Increasing Agricultural Profitability and Sustainability
Extension Cropping Systems Specialist

State Need:

- MSU Extension has not had a cropping systems agronomist for over ten years. This has been a result of budget constraints, rather than lack of recognized need for Montana producers.
- The Montana grain growers continually express concern over this and request a position to support their industry.
- Montana cropping systems have shifted fundamentally to no-till systems presenting new pest and soil management issues.
- Montana producers have an opportunity to acquire increased market share with management-intensive organic production.
- This Extension position is critical to reducing costly mistakes based on inexperience for new crops such as canola, mustard, sunflower, peas, lentils and chickpeas.

Market Reality:

- Grain production is the second largest agricultural enterprise in the state.
- Markets are changing with regard to consumer preference and international opportunities.
- Producers are venturing into production of new crops without proper Extension support from a Montana context. Borrowing information from neighboring states and provinces can have serious limitations here.
- Pulse crops (peas, lentils, chickpea) now receive price support under the Federal Farm Program, providing new incentives to grow these crops.
- New bio-based oilseed ventures in Montana require Extension support to ensure a successful production base.
- Federal initiatives with carbon markets promise new sources of income for Montana's no-till producers.
- There are many new opportunities associated with new Farm Bill Programs (EQIP, CRP, etc.) that need to be extended to Montana farmers.

Current Problem:

- Crop diversification in Montana lags well behind neighboring states and provinces. Diversified cropping strategies provide systems benefits and impact the bottom line through water-use-efficiency, nitrogen savings in pulse crops, nitrogen contributions to following crops, and soil carbon accumulation. There is relatively low adoption due to lack of extension presence.
- Basic extension needs for pulse and oilseed crop production are not being met, resulting in costly avoidable mistakes by producers.
- Development of agricultural industry for processing oilseed and pulse crops in Montana requires a knowledgeable production base.

- Tillage is still the dominant method of fallowing fields. Sound alternatives to fallow are under development and need to be more thoroughly extended to Montana producers.

Proposed Solution:

- Fill Cropping Systems Specialist position to be located on MSU campus.
- Position will integrate with existing Agricultural Experiment Station and College of Agriculture faculty, including cropping systems research/on-campus teaching, weed management, and many others.
- Potential to secure partial operations funding from state and private programs including Noxious Weed Trust fund, Fertilizer Tax Committee, Wheat and Barley Committee, etc.

Required Investment:

- FY 07 - $82,000 (salary, benefits and operations)
- Producer groups may contribute some start-up equipment like vehicle(s), farming equipment, etc.

Return on Investment:

- Oilseed and pulse crops can potentially boost farm income in Montana through marketing a more diversified basket of crops and adding value to the production system through improved water-use-efficiency, pest management, and soil nutrient cycling.
- A recent study in Saskatchewan showed return on investment for pulse crop research of greater than 30 to 1. Extension of research knowledge to producers is critical to capturing this return on investment.
- The livestock industry in Montana provides many opportunities for creating value with cereal, pulse and oilseed crops. This may be especially critical in drought-prone regions.

Selected Examples of Return:

- Basic cropping systems extension will prevent many avoidable mistakes with pulse and oilseed crop production. Each year there are numerous examples throughout Montana where producers growing a new crop lose some or all of that crop's production, costing from $10 to $200/acre. Common errors relate to fertility practice, improper inoculant use, seeding rate, seeding depth, seeding date, harmful herbicide residues in the soil, improper herbicide use, poor variety choices, etc. These errors are largely preventable with a Cropping Systems Extension program.
- As fuel prices increase, the price of nitrogen follows. Producers are looking at pulse crop production to reduce N fertilizer costs and to provide N benefits to wheat crops. Pulse crops can fix up to 100 lb/ac of N with a fertilizer equivalent value of $20/ac and greater. Pulse crops commonly cycle 10 to 15 lb of N/ac to wheat crops, adding further value. Extension support is critical to managing fertility in pulse crops and in ensuring that a proper N credit is used for following crops.