Pest Management Grant to Improve Cowpea Yields in West Africa

East Lansing, MI, July 17, 2014. The Legume Innovation Lab at Michigan State University has received a $1.45 million grant from the Bill & Melinda Gates Foundation for a three-year research project to develop integrated pest management (IPM) solutions utilizing biologicals to sustainably manage cowpea pests in smallholder farms in five West African countries.

Cowpea is an important food legume grown by approximately 10 million smallholder farmers in West Africa. It provides an affordable source of protein for countless millions in Sub-Saharan Africa. With over 50% losses in cowpea productivity due to insect pests, cowpea farmers, mostly women, have a critical need to utilize safe and effective pest management approaches.

Integrated Pest Management (IPM) is an economically viable and environmentally sustainable approach to reducing the effects of insect pests on crops. As an “integrated” approach, IPM involves managing the entire crop production process—from time of planting to the varieties selected to plant maintenance and harvest to crop storage—all to reduce the impact of insect pests on crop yield. To effectively implement IPM practices at the farm level, farmers need to be able to diagnose insect problems and have access to pest management options which they can be used in their context to effectively manage the pests in their crops.

“This project is exciting,” said Irv Widders, director of the Legume Innovation Lab, “because of its high potential to benefit smallholder farmers. Through the development of biocontrol agents and decision aids, West African cowpea farmers will be able to utilize for the first time
‘precision IPM’ practices that are both safe to humans and the environment, low cost and effective, potentially doubling their cowpea yields.”

The foundation solicited a research proposal from the Legume Innovation Lab based on its ongoing (2007–2017) and successful IPM research project in West Africa involving scientists at the University of Illinois, Urbana-Champaign and the International Institute of Tropical Agriculture. This project is expected to help make critical advances in pest management over the next three years with IPM solutions based on prototype development of the following technologies and analyses:

- A smart phone app that will allow smallholder farmers to diagnose their pest problems and determine the best management options,
- Systematic release of biological pest management agents, including scalable tracking and assessment tools, and
- An economic assessment of the potential use, benefits, and impacts of IPM approaches among resource-poor, smallholder farmers in West Africa, critical to evaluating scalability.

This research project brings together a multi-disciplinary team of scientists from the University of Illinois at Urbana-Champaign, the International Institute for Tropical Agriculture, and Michigan State University to achieve the project’s objectives.