Extension & Outreach Newsletter

December 2022; Volume 3, Issue 4

Contents

SBAR Special Session at TriSocieties Conference

In November, SBAR Team members Dr. John Idowu, Dr. Corey Knox and Dr. Kim Ogden travelled to Baltimore to present a Special Session at the 2022 ASA-CSSA-SSSA International Conference. The Special Session, "Development and Management of Multi-Institutional and Interdisciplinary Grant Projects – Examples from USDA Coordinated Agricultural Projects" focused on management of large CAP grants. The speakers focused on how to create multi-institutional and interdisciplinary teams and research plans, manage change, and integrate education, extension, and outreach. Dr. Ogden and Dr. Knox presented for SBAR and Dr. George and Dr. Geller presented for SPARC, Southeast Partnership for Advanced Renewables from Carinata. Dr. Idowu organized and moderated the session.

SBAR: Wrapping Up Six Great Years

The SBAR Project brought together an exceptional team under the leadership Dr. Kim Ogden (University of Arizona). The group included agronomists, weed specialists, soil scientists, and biosystems engineers that work to improve feedstock production in a sustainable manner; chemical engineers that work to characterize guayule resins and bagasse while exploring new uses for these components of the plant; mechanical engineers and economists to ensure that new technologies are implemented in an economically viable and environmentally friendly way; and educators and extension agents to assure a steady supply of trained professionals to build a robust bioeconomy in the southwest. Thank you SBAR team members!

Research Updates

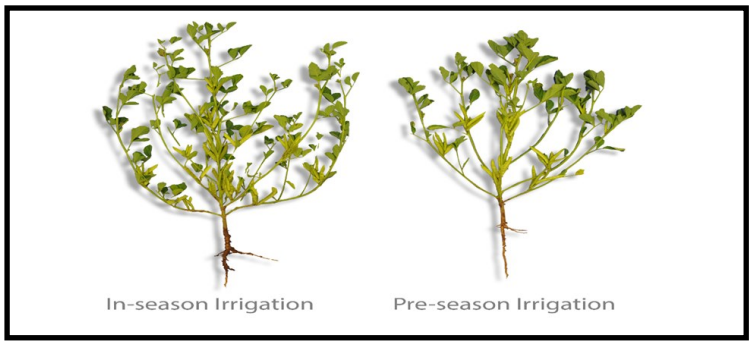
Fertility and Irrigation Management Strategies on Guar Cultivars

A study combining the effect of fertility levels on guar cultivars Kinman and Judd66, either irrigated preseason or during the growing season (5 inches), was conducted for seasonal biomass production and seed yield production at Clovis, NM during 2021.

Fertility treatments ranged from 0, 20, 40 and 60 lbs of NPK per acre. The limited irrigation given during guar growing season was more efficient in improving biomass and seed yield production compared to preseason irrigation. Applying NPK fertilizer improved biomass production at later stages and seed yield, but peak was reached with 20 lbs for biomass and 40 lbs for seed yield. Both cultivars performed for seed yield.

The trial was conducted in 2022 and samples are being processed.

Dr. Sangu Angadi, NMSU



Extension Updates

Guayule Grower Field Day a Success

On an unseasonably cold and blustery day, a large group of growers gathered at the Bridgestone Research Farm in Eloy for a Guayule Grower Field Day. Presenters included researchers and extension agents from both the University of Arizona and Bridgestone. Dr. Dave Dierig welcomed the group with an overview of Bridgestone's ongoing investment in guayule. Will Thelander offered a grower's perspective on the experience of growing guayule for 4 years. Detailed presentations covered weed and pest management practices, irrigation, using the BENCO model to forecast new crop adoption, and more.

Dr. Sam Wang provided an in-depth tour of Bridgestone's guayule fields. Special attention focused on guayule harvesting equipment developed by Bridgestone. Growers also viewed a weed control trail of newly planted guayule.

Bridgestone presented details on the contracts available to farmers interested in growing guayule. For further information, contact Del Craig of Bridgestone Americas at craigdel@bfusa.com.

Youth Development Updates

AgriScience: Expanding Connections

AgriScience and Agricultural Public Speaking contests continue to be held in New Mexico with excellent feedback from students, teachers, judges, and extension agents. These events connect rural and agriculturally-focused youth to university faculty. Dr. Maryfrancis Miller has been leading the effort to have contests at fairs around the state. In 2022, Ag New Mexico Farm Credit sponsored over $18,000 in scholarship awards for winners, along with lots of fabulous buckles.

Dr. Miller presented at WAEA in Santa Fe in June. Dr. Miller noted “Watching students speak on complex agriscience topics, and successfully present at agriscience fairs, has shown how important these efforts are to our communities in New Mexico.” Congratulations to all students who have participated!

Pumpkins, Agriculture, and Guar Bubbles in Clovis

The Agriculture Science Center in Clovis held their annual pumpkin day, where hundreds of 5th graders from area school districts learned about both agriculture and pumpkin production. We used the opportunity to highlight SBAR research and our effort to develop desert adopted crops to save our water for future generations.

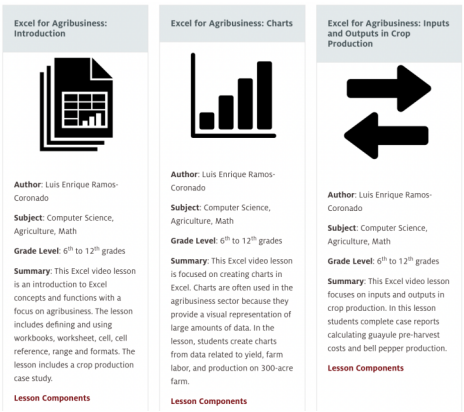
We also demonstrated guar gum’s unique characteristics by displaying guar bubble production. More than 681 students, teachers and parents participated in the program this year.

Dr. Sangu Angadi, NMSU

Spotlight on: Bilingual Excel for Agribusiness Curriculum

One unique product of the SBAR Project is a series of bilingual (English/ Spanish) Excel for Agribusiness video lessons. This curriculum is based on video lessons taught by SBAR Fellow, Luis Ramos-Coronado. For each topic, educators have a comprehensive lesson plan that includes vocabulary, quiz and case report. The series begins with the basics of Excel, with the second lesson focusing on charts. Beginning with the third lesson, the focus moves into economic terms and concepts key to successful farming such as opportunity cost, inputs, outputs, variable and fixed costs.

Even though the SBAR Project is winding down, these educational materials will continue to be available on the SBAR website and on our YouTube channel.



Education Updates

New Mexico Science Teachers Association Conference

In September the NMSU SBAR Education team presented at the New Mexico Science Teachers Association (NMSTA) Annual Conference held in Socorro, NM. This was the first conference in 2 years, and was attended by over 100 science teachers from all over New Mexico.

The SBAR session was titled “Secondary Classroom and Afterschool Lessons and Activities from the Sustainable Bioeconomy for Arid Regions USDA Project”. Presenters included SBAR Teacher Fellows, Tracie Mikesell and Cathy Bradley, Shermal Fernando, an SBAR Graduate Fellow in Chemical Engineering, and Dr. Brewer, SBAR Principal Investigator. Ms. Mikesell teaches at Mesilla Valley Leadership Academy. Ms. Bradley teaches at Lynn Community Middle School.

In addition to the SBAR session, the team hosted a curriculum table. 80 Lotería game sets were distributed, along with SBAR Education bookmarks, guayule seeds and guar gum. The conference was an wonderful celebration of the incredible work of science teachers across the state of New Mexico.

SBAR Curriculum: Real World STEM

Culturally Responsive & Place Based

The SBAR Project built a collection of curriculum for use by educators in both formal and informal settings. The curriculum is organized broadly around 5 themes: Sustainability and Arid Lands, Land Use and Cultures, Building Bio-economies, Plant Science and Sustainable Crops, and Technology, Engineering, and Chemistry. Within each theme, there are multiple lesson to explore as well as a number of culturally responsive lessons that were developed with assistance from Tribal Extension Agents. These include: Indigenous Agriculture and Plant Cultivation in the Southwest, The Three Sisters and Companion Planting, Southwestern Soil Exploration, and Biotic Resilience in the Desert.

SBAR Lotería is a unique curriculum that connects SBAR lesson concepts. The SBAR Lotería was developed by Dr. Ibarra Nieblas while she was an SBAR Education Fellow. It highlights vocabulary from lessons such as bioeconomy, biofuel, arid lands, and social sustainability, but within a bingo-type game format. In addition to playing lotería, materials can be used as flash cards, vocabulary builders, and story prompts. Lotería cards are in both English and Spanish, and some cards include words in Tohono O’odham.

STEM Career Exploration is another unique lesson that introduces students to a variety of careers. The lesson is based on short video interviews with professionals including an Extension Agent on the Navajo Nation, aviation biofuel expert, soil scientist, chemical engineer and more. Students can complete a worksheet that helps them identify what areas might interest them in their career journey.

To find and download these resources and more, go to the SBAR website and visit our YouTube channel.

Connect with SBAR

Recruiting: Growers for Guayule

Growers can contact Del Craig at Bridgestone Americas to learn more about growing guayule.

Contact: Del Craig
craigdel@bfusa.com

Plant Guides for Guar and Guayule on SBAR website

Check our website for the latest research.

https://sbar.arizona.edu/extension/growers-producers

SBAR Whole Farm Analysis Tool for Evaluating the Adoption of Guayule (BENCO)

Download the BENCO model and User Guide from our website. BENCO instructional videos will be available in 2023.

Contact: Dr. Miller

https://sbar.arizona.edu/extension/growers-producers/grower-resources#section01

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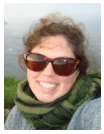

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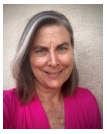

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Thank you for connecting with SBAR.

This is the final Extension & Outreach Newsletter. You can continue to find detailed research, grower resources, and educational materials on our website : https://sbar.arizona.edu

Visit the SBAR YouTube channel for video resources.

Any opinions, findings, conclusions or recommendations expressed in this publication/work are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.
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