

**The 95th
ANNUAL REPORT
of
INVESTIGATIONS AND ADMINISTRATION
at the
CENTRAL AGRICULTURAL RESEARCH CENTER
MONTANA AGRICULTURAL EXPERIMENT STATION
Moccasin, Montana
2003**

Department of Research Center Mission Statement

The mission of the Research Centers is to serve the specific needs of the clientele in local production areas and the broader needs of Montana agriculture in general through applied research directed to the problems and impacts of agricultural production.

New knowledge generated by Agricultural Research Center programs benefits Montana agriculture and the scientific community at local, state and national levels. This knowledge is disseminated to the agricultural industry in Montana through publications and teaching to improve the economic status and quality of life of its citizens. Research information also reaches the scientific community through publication in professional journals and presentations at professional meetings, thereby enhancing and promoting the individual professional development of faculty members. Faculty appointments are predominantly research-oriented, with limited opportunities for traditional academic teaching activities.

MAES Mission Statement

The Montana State University Agricultural Experiment Station's mission as established in 1893 by the state statute is "to conduct and promote studies, scientific investigations and experiments relating to agriculture, natural resources and rural life, and to diffuse information thereby acquired among the people of Montana." Thus, the research centers fulfill the agricultural research component of Montana State University's federal Land Grant University mission of teaching, research and extension.

This report contains information gathered by the Central Agricultural Research Center of the Montana Agricultural Experiment Station.

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DISCLAIMER

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Montana Agricultural Experiment Station is implied. The results of individual traits and studies are considered to be of a **preliminary** nature and should **not** be considered as a product endorsement or recommendation for commercial use.

NOT FOR PUBLICATION

2003 General Activities

A brief discussion of non-research activities at the Central Agricultural Research Center.

Major events included: Moving into the new CARC office in March, receiving 3.68 inches of precipitation in April, excessively high numbers of grass hoppers from March through September, excessive heat and low precipitation in late June through August, and the resignation of Director Sharron Quisenberry. The post Christmas blizzard brought more than 20 inches of snow, up to 40 mph wind, 1.3 inches of moisture, and a lot of optimism for 2004.

For many, the perennial forage harvest and winter wheat harvest was fair to good. The winter wheat had 70-80 bushel straw with 35-50 bushel yields. Small kernels and low test weights brought the winter wheat yields down. Seeding date was very critical for spring crops. April seed crops generally did fair and some good. May seeding yields corresponded with the old saying a bushel loss per day of delay. Because stress set in early, the test weight and quality was actually decent for some of the spring cereals. Double cropping, cereal hay followed by warm season grass (sorghum x sudangrass or millets worked great for the irrigated producers.

Physical Plant: The new office was completed and moved into. Some remedial work needs to be done both to the interior and to the exterior. It appears the overhead air heat delivery system will not be as good as promised. The December blizzard showed we will need to put in additional shrubbery to keep the snow from blocking the main entrance first. The CARC staff landscaped and poured the sidewalks. The second load of cement was not fortified with chloride so it did not set up well. Oh well, it just reminds us we are not perfect. Windows were replaced on the west side of the dairy barn and a cement cap was poured over the undulating terrain of the milking parlors cement floor. Converting the milking parlor to a wet lab was initiated.

Equipment: Herb Wilbur spent a week in October transporting the one year old Kincaid Massey Ferguson 8XP combine back to Haven Kansas to be retrofitted with paddle conveyer as the pneumatic system was able to deliver the seed as it had been purported. We ended up switching combines in the interest of time. Chengci and Karnes designed and built a sprayer to fit their research plots. Chengci borrowed SARC Hege planter to fill a need for both 6 and 12 inch row spaces in a spring wheat study. We had the misfortune of having our extended cab ford rolled and totaled in December by employee CC. Fortunately, as a couple of years ago we were able to have the pickup insured at value instead just having liability on it.

Research Support Efforts: CARC provided The USDA Sustainable Pest Management Project (Greg Johnson- MSU Entomology) with use of the JD 5400 loader tractor, 345Kubota, 10 ft 3pt cultivator, offset disk, JD double disk drill, 1 T pickup, gooseneck trailer. Stored grain insect project (Dave Weaver Entomology) used two 2500 bu butler bins. Perry Miller, MSU LRES, cooperated on pulse vs fertilizer cereal grain N source study.

Foundation Seed: Foundation seed of Lucile emmer, Outlook and McNeal spring wheat; Hays and Haybet barley, Rampart, Vanguard, and Paul winter wheat, Otana oat, and Toni winter lentils were produced. Also seed increases of SK3P spring spelt, winter triticale lines TR 719 and TR 721 with the idea they would be breeders seed. SK3P poses a particular problem as it is an old variety and we are uncertain how to appropriately produce a generation of foundation seed. Source identified may be the best we can do to meet the ultimate goal of getting genetically pure clean seed in the hands of the seed trade.

Personnel: No changes in full time staff. We wish to note efforts of temporary employee Leann Fox. She brought skill, enthusiasm and diligence to a job that required many hours in the "range position" during June 2003. She worked for 4 projects at CARC during 1.4 y of employment.

Personnel 2003

Montana Agricultural Experiment Station Administration

Jeffrey Jacobsen	(1999)	Interim MAES Director
Mal Westcott	(1994)	Research Center Department Head
Connie Shelhamer	(2002)	Budget & Fiscal Director

Central Agricultural Research Center Staff

David Wichman	(1985)	Superintendent & Agronomist
Chengci Chen	(2002)	Associate Professor
Karnes Neill	(1997)	Research Associate
Joe Vavrovsky	(1979)	Ag Research Specialist
Lorrie Linhart	(1996)	Administrative Assistant (Part-time)

DEPARTMENT OF ENTOMOLOGY STATIONED AT CARC

K.C. Kirpach	(1999)	Ag Research Specialist
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Montana Sheep Institute Stationed at CARC

Jim Moore	(2003)	Sheep Specialist
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2003 CARC Seasonal Employees

Cynthia Braaten	Corina Dahlhausen	Sally Dahlhausen
Ashley Davis	Leann Fox	Darin Metcalfe
Terry Metcalfe	Cody Sheppard	Cody Swanson
Ray Valentine	Tara Vejtasa	Herbert Wilber
Brittney Wilken		

Research Center Advisory Committee Members CARC 2003

Name	Address	Occupation	First (term#) Appointment	Term Expires
Dave Bergum	Winifred	Farmer	1999 (2)	2005
Claude Bronec	Denton	Farmer	1999 (2)	2005 Pres.
Tom Butcher	Lewistown	Rancher	2003 (1)	2006 Sec.
Bud Colby	Harlowton	Farmer	1997 (2)	2003
Shawn Erickson	Moore	Ag Consultant	2003 (1)	2006
Kirby Granger	Highwood	Farmer	2001 (1)	2004
Steve Grove	Moccasin	Farmer	2000 (1)	2003
Bob Grubb	Coffee Creek	Farmer	2000 (1)	2005
Craig Iverson	Winnett	Farm-Ranch	2003 (1)	2006
Lance Juedeman	Geraldine	Farmer	1997 (2)	2003
Greg Mathews	Buffalo	Farm-Ranch	2001 (1)	2004
Bruce Neumann	Geyser	Farm-Ranch	2001 (1)	2004 V.Pres.
Tom Robertson	Harlowton	Farmer	1999 (2)	2005

State Delegate CARC

Lance Juedeman 2001-04

Alternate: Claude Bronec '03

MAES Delegate Terms

3 yrs. Maximum of 2 consecutive terms.

Member Terms

3 yrs. Maximum of 2 consecutive terms.

Term year April 1 – April 1.

Departing delegate nominates 2-3 replacements.

Officers elected at winter meeting.

Ex-Official Members CARC

J. Dave Phillips	Lewistown	Fergus County Ag Agent	1986
Judee Wargo	Fort Benton	Choteau County Ag Agent	1991
Wes Gibbs	Stanford	Judith Basin County Ag Agent	2003

Ex-Officials members are full CARC Advisory participants in the advising and providing guidance to research priorities at CARC. They are not eligible to serve as CARC Advisory Board officers or delegates to MAES.

2003 FIELD GUIDE

SW1	BARLEY
SW2	ALFALFA
SW3-N	PERENNIAL FORAGE NURSERIES
SW3-S	BARLEY
SW3-E	WINTER WHEAT
SW4-W	FALLOW
SW4-center	PERENNIAL FORAGE NURSERY
SW4-E	SPRING WHEAT
SW5	SPRING WHEAT
SW6-N	MUSTARD
SW6-S	FALLOW
SW7-N	SPRING WHEAT
SW7-S	HAY BARLEY
SW8	PULSE NURSERIES AND FALLOW
SW9-N	EMMER
SW9-S	CHEMICAL FALLOW
SW10	SPRING WHEAT
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NW1	TRITICALE
NW2	FALLOW
NW3	BARLEY
NW4	ALFALFA
NW4-S	ALFALFA
NW5-S	MUSTARD
NW5-N	ALFALFA
NW6-S	ALFALFA
NW6-N	HAY BARLEY
NW7	NURSERIES
NW8	MUSTARD
NW9	ALFALFA
NW10	ALFALFA
NW11	ALFALFA & ALFALFA SULFUR TRIALS
NW12	LENTILS
<hr/>	
NT1	BARLEY
NT2	FALLOW
NT3	WINTER WHEAT
NT4-N	FALLOW
NT4-S	INDIAN RICEGRASS
NT5	SPRING WHEAT
NT6	FALLOW
NT7	HAY BARLEY
NT8	YELLOW MUSTARD
<hr/>	
NE1-W	BARLEY
NE1-E	BARLEY
NE2-W	FALLOW
NE2-E	FALLOW
NE3-W	BARLEY
NE3-E	BARLEY
NE4-W	BARLEY
NE4-E	BARLEY
NE5-W	BARLEY
NE5-E	BARLEY
NE6-W	BARLEY
NE6-E	BARLEY

NE7	MUSTARD
NE8-E	SPRING WHEAT
NE8-W	SPRING WHEAT
NE9-W	SPRING WHEAT
NE9-E	SPRING WHEAT
NE10-W	WINTER WHEAT
NE10-E	WINTER WHEAT
NE11-W	SPRING WHEAT
NE11-E	SPRING WHEAT
NE12-W	SPRING WHEAT
NE12-E	SPRING WHEAT
NE13	MUSTARD
NE14	BARLEY

SE1	SPRING SPELT
SE2	WINTER WHEAT
SE3	A-N FALLOW
	A-S MUSTARD
	B MUSTARD
	C BARLEY
	D WINTER WHEAT
	E BARLEY
	F PEAS/LENTILS VALIER
	G SPRING WHEAT
	H SORGHUM/MILLET
SE4-W	MONTY'S, SPRING CEREAL FORAGE
SE4-E	BARLEY
SE5-N	FALLOW
SE5-S	FALLOW
SE6-N	OATS
SE6-S	SPRING WHEAT
SE7-N	FALLOW
SE7-S	FALLOW
SE8-N	HAY BARLEY
SE8-S	WINTER WHEAT
SE9	FALLOW
SE10	GRASS
SE11	A TRITICALE
	B SCF & HAY BARLEY
	C CHEM FALLOW
	D MUSTARD
SE12	A FALLOW (TILLED)
	B FALLOW NT
	C FALLOW
	D BARLEY
	East MUSTARD
SE13	SAFFLOWER

2003 Foundation Seed Production and Sales CARC

	<u>Sales</u>	<u>Production</u>
	-----	-----
	BU	BU
	Winter Wheat	
Big Sky	---	bu.
NuSky	---	---
Paul	---	
Promontory	---	---
Rampart	40 bu.	---
Tiber	90 bu.	
Vanguard	135 bu.	---
	Spring Wheat	
Fortuna	48 bu.	---
Hi-Line	46 bu.	---
McNeal	180 bu.	bu.
Scholar	---	---
	-----	-----
	Lbs	
	Barley	
Haybet	26,350 lbs.	lbs.
Horsford	---	---
Lewis	1,000 lbs.	---
Valier	600 lbs.	---
	Oats	
Otana	---	---
Rio Grande	---	---
	Spring Emmer	
Lucile	---	---
	Triticale	
Sunland	---	---
	<u>Winter Spelt</u>	
Frank	3,215 lbs.	---