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FEED THE FUTURE INNOVATION LAB FOR LEGUME SYSTEMS RESEARCH

January 2024



The Feed the Future Innovation Lab for Legume Systems Research fosters dynamic, profitable, and environmentally sustainable approaches that contribute to resilience, productivity, and better nutrition and economic opportunities. The lab is managed by Michigan State University.

From the Management Office

**Regional Stakeholder Convenings Planned for
Legume Value Chains in Africa and Central America
to Identify Funding Priorities**



The Legume Systems Innovation Lab will hold four regional stakeholder convenings to address gaps in regional legume value chains in Africa and Central America. The gaps identified will drive funding priorities which will be released as request for proposals (RFP) in the upcoming months.

The four regions include West Africa consisting of Benin, Burkina Faso, Ghana, Liberia, Mali, Niger, Nigeria, and Senegal; Great Lakes region consisting of Burundi, Democratic Republic of Congo, Rwanda, and Tanzania; Southern Africa consisting of Malawi, Mozambique, and Zambia; and Central America consisting of Guatemala and Honduras.

The program expects to fund legume research projects aligned with the Legume Systems Innovation Lab goals of best agronomic practices and services, targeted varietal scaling and development, inclusive inputs and market systems, and climate change adaptation and mitigation as they relate to legume value chains.

Interested parties working in any aspect of the legume value chain in the Legume Lab focus countries are encouraged to participate in these interactive events. Your expertise is needed to drive gains in this valuable food system forward.

Check your inbox for specific event details which will be announced in February. To join the Legume Systems Innovation Lab mailing list please click below.

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In the Field

Project Final Reports

The Legume Systems Innovation Lab awarded competitive and commissioned project grants to support research activity during the first five years of the lab. These projects, now concluded, have submitted final technical reports which we will feature in our monthly newsletter. This month we feature a project that worked to improve cowpea yields and smallholder farmer resilience in Senegal through the use of the Optimized Shrub System (OSS) an innovation developed by the research team.



Optimized Shrub System: Improving Cowpea Yields and Strengthening Smallholder Resilience

Led by Dr. Richard Dick, Ohio State University

West Africa suffers from recurring drought and degraded soils which limits productivity of cowpea, an important source of protein and income for rural households in the Sahel. This project pilot tested and adapted the Optimized Shrub System (OSS) to improve cowpea production in Senegal. OSS utilizes 2 indigenous shrubs (*Guiera senegalensis* and *Piliostigma reticulatum*) at densities of 1200-1500 shrubs/ha that includes annual incorporation of aboveground biomass – a system our research (34+ refereed journal articles) has shown dramatically increases crop yields (pearl millet and peanut), remediates degraded soils, and profoundly, shrubs can “bio-irrigate” adjacent crops – a powerful mechanism to combat in-season drought.

On-farm evaluation in collaboration with 30 farming households pilot testing a locally adapted, gender sensitive OSS in side-by-side comparison plots with the Traditional Management System (TMS - low shrub density and annual burning of coppiced biomass) showed that after three years, yields of millet increased by 54% with OSS over the TMS when managed by farmers.

Eight cowpea varieties that varied in duration and phenotypic properties were tested to identify superior lines for OSS. Five cowpea varieties in the same study had cowpea seeds analyzed for four nutrients which showed that OSS increased seed content of three of the four nutrients. Considering both productivity and nutritional value, the varieties Kelle and Yacine were the top performers and best adapted to be grown under OSS management.

The project also supported two master degree students, and project outputs have been and will continue to be shared through journal publications, OSS Field Days, website blogs, and the [OSS SAWBO video](#) as well as through the OSS-focused non-profit, [Agro-Shrub Alliance](#).

[Read the full report](#)

Featured Legume of the Month

COWPEA



Cowpea, also commonly known as black-eyed pea is an important source of affordable protein worldwide.

One cup of cooked cowpea is just 198 calories and provides 13 grams of protein. The legume is also high in dietary fiber, iron, and magnesium.

Cowpea is resilient to drought prone climates and can be grown in marginal environments making it an important food and fodder crop in sub-saharan Africa.

The Legume Systems Innovation Lab invests in cowpea research for a more food secure world. Innovations in pest and disease resistance are just two ways Legume Lab research is impacting this important nutritional value chain.

Cooking with Cowpea...

Hoppin John

Hoppin John is a traditional meal served throughout the Southern United States on January 1st. It is rumored to bring good luck for a prosperous new year.

This recipe found on the [Pulses.org](https://pulses.org) website, features black-eyed peas (the U.S. name for cowpea), red and green bell peppers, celery, carrots, kale and tomatoes simmered in olive oil and spiced with garlic, paprika, chili powder, and salt. Once cooked through the mixture is served over rice and garnished with green onions. A great vegetarian option to try any night of the week!



[Get the recipe](#)

For More Information on the Feed the Future Innovation Lab for Legume Systems Research

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