will become associate professor of field crops at the University and associate agronomist for the Experiment Station.

His research project, financed by an appropriation from the state legislature, is designed to help produce wheat with good milling and baking characteristics. Project plans call for the use of plant breeding and genetic and cultural methods in attempting to develop higher quality wheat.

Preliminary work on the study started last July 1 and Dr. Curtis will assume direction on Jan. 1.

Dr. Curtis has B.S. and Ph. D. degrees from Oklahoma State and an M.S. from Kansas State University. He has an extensive research background.

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Byrd Curtis
1963-1968



Introducing
VONA.
The short wheat
that's long on grain.

Colorado *Wheat
Farmer*

November-December 1976





Russian Wheat Aphid



Jim Quick
1980-1998

PLANT

HALT

CERTIFIED WHEAT SEED

*It's the **ONLY** one*
with Russian wheat aphid
resistance! All other wheat
varieties are susceptible
to damage from this aphid.





Jim Quick
1980-1998



*'Above' Clearfield** Wheat (2001)

Dailey, CO



'Hatcher' Winter Wheat (2004) Yuma, CO



'Snowmass' Hard White Wheat (2009)

Lamar, CO



'Byrd' Winter Wheat (2011) Roggen, CO



CSU Wheat Breeding Program

Varieties Released since 1973

Hard Red				Hard White		Clearfield*	
Baca	1973	Prowers	1997	Avalanche	2001	Above	2001
Lindon	1975	Prairie Red	1998	Snowmass	2009	AP502 CL	2001
Vona	1976	Prowers 99	1999	Antero	2012	Bond CL	2004
Wings	1977	Ankor	2002	Sunshine	2014	Protection	2004
Sandy	1981	Hatcher	2004			Thunder CL (HWW)	2008
Duke	1981	Ripper	2006			Brawl CL Plus	2011
Hail	1982	Bill Brown	2007				
Carson	1986	Denali	2011				
Lamar	1988	Cowboy	2011				
Yuma	1991	LCS Mint	2011				
Jules	1993	Byrd	2011				
Akron	1994	Avery	2015				
Halt	1994	Langin	2016				
Yumar	1997						

<http://wheat.colostate.edu> – Breeding Program (inc variety information)

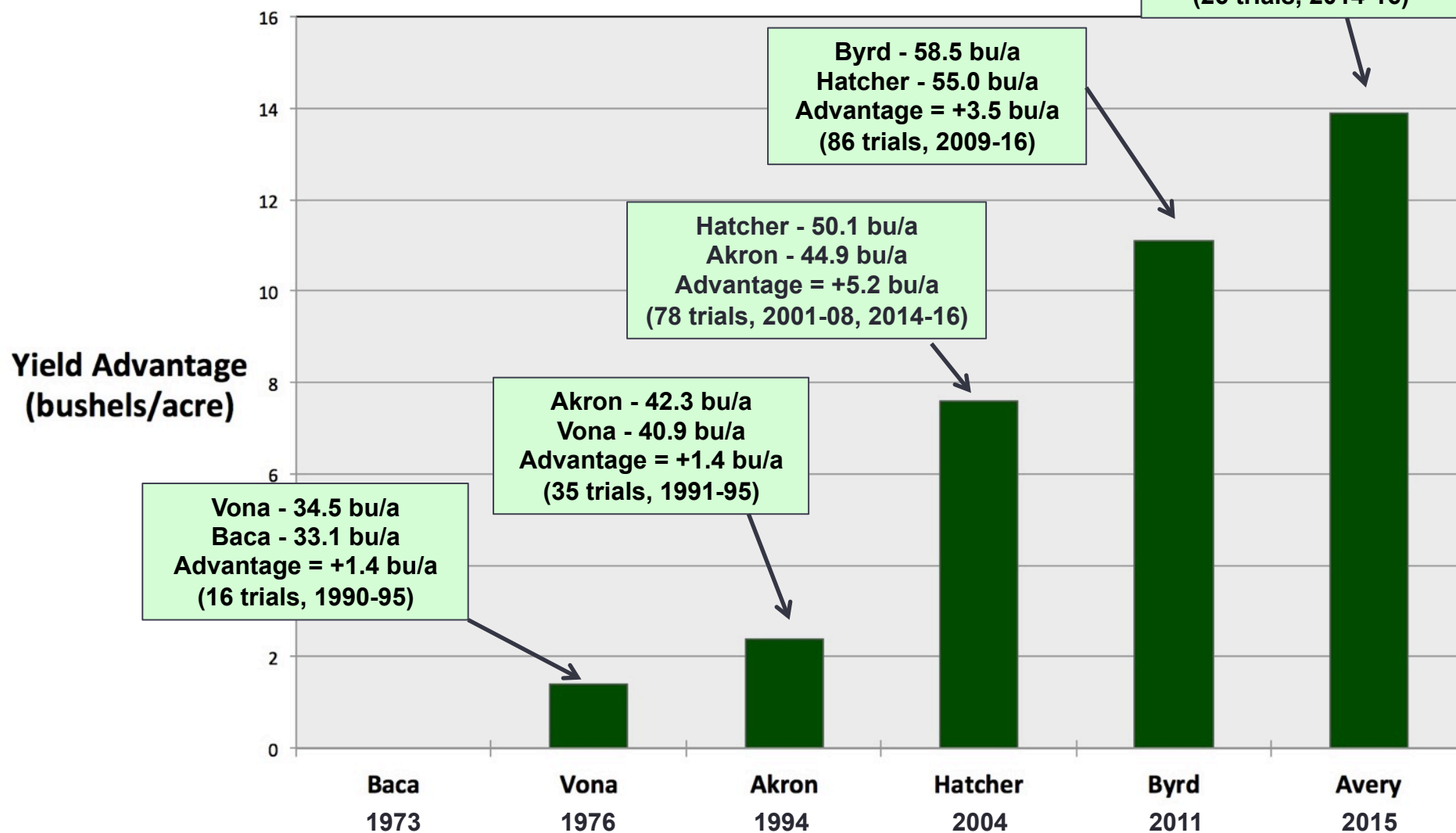
<http://csucrops.com> – Crops Testing Program

<http://ramwheatdb.com> – wheat variety performance database

<http://plainsgold.com> – variety marketing



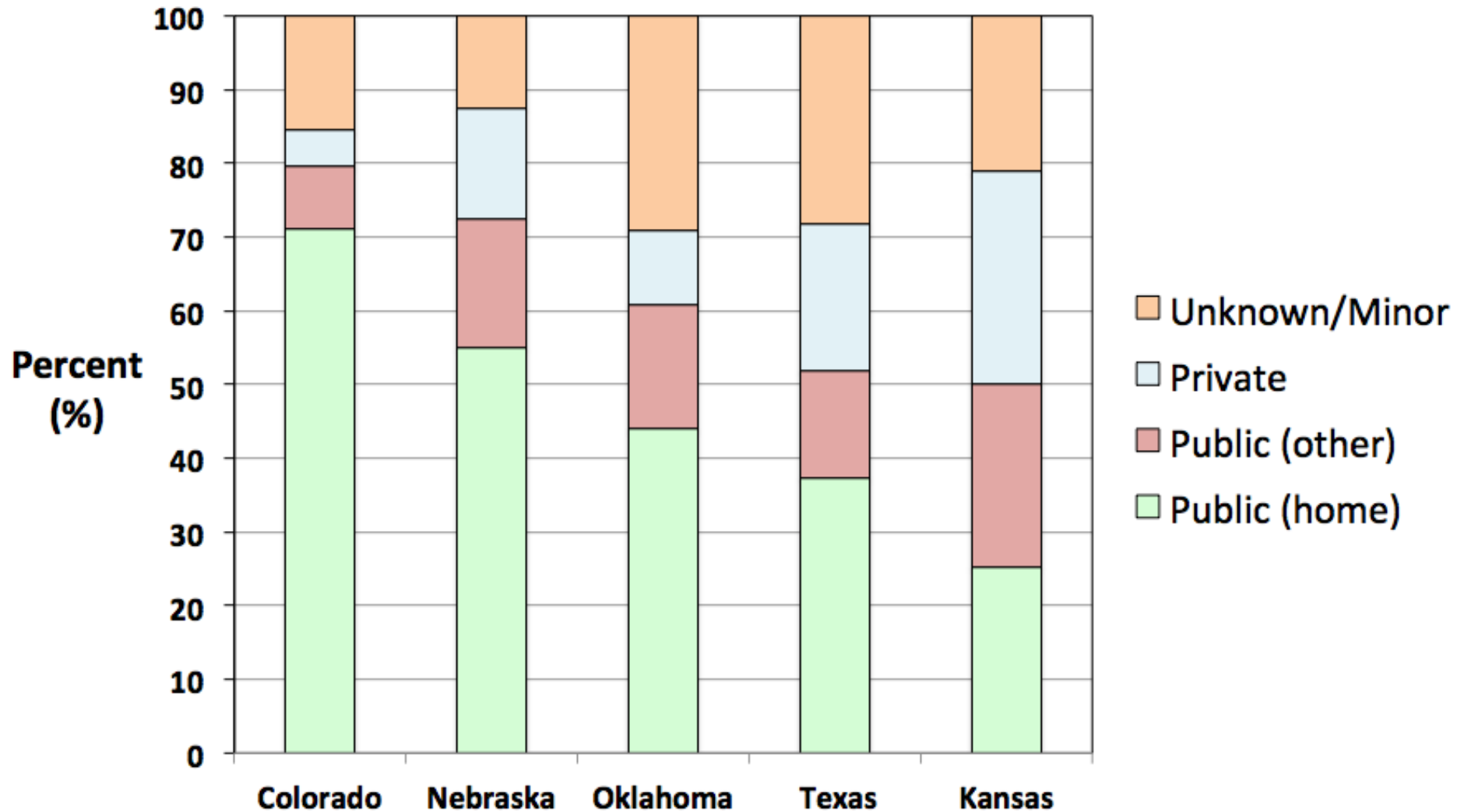
50 Years of Colorado Wheat Improvement



Source – <http://ramwheatdb.com>

Area Planted to Public and Private Hard Winter Wheat Varieties in Five US Great Plains States

(source - 2015 state wheat variety surveys)



Public Wheat Breeding in Colorado

- The partnership between CSU and the Colorado wheat industry groups (CWAC, CWRF) has succeeded in bringing real benefits to producers.
- Over time, CSU has sustained a significant financial investment in wheat research & extension.
- Over time, Colorado wheat producers have shown their exceptional commitment to public wheat breeding, helping us build a very strong program.
- So, given all of this, why establish an endowed chair in wheat breeding now?



What is an Endowed Chair/Professor?

- Go to the fountain of all knowledge – Wikipedia!
 - A position permanently paid for with the revenue from an endowment fund specifically set up for that purpose.....
 - Used to reward the best faculty or to recruit top professors from other institutions.....
 - Considered to be an honor in the academic world.....
- Other public wheat breeding endowments
 - Washington: funded by Washington Grain Commission
 - Oregon: funded by Oregon Wheat Foundation
 - Oklahoma: funded by OK Wheat Research Foundation
 - North Dakota: funded by variety royalties, donations
 - Nebraska: funded by Bayer CropScience
 - Idaho: Idaho Wheat Commission, Limagrain



Succession Planning



Succession Planning

- It is more than inevitable that CSU's current wheat breeder will "hang it up" at some point.
- Very few things affect a wheat breeding program worse than a lack of continuity in leadership.
- An endowment will maintain the "internal visibility" of the wheat breeding program at CSU so that:
 - High priority is given within CSU for filling the vacancy.
 - High priority is given to hiring a breeder and nothing else.
 - An overlap between breeders could be possible.
- An endowment would enhance CSU's ability to attract the best wheat breeder possible.



The Breeder's Commitment



The Breeder's Commitment

- My own personal commitment is rooted in being raised far away from agriculture in suburbia, and my experience in West Africa in the Peace Corps.
- University professors are pulled in a lot of different directions, especially prior to promotion and tenure.
 - Pressure to obtain competitive grant funding and publish.
 - This is not entirely compatible with applied breeding.
 - Lack of priority and reward structure for engagement.
- An endowment provided by and in the name of Colorado's wheat industry would help nurture the next breeder's commitment.



Graduate Student Training & Research



And
Many
More!



Graduate Student Training & Research

- For a variety of reasons, there continues to be a critical shortage of trained plant breeders in the US.
- Public wheat breeding programs are uniquely positioned to provide cutting edge, hands-on training in applied plant breeding.
- An endowment would allow us to play a more active role in graduate student training in developing the next generation of plant breeders.
- An endowment would help the wheat breeder to build mutually productive collaborations with other CSU wheat researchers.



Acknowledgements



Colorado Wheat
Administrative Committee



Colorado
State
University



Nourishing what's next.™





Questions?