

**CONTRACT BETWEEN  
MONTANA AGRICULTURAL EXPERIMENT STATION  
RESEARCH CENTERS  
and the  
MONTANA WHEAT AND BARLEY COMMITTEE**

- TIME PERIOD:** July 1, 1997 to June 30, 1998
- 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/for 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 and variety performance under diverse environments represented across the Montana Agricultural Experiment Station - Research Center network.
  2. To evaluate the potential fit of other materials, concepts and techniques with various cropping systems employed.

**BACKGROUND AND JUSTIFICATION:**

An ever increasing need is felt among Montana agricultural producers for development and implementation of new and/or refined materials and 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 varieties under minimum-till, continuous cropping conditions. (Sidney)
  - c) Small grain variety performance evaluations under no-till cropping conditions. (Conrad)
  - d) Evaluation of winter and spring cereal varieties under a no-till, recrop environment at Moccasin. (Moccasin)
2. Grain Variety Investigations under Conventional Conditions:
  - a) Long-term small grain variety performance evaluations under fallow conditions off-station in five northern Montana counties. (Havre)

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- b) **Winter and spring wheat variety performance evaluation under northern Montana conditions on the basis of gross production value as influenced by yield, protein, and market. (Havre)**
  - c) **Off-station winter wheat variety evaluations in three counties of the Western Triangle area. (Conrad)**
  - d) **Off-station spring wheat variety evaluations in three counties of the Western Triangle area. (Conrad)**
  - e) **Off-station barley variety evaluations in three counties of the Western Triangle area. (Conrad)**
  - f) **Off-station evaluation of winter wheat variety performance near Denton, Fort Benton, Moore, and Winifred. (Moccasin)**
  - g) **Off-station evaluation of spring wheat variety performance near Denton and Fort Benton. (Moccasin)**
  - h) **Off-station evaluation of spring barley performance at Denton and Fort Benton. (Moccasin)**
  - i) **Off-station evaluation of winter wheat variety performance near Broadview. (Huntley)**
  - j) **Off-station evaluation of spring wheat and barley variety performance near Broadview/Molt. (Huntley)**
  - k) **Evaluation of spring wheat and durum variety performance in off-station trials in six eastern Montana counties. (Sidney)**
  - l) **Western Regional hard red winter wheat evaluations. (Kalispell)**
  - m) **Soft white winter wheat evaluations. (Kalispell)**
  - n) **Regional spring wheat, winter wheat, durum, and oat evaluations. (Sidney)**

**3. Oilseed, Pulse and Miscellaneous Crop Investigations:**

- a) **Dryland evaluation of standard and specialty oil safflower varieties. (Havre)**
- b) **Dryland recrop evaluation of safflower varieties. (Moccasin)**
- c) **Evaluation of winter, covered wheats and triticale breeding lines and varieties at CARC and near Moore and Winifred. (Moccasin)**
- d) **Evaluation of spring, covered wheats and triticale breeding lines and varieties at CARC. (Moccasin)**
- e) **Evaluation of winter, covered wheats and triticale breeding lines and varieties at SARC. (Huntley)**

- f) Evaluation of spring, covered wheats and triticale breeding lines and varieties at SARC. (Huntley)
4. **Crop Fertility Investigations:**
- a) Comparison of spring wheat and barley varietal response under conditions of low versus optimum fertility off-station at Turner. (Havre)
  - b) Management of recrop and fallow malting barley with N,P,K & S fertilizer. (Conrad)
5. **Disease Management Investigations:**
- a) Screening of early generation winter wheat lines for dwarf bunt and stripe rust. (Kalispell)
  - b) Screening of early generation hard white spring wheat selections for stripe and leaf rust. (Kalispell)
  - c) Screening of early generation spring barley selections for scald. (Kalispell)
6. **Insect Management Investigations:**
- a) Evaluation of sawfly resistant winter wheat lines near Molt. (Huntley)
7. **Weed Management Investigations:**
- a) Reduced rate studies with Achieve wild oat herbicide. (Kalispell)
  - b) The effect of surfactants and Assert rates for wild oat control. (Kalispell)
8. **Uniform Statewide Variety Testing of Small Grains:**
- a) Intrastate Winter Wheat Variety Nursery
  - b) Advanced Yield Spring Wheat Variety Nursery
  - c) Intrastate Spring Barley Variety Nursery
  - d) Uniform Montana 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/Geneticists in Bozeman.**

**SARC funding portion to further cover interim continuation of certain preliminary evaluation and irrigated nurseries of key importance to the Montana cereal variety breeding effort (soft white winter wheat, preliminary spring wheat, irrigated malt barley evaluation, and irrigated advanced yield spring wheat nurseries).**

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**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 crop producer as well as the scientific community.

**CURRENT or PENDING BUDGETARY SUPPORT:**

All projects included herein are partially supported by MAES funding.

**POTENTIAL FOR ENHANCED EXTRAMURAL FUNDING:**

Much of the research conducted within this overall project is associated with the development of crop performance databases over substantial periods of time and numerous environments. While it is difficult to obtain most types of extramural funding for such work, the results arising from long-term investigations serve well in documenting base data for proposals toward other grant-supported research endeavors.

**INCREASED COMPETITIVENESS DUE TO THIS FUNDING:**

Much of the research associated with this project is conducted off-station on cooperating producer's farms. The addition of important cropping environments differing from those represented by the fixed-location research facilities is additive to overall databases employed to support producer decisions in cropping systems, crop and variety selection, crop nutrition, and crop pest management.

**APPROVED BUDGET:**

**MWBC = partial project funding**

<b>Research Center</b>	<b>Uniform Statewide Variety Testing</b>	<b>Other Projects</b>	<b>Center Total</b>
Central at Moccasin	\$ 1,000	\$ 11,000	\$12,000
Eastern at Sidney	1,000	11,000	12,000
Northern at Havre	1,000	11,000	12,000
Northwestern at Kalispell	1,000	11,000	12,000
Southern at Huntley	8,000	4,000	12,000
Western Triangle at Conrad	1,000	11,000	12,000
<b>Totals</b>	<b>\$13,000</b>	<b>\$59,000</b>	<b>\$72,000</b>

**NOTE:**

An additional \$5,000 per Research Center was awarded at the 1997 MWBC Budget Meeting bringing the FY97-98 total for each Center to \$17,000 and the grand total for Research Centers to \$102,000.

**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

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Date

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Associate Dean for Research, MAES

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Date

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Director, MAES

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Date

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Montana Wheat and Barley Committee

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Date

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Approved for Legal Content by:

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Date