



Mississippi Corn Promotion Board 2019 Progress Report

Project Title: Potential for Rapeseed (Canola) as a Winter Cover Crop in a Corn/Soybean Rotation System that Includes Hairy Vetch

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Project Summary (Issue/Response)

The hottest buzzword in the mid-south agricultural community is 'soil health', a term that can be defined in many ways but generally as the continued capacity of the soil to function as a vital living ecosystem. Associated with soil health issues are cover crops taking on many varied forms that include crops such as wheat, rye, clovers, vetches, and tillage radishes. While the primary benefit afforded these crops come in the term, soil health, many other situations can arise that may not compliment the current growing systems. Crop rotations are actually beneficial in most production systems allowing for the rotation of herbicide modes of actions and chemistries. On the downside is the cost of potential cover crops and the problems with controlling pests that may overwinter or appear as a result of a non-traditional crop. Currently, the most predominant winter crop grown for profit is wheat. Most of the research or demonstrations currently being cited have no economic component and the most common question from producers is "How do I pay for it and what is my profit potential?" Rapeseed offers a potential alternative that could be grown during the same time frame as wheat (or harvested earlier) and could work in a double-crop/cover-crop scenario and provide a harvestable crop and potentially profitable crop. Several southern states including Alabama, Georgia, and Kentucky have shown promise for winter rapeseed production. Corn/soybean rotations appear all across the Mississippi Delta and Mid-South as grain crop production has become more economical and cotton production has declined. Also, during recent years, soil health has become a catch phrase that many are looking at inquisitively. The use of cover crops in row crop production is not a new concept by any means and has been used in conservation systems for centuries. A lot of emphasis has been placed on "selling" the practice to producers with little data on the economic as well as ecologic advantages to cover crops. Much of the Mid-south row-crop production occurs on beds that are necessary for getting water off and on the field and are less conducive to planting winter crops. Also, in the last several years, the persistence of herbicide resistant weeds have made fall and winter weed control essential for controlling troublesome weeds in the following crop. Crop rotations are actually beneficial in most production systems allowing for the rotation of herbicide modes of actions and chemistries.



Project Results/Outcomes

The project was initiated in 2019 with the cover crops to be planted in the fall following the main crop (corn or soybean). Unfortunately, with the unusual rainfall in the fall of 2019, the cover crops were never planted. In fact, the fields have had no fall tillage following harvest. The small seed drill planned for use has been renovated and completely overhauled to accommodate the canola planting. The canola seed was located and purchased in a dealer/genetics firm in Kentucky. Hairy vetch is also on hand but remains in the bag as well. Both the corn and soybean were harvested. Spring 2020 treatments will examine cultural practices to facilitate planting and managing canola after corn and then managing soybean following canola harvest. Specific treatments could include corn stover handling (burning, incorporation, tillage etc) bed preparation, planting, and pesticide management.

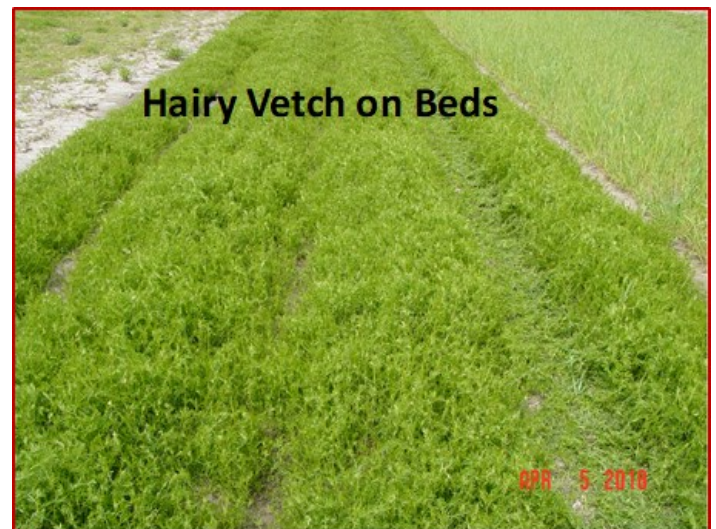
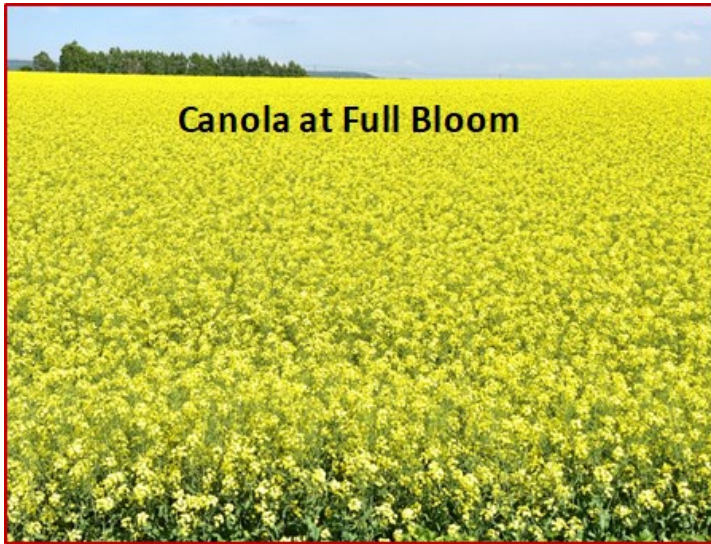
Since this crop has not been grown to any extent, initial evaluations would be aimed at residue management and stand establishment. Yields will be determined from each crop grown along with estimates of residues being returned to the soil and nutrients being removed in the grains. Economic implications will also be addressed on an individual crop basis as well as whole-farm enterprise. The hairy vetch component of the rotation following soybean would facilitate timely planting of corn in the rotation system while adding some potential nitrogen. Two new scientists are being added with expressed interest in cover crops, water management, and soil health and plan to continue the proposed research. With the current lack of cover crop for the study, the corn and soybean areas will be rotated and a second attempt will be made with the study should funding be available. One lesson learned from the problems this growing season, will be to manage the areas separately. The intention this year was to manage the cover crop together in each crop but waiting for soybean harvest prevented getting the cover crop planted behind corn. The low end of the field continues to be wet so an attempt to move the test away from the water will be made.

New scientist have been added to the project with expressed interest in cover crop, especially from the water use side of the coin. A new economist is also on board to evaluate the economic aspects of the cover crops

Project Impacts/Benefits

Results from a successful study will be vital to the potential adoption of the crops and offers a potential income source that can come directly from the crop being grown. Most studies look at the agronomic and ecological aspect of a practice but fail to identify the economic factors that a producer must have in order to assess whether that practice can be adopted for his operation. With no yield advantage in many cases, the producer must have a way to cover the cost of the cover crop including, land preparation, seed cost, planting, burn-down, and potential insect and disease issues associated with having a green crop in the non-crop season. For years, the Mid-South had a vast array of covers commonly referred to as “winter weeds”. Little information has been made available as to the importance of the free cover crop. Unfortunately, the appearance of herbicide resistant weeds that need to be controlled in the fall, have led to extensive and expensive weed control options in the fall. If some weeds are not controlled at a very early stage, they are not controlled at all. This proposed study is designed to evaluate the potential for growing a cover crop that can be harvested without delaying too much the following agronomic crop, soybean. Allowing a cover to go to seed pushes corn planting outside the optimum window.

Project Results



Project Deliverables

To date, there are no project deliverables. Weather implications are faced by growers just the same as with research. A second year will be needed to initiate the study before information on the practices and cost are available as well as the impact on future yields. Results from these studies will be are being where appropriate across the state, region and nationally. The goal is to have information that a producer can have to guide him in his decision making process and allow for significant input with probability of economic success.