

Response to SDC 348 Reviews

The thorough and favorable reviews of our project renewal are greatly appreciated. The red text below indicates how we responded to the main criticisms and suggestions.

Peer Review

----- Review 1 of 3 -----	
From: Peer Reviewer	
submitted by: Lawrence, Kathy S (lawrekk@auburn.edu)	
Reviewed on: 09-17-2012	
Recommend: Approve	
Sound scientific approach	excellent
Achievable goals/objectives	good
Appropriate scope of activity to accomplish objectives	good
Potential for significant outputs (products) and outcomes and/or impacts	good
Overall technical merit	good
Comments:	

----- Review 2 of 3 -----	
From: Peer Reviewer	
submitted by: Rupe, John (jrupe@uark.edu)	
Reviewed on: 08-31-2012	
Recommend: Approve	
Sound scientific approach	excellent
Achievable goals/objectives	excellent
Appropriate scope of activity to accomplish objectives	excellent
Potential for significant outputs (products) and outcomes and/or impacts	excellent
Overall technical merit	excellent
Comments: This project addresses ecological aspects of soilborne pathogens of major crops. This is an area of research that is complex and has not been deeply explored. Their approach is to use traditional and new approaches to understanding what pathogens are involved, how they interact, and how cropping systems and fertility affect the soilborne communities. They are concentrating on important pathogens (<i>Rhizoctonia</i> spp., <i>Pythium</i> spp., <i>Phytophthora capsici</i>) and microorganisms that may enhance or inhibit disease such as bacteria and certain fungi. With the loss of methyl bromide as a soil fumigant, understanding how soil microflora interact to cause or suppress disease is very important since there are few effective control measures available. This research should lead to a better understanding of the soil microbial community (both culturable and nonculturable organisms), improve seedling disease control, and lead to improved management strategies. The experimental approaches appear to be sound. Under Milestones they mention spatial analysis, but this was not explicitly discussed in the objectives so it is not	

clear in what context this will be conducted. This project should lead to important and useful findings.

Response: Spatial analysis in the context referred mostly to a regional comparison among states. The milestones indicating within-field analysis have been deleted.

----- Review 3 of 3 -----

From: Peer Reviewer

submitted by: Walker, Nathan (nathan.walker@okstate.edu)

Reviewed on: 09-05-2012

Recommend: Approve

Sound scientific approach	good
Achievable goals/objectives	good
Appropriate scope of activity to accomplish objectives	good
Potential for significant outputs (products) and outcomes and/or impacts	excellent
Overall technical merit	good

Comments:

Soilborne plant pathogens are important pests of agriculture in the United States. These pathogens cause seedling diseases and root rots and are typically very persistent in agricultural soils. The first objective of this project is to evaluate the population genetic diversity of several soilborne pathogens and antagonistic microorganisms from diverse sources and regions and to include various approaches to characterize these populations. The selected fungal plant pathogens have importance in many different cropping systems across diverse regions in the southern United States. As with most surveys, one limitation to success is the difficulty in obtaining the target number of isolates. The assembled group should have the qualifications and resources to ensure the collection of isolates is successful. It was unclear if all of the isolates recovered from natural ecosystems were from a single or multiple locations.

Response: For both *Pythium* and *Rhizoctonia*, multiple natural locations will be sampled. This is now clarified better in the text under Objective 1.

The second objective of the project is to examine the effect of traditional or newly developed management strategies, soil physicochemical properties, or introduced biological control agents to suppress soilborne pathogens. Modifications of the soil environment using antagonistic microbes, soil amendments, or other means have been evaluated for many years with varying success. Potential pitfalls do exist with the proposed objectives in that results may not be attainable for all those proposed. Also, the resources necessary to complete the proposed project need to be available to the investigators.

Response: As with any research project, it is correct that potential pitfalls do exist. However, based on conversations with each of the participants in the project it is clear that we all have preliminary information that strongly suggest we will be able to obtain the necessary information to compare the results across states, and we also expect environmental variation among locations and so in some areas, or some years, we may not be able to detect certain microorganisms. Also, the participants have access to funding and the resources needed for the proposed research. In most cases, participants have other projects that generate additional data that can be compiled for the purposes of this project. Finally, one of the main goals of the project is to develop a collaborative platform that is competitive for external project funding.

The proposed project addresses the need for validating and evaluation of soilborne disease management tactics in diverse cropping systems and environmental conditions. The project should integrate investigators efforts and lead to productive collaborations of relevance and contribute unique information on a regional or national level regarding the selected soilborne plant pathogens. Results should be readily reported in peer reviewed scientific journals, other publications, and to stakeholders.