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FEED THE FUTURE INNOVATION LAB FOR LEGUME SYSTEMS RESEARCH

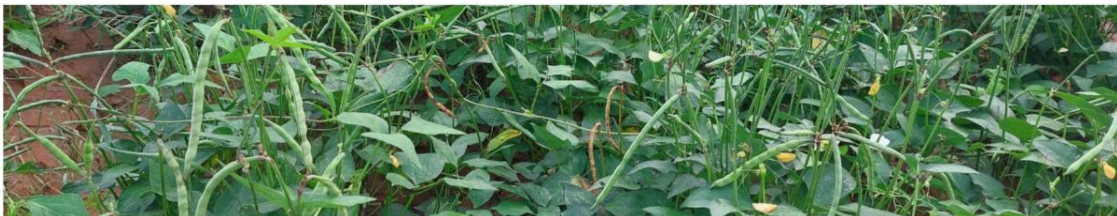
February 2024



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

First Regional Stakeholder Convening to be Held March 20 to Focus on Southern Africa Legume Value Chain



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 first event will be held on **Wednesday March 20th** and will focus on the Southern Africa legume value chain. The target countries for this event are

Malawi, Mozambique, and Zambia.

The event will held from 9:30-4:30 CAT Central Africa Time (UTC/GMT+2) via zoom. Registration is required and can be completed at this [link](#).

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 this interactive event. Your expertise is needed to drive gains in this valuable food system forward.

Check you in-box for dates to be announced soon for the regional convenings to support West Africa, Great Lakes Africa, and the Central America regions. You can also visit our website [events page](#) for the most up to date information.

[Register for Southern Africa Convening](#)

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 on the genetic improvement of dry beans for bruchid resistance.



Genetic Improvement of Dry Beans for Bruchid Resistance for Southern Africa

Led by Dr. Juan Osorno, North Dakota State University

Common bean (*Phaseolus vulgaris* L.) is the most consumed grain legume in southern Africa. Besides being a major source of protein and income for many households, it is a critical component of food security. The common bean weevil (a.k.a. bean bruchid) is a major post-harvest pest responsible for 48-100% losses in seed quality and quantity.

This project aimed to mitigate post-harvest losses of common bean and consequently, increase food security in three southern African countries Malawi, Mozambique, and Zambia. The project objectives were: (i) deploy weevil resistance in preferred market classes of common bean in Malawi, Mozambique and Zambia, (ii) develop and validate molecular markers for weevil resistance screening, and (iii) train the next-generation bean breeders from Malawi, Mozambique and Zambia.

Three improved sister germplasm lines that were developed co-operatively by Sokoine University of Agriculture, Oregon State University, USDA-ARS and the University of Puerto Rico were used as sources of weevil resistance. The basis of weevil resistance for these genotypes is the APA locus originally derived from tepary bean (*P. acutifolius* A. Gray).

Sixteen breeding lines were identified as resistant, and shared with collaborators in Malawi, Mozambique, and the USA for agronomic

performance, cooking time evaluation, and molecular marker validation.

At least two breeding lines are currently being considered for commercial release.

Furthermore, the project has trained four female next-generation breeders in plant breeding at the master's level. One student from Zambia was trained at North Dakota State University, and the other three from Malawi, Mozambique, and Zambia were trained at the University of Zambia in the Plant Breeding and Seed System master's program. This graduate training has strengthened common bean research capacity for the national breeding programs in Malawi, Mozambique, and Zambia.

[Read the full report](#)

Featured Legume of the Month

ALL PULSES!

10 February
World Pulses Day



February is pulses month and World Pulses Day is celebrated annually on February 10th. To keep with tradition, the Legume Lab features all legumes this month.

All legumes offer protein, vitamins and minerals as a part of a healthy diet. Try a new pulse this month and see if you can make 1/2 your protein a plant protein!

Cooking with Pulses...

Make 1/2 Your Protein a Plant Protein



**MAKE ½ YOUR PROTEIN
A PLANT PROTEIN**

- Good for people, good for the planet -

Pulses contain twice the amount of protein found in whole grain cereals like wheat, oats and barley and three times that of rice. Protein quality matters, particularly for growth and development.*

SUSTAINABLE FOOD FOR A SUSTAINABLE FUTURE

*Source  Food and Agriculture Organization of the United Nations

PULSES



Instead of the usual legume recipe in this section, this month the Legume Lab offers a challenge - *to make 1/2 of your protein a plant protein!* Simple changes can make a lasting impact on your health. Pulses are versatile and great for breakfast, lunch and dinner.

[Learn more about Pulses](#)

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

[Visit our website](#)



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