

CONTRACT BETWEEN
MONTANA AGRICULTURAL EXPERIMENT STATION
RESEARCH CENTERS
AND THE
MONTANA WHEAT AND BARLEY COMMITTEE

TIME PERIOD: July 1, 1991 to June 30, 1992

TITLE: Evaluation of various materials and practices contributing toward economic crop production under flexible, continuous and other cropping systems in Montana.

PERSONNEL: Research faculty members at the following Research Centers:

1. Central Agricultural Research Center - Moccasin
2. Eastern Agricultural Research Center - Sidney
3. Northern Agricultural Research Center - Havre
4. Northwestern Agricultural Research Center - Kalispell
5. Southern Agricultural Research Center - Huntley
6. Western Triangle Agricultural Research Center - Conrad

OBJECTIVES:

1. To evaluate the effects of differing systems on crop variety performance under the diverse environments represented across the Montana Research Center network.
2. To evaluate the potential fit of other materials, concepts and techniques with various cropping systems employed.

BACKGROUND AND JUSTIFICATION:

An increasing need is felt among Montana agricultural producers for development and implementation of new and/or refined methods for enhanced economic efficiency in crop production.

PROJECTS:

1. Cropping Systems Investigations:

- a.) Evaluation of continuous cropping with tall wheatgrass barriers. (Sidney)
- b.) Evaluation of spring wheat, durum, barley, and oat variety adaptability for production under minimum-till, continuous cropping. (Sidney)

- c.) Small grain variety performance evaluations under no-till cropping conditions. (Conrad)
- d.) Evaluation of small grain variety performance under no-till conditions in Northern Montana. (Havre)
- e.) Evaluation of no-till spring wheat and barley variety performance. (Moccasin)

2. Grain Variety Performance Investigations Under Conventional Conditions:

- a.) Off-station winter wheat variety investigations. (Conrad)
- b.) Off-station spring wheat variety investigations. (Conrad)
- c.) Evaluation of fallow-seeded winter wheat, spring wheat, barley, and oat variety performance off-station in five Northern Montana counties. (Havre)
- d.) Winter and spring wheat variety performance evaluation under Northern Montana conditions on the basis of gross market production value as influenced by protein. (Havre)
- e.) Off-station variety testing of winter wheat, spring wheat, and barley at Moore, Highwood, Denton and Winifred. (Moccasin)
- f.) Off-station comparison of hard red winter wheat, winter spelt, and winter barley to yields of spring oats and to yields of spring oats and barley under dryland cropping conditions. (Huntley)
- g.) Evaluation of winter triticale and barley grown under dryland cropping conditions. (Huntley)
- h.) Western Regional Uniform Hard Red Winter Wheat Nursery. (Kalispell)
- i.) Western Regional Uniform Soft White Winter Wheat Nursery. (Kalispell)
- j.) Western Regional Uniform Spring Wheat Nursery. (Kalispell)
- k.) Evaluation of regional winter wheat, spring wheat and durum nursery selections. (Sidney)

3. Dilseed, Pulse and Miscellaneous Crop Investigations:

- a.) Dryland evaluation of food and specialty oil safflower varieties. (Havre)

- b.) Dryland evaluation of food and specialty oil safflower varieties at Geraldine. (Moccasin)
- c.) Dryland oilseed & annual legume variety evaluation. (Huntley)
- d.) Production of chickpeas, dry peas, and lentils under dryland management. (Huntley)

4. Disease Management Investigations:

- a.) Disease evaluations of spring wheat and barley introductions, selections, and bulk populations. (Sidney)
- b.) Screening of early generation winter wheat lines for TCK smut and stripe rust resistance in cooperation with Dr. E. A. Hockett, Bozeman. (Kalispell)
- c.) Evaluation of early generation barley selections in cooperation with Dr. T.K. Blake, Bozeman. (Kalispell)
- d.) Off-station hard red winter wheat variety trial: Dwarf smut area, Lodgegrass. (Huntley)

6. Weed Management Investigations:

- a.) Resistant weed management with tank mix evaluations of sulfonylurea herbicides in combination with other broadleaf herbicides on spring grains. (Kalispell)
- b.) Evaluation of weed management input variables in delayed seedings of spring barley. (Kalispell)

7. Other Agronomic Investigations:

- a.) The effect of row spacing, planting rate, and 'Cerone' on three spring malting barley varieties grown under irrigated management. (Huntley)
- b.) The effect of planting date and seeding rate on yield and quality of 'Bowman', 'Clark' and 'Gallatin' spring barley varieties at SARC, NARC and CARC. (Huntley, Havre, and Moccasin cooperating)
- c.) A study of seeding rate on dryland winter spelt. (Huntley).

8. Uniform Statewide Variety Testing of Small Grains:

- a.) Intrastate Winter Wheat Variety Nursery.
- b.) Advanced Yield Spring Wheat Variety Nursery.
- c.) Intrastate/Western Spring Barley Variety Nursery.
- d.) Uniform Northwestern States Oat Variety Nursery.

Trials to be conducted on dryland and/or under irrigation at Conrad, Havre, Huntley, Kalispell, Moccasin and Sidney in cooperation with MAES Breeder/Coordinators in Bozeman.

PROCEDURES:

Scientific research procedures will be employed appropriate to each specific project listed herein.

APPLICATION AND RESULTS:

Results substantiated via consistency with adequate repetition are available for dissemination to the Montana producer as well as to the scientific community.

PROPOSED BUDGET:

MWBC (Partial Project Funding)

<u>Research Center</u>	<u>Uniform Statewide Variety Testing</u>	<u>Other Projects</u>	<u>Center Total</u>
Central at Moccasin	\$ 1,000	\$ 6,000	\$ 7,000
Eastern at Sidney	\$ 1,000	\$ 6,000	\$ 7,000
Northern at Havre	\$ 1,000	\$ 6,000	\$ 7,000
Northwestern at Kalispell	\$ 1,000	\$ 6,000	\$ 7,000
Southern at Huntley	\$ 1,000	\$ 6,000	\$ 7,000
Western Triangle at Conrad	\$ 1,000	\$ 6,000	\$ 7,000
TOTALS	\$ 6,000	\$ 36,000	\$ 42,000

OTHER REQUIREMENTS:

Data will become the property of the Montana Agricultural Experiment station and are not to be published without the full consent of MAES. Records will be maintained for access as required to meet any legal requests. Data will be made available to the contractor at a reasonable time after release by MAES.

In case of either party defaulting this contract may be terminated for cause within 30 days by written notice. In the event of litigation venue shall be the First Judicial District of the State of Montana.

Transfer or subcontracting of the duties or services by MAES will not be done without the consent of all parties.

This contract will not be modified without the consent of all parties.

APPROVED:

Coordinator-Joint Research Center Proposal

Date

Associate Director, MAES

Date

Director, MAES

Date

Montana Wheat and Barley Committee

Date

Approved for Legal Content by:

Date