

Response to Multistate Research Committee Comments

Comment: I note there is still one mention of cannabinoids in the narrative. The only attachment I find is titled "Partial list of medicinal properties and potential uses for cannabidiol (CBD) alone or with other cannabinoids." Since Cannabis sativa is subject to the Controlled Substance Act of 1970, I strongly recommend this project seek review and comment from the National Agricultural Law Center prior to approval.

Response: All mentions of CBD, cannabinoids and cannabidiol have been removed. The attachment was from the first version of the proposal entered into NIMSS and is no longer relevant. It has been removed from NIMSS. The senate version of the 2018 Farm Bill contains language that would remove industrial hemp from the list of schedule 1 narcotics and make it legal for commercial sale. The bill is currently in conference committee and if retained in the final bill, the language will remove this concern. If the language legalizing the sale of industrial hemp does not pass, this project still remains in compliance with the pilot research programs authorized by the 2014 Farm Bill. As more states look to implement pilot programs or legalize hemp state-wide, there is a need for land-grant institutions to provide unbiased, science-based guidance on its viability as a crop. States new to hemp production will benefit from the experience of others with established programs through participation in this project.

Comment: The objectives, methods, measurements and results sections are well-conceived and well written. However, they are heavily weighted towards production only. Processing and marketing objectives and methods are not adequately covered.

Response: The title of this project, which remains unchanged since the initial request for a new proposal, acknowledges the breadth of research needed to develop a viable commodity- production, processing and marketing. Because most states with pilot programs have predominantly focused on production issues, the majority of the participants joined to date have a predominant interest in that area and that is reflected in the proposal. The methods section has clarified that economic considerations (see heading III. Economics and Markets), including the refinement of enterprise budgets and analysis of market potential, will be a component of the project, though the methods are not well defined. As pilot programs expand and legislation potentially changes hemp's legal status, we anticipate more interest and means for conducting better economic and marketing analysis along with the additional participants with the appropriate expertise. Since this is such a rapidly evolving area of work, keeping economic analysis, at least in terms of production costs and potential markets, would provide flexibility needed to the land-grant partners who will increasingly be engaged in such analysis as their states develop and expand pilot programs or commercial production.

The inclusion of processing in the original title and discussion is a reflection of the array of potential post-harvest applications which must be considered when making production decisions and in evaluating variety potential. Most processing related research, however, is being done outside of experiment stations, often by industry. Research on specific processing methods is outside the scope of this project. If possible, the title could be changed to reflect this.

Comment: The project organizers have convinced me that there are numerous applications for industrial hemp products, but they do not quantify the market in terms of: Acreage to satisfy demand Number and location of processing plants Barriers to entry and market control mechanisms Lastly, there are no projections of production costs and no preliminary enterprise budgets. I question whether industrial hemp can be profitable for very many farmers.

Response: The Statement of Issues and Justification has been updated to include additional discussion of market potential, including use for biofuel and bioproducts, as well as a return above variable cost (RAVC) analysis for production data collected in Kentucky. The RAVC table for grain and fiber markets has been added to the attachments along with a comparison of probabilities of RAVCs below and above breakeven for hemp fiber and grain, soybean and corn. A discussion of the barriers to entry has been added to this section. The summary of states with industrial hemp programs has also been updated to reflect the current level of activity and interest. A discussion of recent work and analysis related to the potential of hemp for the biofuel/bioproducts market has been added to the Related, Current and Previous Work section. In short and as the market is understood today, from work in the U.S., Canada, and the EU, we can state confidently that hemp can be profitable for farmers. The depth and breadth of the industry (i.e., the number of farmers impacted by this new crop) will essentially be defined by federal regulations.