

COVER CROP COCKTAILS POST-PROJECT SURVEY

FARMER CONSIDERATIONS AND PRACTICES WITH COVER CROPS



Please return your completed questionnaire in the enclosed postage-paid envelope to:

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If you have any questions, please call (406) 994-6076 or email clainj@montana.edu

About the Survey

Agricultural researchers from Montana State University-Bozeman have been working with farmers in Dutton, Conrad, and the Gallatin Valley over the past 3 years to study the benefits and limitations of using mixed (cover crop cocktails) rather than single-species cover crops. This survey is designed to update our understanding of local farmers' experiences and perspectives about this issue which will add to current information and consequently help to develop useful tools that are relevant to the producer.

Whether your experience with cover crops is extensive or minimal, we would appreciate your feedback on this issue. Your participation is voluntary, and all responses, including individual farm operations, will remain confidential. Please complete and return the survey in the enclosed envelope in a timely manner, to avoid getting reminders from us. If the survey is not pertinent to your operation, please return it in the enclosed envelope so we do not send you reminders. **Those who respond will be included in a drawing for a set of insulated overalls.**

Results from our cover crop research are posted at <http://landresources.montana.edu/soilfertility/covercrops.html>. A summary of this survey will be posted on that website likely by June. You can also contact me at clainj@montana.edu or 994-6076.

Survey

Experience with cover crops

1) Do you, or have you, grown cover crops?

- No – please skip to "**perceptions about cover crops**" on page 4, question 27.
- Yes, single species
- Yes, mixed species ("cocktails")
- Yes, both as single species and mixed species

2) When have you used cover crops?

- As a shoulder season cover (meaning late summer to fall)
- As a winter crop
- As a partial summer fallow replacement
- Other _____

3) Do you use cover crops for grazing? Yes No

4) Approximately what % of your cover crop biomass is legumes?

- 0% 25% 50% 75% 100%

5) What is the average number of species in your cover crop?

- 1 2-3 4-5 6-7 8 or more

6) How do you pick species for your cover crops? (e.g., cover crop calculators, NRCS advice, etc.)

7) What cover crop species would you seed again?

8) What cover crop species would you **NOT** seed again?

9) How do you decide on seeding rates for your cover crops? _____

10) When do you seed and terminate most of your cover crops?

	March	April	May	June	July	August	September	October	November
Seed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Terminate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11) How do you pick seeding and termination dates for your cover crops?

12) What is your approximate cover crop biomass in pounds per acre____at approximately __% moisture?

13) How do you decide between maximizing plant biomass and minimizing cover crop water use?

14) Do you fertilize your cover crops? Yes No

15) Do you soil test to select your nitrogen rate after cover crops? Yes No

16) Do you change your yield goals after cover crops verses after fallow?

- Yes, I decrease yield goals after cover crops
- No, I use the same yield goal
- Yes, I increase yield goals after cover crops

17) Do you give a “nitrogen (N) credit” for your cover crops, i.e., reduce the recommended nitrogen rate because of nitrogen contribution from a cover crop?

- No
- Yes, by _____ lb. N/ac
- Yes, amount depends on _____

18) Have you received EQIP or CSP incentive payments for growing cover crops? Yes No

19) Will you continue to use cover crops? Yes No

20) Have your cash crop yields changed as a result of cover crop use?

- No
- Yes, increased
- Yes, decreased

21) Are you willing to invest in cover crops without a return on your investment in the year after your cover crop? Yes No

22) Approximately how much are you willing to spend on cover crop seed per acre? _____

23) Approximately how much are you willing to spend to plant and terminate cover crops per acre? _____

24) Approximately how many years are you willing to invest in cover crops before getting a financial return?

25) Do you feel cover crops increase the value of your land? Yes No If 'no', go to question 27

26) If you feel cover crops increase the value of your land, do you have an estimate on value increase in \$/acre per year? _____

Perceptions about cover crops

27) How important do you feel the following considerations are **FOR** planting cover crops?

Consideration	Not important	Somewhat important	Very important	Not sure
Increased water availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Increased available nitrogen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Increased availability of nutrients other than nitrogen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Short term soil health (e.g., reduced compaction, erosion, water runoff)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Long term soil health (e.g., organic matter, microbial activity, infiltration)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Short term economics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Long term economics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Land value	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Help reduce weeds/disease/pests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Insect management (e.g., pollinators, predators, oat as wheat stem sawfly traps)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Forage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>

28) What is the main reason you do, or would consider planting cover crops?

29) What is the main reason you have, or may quit using cover crops?

30) How important do you feel the following considerations are for **NOT** planting cover crops?

Consideration	Not important	Somewhat important	Very important	Not sure
Moisture use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrient use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time constraint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment constraint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost of seed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not the best use of the land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of information on what/how to plant and manage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficult to implement on my farm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase my farm expenses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Impact on crop insurance premium or payout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Potential for decreased yield of cash crop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weed management challenges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31) How familiar are you with cover crop cocktails (mixtures)?

- | | |
|---|--|
| <input type="checkbox"/> Never heard of them | <input type="checkbox"/> Tried but not likely to use again |
| <input type="checkbox"/> Minimal knowledge | <input type="checkbox"/> Tried and will continue to use |
| <input type="checkbox"/> Quite familiar but never tried | |

32) In a production system how much benefit does a cover crop cocktail have versus a single species cover crop?

Potential Benefit	Not likely	Somewhat likely	Very likely	Not sure
Increased water availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase available nitrogen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase availability of nutrients other than nitrogen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improvements in short term soil health (e.g., reduced compaction, erosion, water runoff)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improvements in long term soil health (e.g., organic matter, microbial activity, infiltration)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short term economic gains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Long term economic gains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land value increase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduction in weeds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduction in disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduction in insects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More efficient insect management (e.g., pollinators, predators, oat as wheat stem sawfly traps)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased forage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

33) How important do you feel the following considerations are for growing single species cover crops rather than cover crops cocktails?

Consideration	Not important	Somewhat important	Very important	Not sure
Moisture use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Nutrient use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Time constraint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Equipment constraint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Cost of seed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Not the best use of the land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Lack of information on what/how to plant and manage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Difficult to implement on my farm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Increase my farm expenses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Impact on crop insurance premium or payout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Potential for decreased yield of cash crop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Weed management challenges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>

34) Let us know whether you have, will, or do not intend to make any of the following changes in the 3 past or 3 coming years.

Cover crop management change	Yes, have done in last 3 years	Yes, intend to in next 3 years	No, and probably won't	Not sure
Grow cover crops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Increase cover crop acreage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Decrease cover crop acreage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Same cover crop acreage but different management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Use species mixes rather than single species cover crops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Change cover crop species used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Seed cover crops at different time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Terminate cover crops at different time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>

35) If you have changed cover crop acreage in the last 3 years, by what acreage did you the change?

- Increase by _____ acres Decrease by _____ acres

36) If you intend to change cover crop acreage in the next 3 years, by what acreage would you make the change?

- Increase by _____ acres Decrease by _____ acres

37) When making changes that involve cover crops where do you get your information? *Check all that apply*

Cover crop management change	Personal Experience	Experience from another producer	Advice from professional (e.g., NRCS, CCA, seed or fertilizer sales person)	MSU research results	Not sure
Adopted cover crop use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Increased acreage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Decreased acreage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Same acreage but different management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Went from single species to species mix	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Changed species used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Seed at different time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Terminate at different time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>

38) What future questions would you like answered? E.g., "Are there changes to soil nitrogen availability with cover crop mixes?"

39) Before receiving this letter were you aware of MSU-Bozeman's research on cover crop cocktails?

- No – skip to "**Ways to share our project results**" question 41
- Yes

40) Where did you hear about MSU's research on cover crop cocktails? *Check all that apply.*

- Talking to the local farmers who are hosting research on their farms
- Talking to other farmers
- Talking to County Extension agents, or government office staff (FSA, NRCS, etc.)
- Attending field days
- Newspaper articles
- Radio interviews
- Webpage or video

Other: _____

Ways to share our project results and information

41) What aspects of cover crops would you most like to learn more about (e.g., water use, grazing potential, economics, etc.)? _____

JUST ONE MORE PAGE →

42) How would you like to receive information in the future?

Source of information	Dislike	No preference	Like
Magazine articles (e.g., Western Farmer-Stockman)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Press releases to newspapers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small group workshops and seminars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Large group conferences or field days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internet search (e.g., Google)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Targeted search of known website (e.g., MSU soil fertility website)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conversation with producer (in person, by phone or email)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conversation with Extension Agent or Agency personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Informal experimentation and monitoring by others or self	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Email with information included or attached	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Newsletters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____			

43) Are you aware that NRCS provides financial incentives for growing cover crops? Yes No

Demographics

44) Which agricultural products do you typically grow or raise on your operation? *Check all that apply.*

- Small grains
- Perennial crops
- Annual legumes
- Annual crops other than small grain or legumes
- Livestock
- Other _____

45) In 2014, roughly what percent of your farming operation's acreage is used for the following purposes?

- Land used for harvesting cereals _____ %
- Land used mainly for harvesting hay _____ %
- Cropland that was idled or fallowed _____ %
- Land used mainly for grazing livestock _____ %

THANK YOU FOR COMPLETING THIS SURVEY!

If you have any other comments or suggestions for our research team that could help us make sure our research and recommendations are relevant and appropriate for Montana farmers, please list them below. Thank you.
