**National Multistate Research Guidelines**

**SAES-422**

**Format for Multistate Research Activity Accomplishments Report**

*Note: This report is submitted each year of an activity’s duration and is due 60 calendar days following the annual meeting. The SAES-422 is forwarded electronically by AAs to their Executive Director. Annual Reports for MRF projects are then forwarded to CRIS by the Executive Director.*

**Project/Activity Number:** NCDC 227

**Project Title:** Advancement ofBrassica carinata

**Period Covered:**

**Date of This Report:**

**Annual Meeting Dates:** March 29-30, 2017 at Quincy, FL; February 20-22, 2018 at Panama City, FL

**Participants:**

**List of Attendees-2017**

|  |  |  |
| --- | --- | --- |
| **Alex Clayton-Agrisoma** | Yogender Khedikar-Mustard 21 | Rich Altman-CAAFI |
| Daryl Males-Agrisoma | Ken Pelt-ARA | Toby Ahrens-USDA-NIFA |
| Rick Bennett-Agrisoma | Austin Hagan-Auburn Univ. | Eric Eriksmoen-NDSU |
| Jeff Klingenberg-Agrisoma | Marku Purmonen-UPM | Charles Fenster-SDSU |
| Christine Bliss-Agrisoma | Pieter Boutmy-UPM | Yang Yen-SDSU |
| Scott Loney-Agrisoma | Bill Gibbons-SDSU | Kasi Muthukumarappan-SDSU |
| Derek Brake-SDSU | Heidi Sieverding-SD School of Mines and Tech. | Lisa Elliott-SDSU |
| Ed Coppola-ARA | David Skaggs-SD Dept. of Ag | Russ Gesch-USDA-MN |
| Steev Csonka-CAAFI | Marion Castor-Inia, Uruguya |  |
| Canan Balaban-UF | Sebastian MAzilli-INIA-Uruguay | David Wright-UF |
| Jim Marois-UF | Sheeja George-UF | Ramdeo Seepaul-UF |
| Christine Bliss-UF | Maynard Douglas-UF | Chuck Dickson-UF |
| Kelly O’Brien-UF | Nicolas DiLorenzo-UF | Ramon Leon-UF |
| Rick Brenner-ATIP | Bill Anderson-USDA-ARS | Sheeja George-UF |

**Brief summary of minutes of annual meetings**

***2017-Agenda***

**UF-IFAS-North Florida Research & Education Center, Quincy, Florida**

**March 29, 2017**

* Introduction –**Nicholas Comerford**-UF-IFAS-NFREC-9:00-9:15 AM
* Opening Remarks-**John Davis** UF-IFAS-9:15-9:25 AM
* Biofuels and agriculture in the Southeast US-What’s in it for the agricultural community-**Kelley Burk-**FDACS-Office of Energy-9:25-9:40 AM
* Global presence of carinata. Markets and implications for the US bioeconomy-**Alex Clayton-**Agrisoma-9:45-10:10 AM
* An economic analysis of commercial Brassica carinata production in the Southeast-**Jeff Klingenberg** –Agrisoma- 10:15-10:35 AM
* Fuel certification, bioproduct ventures and commercialization pathway updates-**Ed Coppola**-Applied Research Associates-10:45:11:05 AM
* Aviation alternative fuel demand and supply status/RFS2 and beyond- **Steve Csonka-**CAAFI-11:10-11:30 AM
* Regulatory aspects of carinata feedstock and fuel production-**Barbara Bramble**- Roundtable Sus. Biomaterials- 11:35-11:55 AM
* Panel Discussion: 11:55 to 12:05
* High throughput phenotyping tools for *Brassica carinata*-**Ian Small (UF), Duke Pauli (Cornell), and James Clohessy (UF)-** 1:30-2:00 PM

**Field tours (Quincy)-2:15-4:15 PM**

* Station 1: Agronomy (tillage, nutrient management, harvest management)-**Ramdeo Seepaul**
* Station 2: The Agrisoma-UF *Brassica carinata* crop improvement program-**Rick Bennett**
* Station 3: System fit of Brassica carinata-Life cycle analysis study- **David Wright**

ADJOURN -4:00 PM

**March 30, 2017**

**Registration: 8:30 AM**

* Introduction-**Ian Small** (UF-NFREC)-9:00-9:05 AM
* A cropping system fit analysis of Brassica carinata in the Southeast US context-**David Wright** (UF-NFREC)- 9:05-9:25 AM
* Harvest management practices for Brassica carinata management practices for the Southeast-**Ramdeo Seepaul** (UF-NFREC) -9:30-9:50 AM
* Nutrient management in Brassica carinata-**Mike Mulvaney** (UF-WFREC) -9:55-10:10 AM
* Emerging diseases and pests of Brassica carinata-**Ian Small** (UF-NFREC) **and Austin Hagan** (Auburn)-10:25-10:45 AM
* Herbicide chemistry updates for Brassica carinata-**Barry Brecke** (UF-WFREC) 10:50-11:10 AM
* *Brassica carinata* production update from Uruguay –**Marina Castro** (INIA, Uruguay) and **Sebastian Mazzilli** (University of the Republic, Uruguay) 11:15-11:45 AM
* *Brassica carinata* crop insurance-What, When, and How-**Phil Deal** (USDA-RMA) 11:50 AM-12:05 PM
* Panel Discussion: 12:10 to 12:20 PM
* Research gaps and needs to build a sustainable bioeconomy-a USDA perspective-**Toby Ahrens**-USDA-NIFA -1:30-1:50 PM
* Updates on Brassica carinata breeding effort-**Rick Bennett** (Agrisoma)-1:55-2:15 PM
* FL feeding trials with beef cattle - Nicolas DiLorenzo (UF-NFREC)-2:20-2:40 PM
* SD feeding trials with beef cattle-Derek Brake (SDSU)-2:45-3:05 PM
* Quantifying the contribution of native and non-native pollinators to *Brassica carinata* yield and *B. carinata's* impact on pollinator health-**Charles Fenster** (SDSU)- 3:15-3:35 PM
* South Dakota life cycle analysis-**Heidi Sieverding** (SD School of Mines and Technology)-3:40-4:00 PM
* Sustainability and life cycle analysis of *Brassica carinata* production in the Southeast US-**Agrisoma**-4:05-4:25 PM

QUESTIONS

* Future direction and other discussions-facilitated by Sheeja George (UF-NFREC)-4:30-5:00 PM
* Adjourn

**March 31-Commercial production site tour-**

Field tour will be in the Bainbridge/Donalsonville, GA area. During on-site registration please indicate whether you would like to go on the field tour.

***List of Attendees-2018***

|  |  |  |
| --- | --- | --- |
| Alex Clayton-Agrisoma | Yogender Khedikar-Mustard 21 | Rich Altman-CAAFI |
| Glenn Johnston-Agrisoma | Ken Pelt-ARA | Toby Ahrens-USDA-NIFA |
| Alex Bolques-FAMU | Austin Hagan-Auburn Univ. | Eric Eriksmoen-NDSU |
| Jeff Klingenberg-Agrisoma | Marku Purmonen-UPM | Charles Fenster-SDSU |
| Christine Bliss-Agrisoma | Pieter Boutmy-UPM | Yang Yen-SDSU |
| Scott Loney-Agrisoma | Bill Gibbons-SDSU-remote | Kasi Muthukumarappan-SDSU |
| Derek Brake-SDSU | Heidi Sieverding-SD School of Mines and Tech. | Lisa Elliott-SDSU |
| Ed Coppola-ARA | David Skaggs-SD Dept. of Ag | Russ Gesch-USDA-MN |
| Steev Csonka-CAAFI | Marion Castor-Inia, Uruguya |  |
| Canan Balaban-UF | Sebastian MAzilli-INIA-Uruguay | David Wright-UF |
| Jim Marois-UF | Sheeja George-UF | Ramdeo Seepaul-UF |
| Christine Bliss-UF | Maynard Douglas-UF | Chuck Dickson-UF |
| Kelly O’Brien-UF | Nicolas DiLorenzo-UF | Ramon Leon-UF |
| Rick Brenner-ATIP | Bill Anderson-USDA-ARS | Sheeja George-UF |
| Ben Christ-UF | Wendy-Lin Bartels-UF | Bill Hubbard-UF |
| Bisoondat Macoon-MSU | Blaire Colvin-UF | Brian Baldwin-MSU |
| Carl Crozier-NCSU | Chris Chammoun-GA Centers on Innovation | Chris Cassidy-USDA |
| Jessica Kelton-Auburn Univ | Chuck Red-ARA | Clyde Fraisse-UF |
| Dan Geller-UGA | Dewey Lee-UGA | Dwarika Bhattarai-SDSU |
| George Philippidis-USF | John Leeds-FDACS | Michael Loey-Sunshine Biofuels |
| Jill Anderson-SDSU-remote | Paul Okello-SDSU | Tom Schecnk-Terviva |
| Stephen Miller-UF | Woo Kim Kyun-UGA |  |

**2018 Agenda**

*February 18, 2018*

**6:00-7:00 PM**- Welcome Reception- St. Andrews Terrace

*February 19, 2018*

**7:00-8:00 AM**: Breakfast- Grand Lagoon Ballroom E

**7:15-8:15 AM***: Registration-Grand Lagoon Ballroom Foyer*

*General Session (Grand Lagoon Ballroom D)-Ian Small-Moderator*

**8:00-8:20 AM**: Welcome and Introductions- *David Wright, SPARC PD & Professor of Agronomy, University of Florida*

**8:20-8:30 AM**: Opening Remarks- *John Davis-Assoc. Dean for Research –University of Florida, Institute of Food and Agricultural Sciences*

**8:30-9:10 AM**-Current global state of carinata feedstock development- *Jeff Klingenberg-VP, Agronomy, Plant Breeding, Regulatory Affairs-Agrisoma Biosciences Inc.*

**9:10-9:50 AM**- Markets and policy-capitalizing on opportunities presented by carinata and overcoming hurdles –*Steve Csonka-Executive Director, CAAFI*

**9:50-10:20 AM**- Break with poster session\*\* (Grand Lagoon Ballroom Foyer DE)

**10:20-11:00 AM-** Bioenergy and rural development-*Chris Cassidy-USDA Rural Development*

**11:00-11:30 AM**- Carinata fit in the animal feed industry-*Leah Wilkinson- VP, Public Policy and Education, AFIA*

**11:30-11:50 AM**-Q&A and session adjourn

*Technical Sessions (Concurrent)*

*Feedstock Development (Grand Lagoon Ballroom D)-Ramdeo Seepaul-Moderator*

**1:00-1:15 PM**- Carinata crop improvement updates-*Jeff Klingenberg, Plant Breeding, Agrisoma Biosciences Inc.*

**1:15-1:30 PM**- Carinata yield components, seed and oil yields response to sulphur and nitrogen nutrition- *Ramdeo Seepaul, Faculty Research Asst. Scientist, University of Florida*

**1:30-1:45 PM**-Response of Ethiopian Mustard (*Brassica carinata*) to nitrogen and sulfur fertilizers in South Dakota-*Dwarika Bhattarai, South Dakota State University*

**1:45-2:00 PM**- The complexity of glucosinolates in *Brassica carinata* and possible role in sustainable farming- *Ted Stansly, University of Florida*

**2:00-2:15 PM**- Agronomic evaluation if carinata in North Florida-*Blaire Colvin, University of Florida*

**2:15-2:30 PM**- Review of chemical injury in carinata-*Bill Gibbons (On behalf of Paul Johnson), South Dakota State University*

**2:30-2:45 PM**- First report of root rot caused by species of Fusarium on *Brassica carinata in* South Dakota-*Paul Okello, South Dakota State University*

**2:45-3:00 PM** – Diseases Activity and Adaptability of Carinata in Alabama - *Austin Hagan, Auburn University*

**3:00-3:15 PM**-Q&A and session adjourn

*Supply Chain & Business Development (Oleander)*

**1:00-3:00 PM**- Concurrent small group networking session-Supply chain development***-****facilitated by Rich Altman*

**3:15-3:45 PM**-Ice Cream Social (Grand Lagoon Ballroom Foyer DE)

**3:45 PM Onwards**-Free time to explore the bay!

*Closed Group Meetings*

**3:45-5:00 PM**-Joint SPARC Advisory Board and Steering Committee meeting- *(Oleander)*

**5:30 PM***-Meet in Sheraton lobby if you need a ride to go to dinner. For this commute we will have 3 UF vans that can accommodate up to 18 people. This is for those who do not have their own/rented vehicles*

**6:00 PM**-All meet for dinner at Captain Anderson’s Restaurant- (*5551 N Lagoon Dr. Panama City Beach, FL-32408)*

***February 20, 2018***

**7:00-8:30 AM**: Breakfast- Grand Lagoon Ballroom E

**7:15-8:15 AM***: Registration-Grand Lagoon Ballroom Foyer*

*Closed Group Meetings*

**7:15-8:15 AM**: SPARC Supply Chain team meeting-(Oleander)

*General Session (Grand Lagoon Ballroom D)-Sheeja George Moderator*

**8:30-9:00 AM**-Overview of the Southeast Partnership for Advanced Renewables from Carinata (SPARC)-*Dr. Ian Small, SPARC Deputy PD & Asst. Professor of Plant Pathology, University of Florida*

**9:00-9:30 AM**- From Farm to end users - building Southeast US state and regional supply chains –*Rich Altman-Director Emeritus, CAAFI*

**9:30-10:00 AM***-* Community/stakeholder perception of bioenergy-examples from other bioenergy feedstock-opportunities and barriers for carinata-*William Hubbard- Southern Regional Extension Forester, Dan Geller, Extension Associate for Climate Change and Bioenergy, University of Georgia, Benjamin Christ-Extension Social Science Research, University of Florida*

**10:00-10:30 AM**-Break (Grand Lagoon Ballroom Foyer DE)

**10:30-11:00 AM** Coproduct driven economics of renewables-*Chuck Red, VP-Fuels Development, Applied Research Associates*

**11:00-11:25 AM**- Update on multi-state carinata project-*Bill Gibbons, South Dakota State University*

**11:25-11:45 PM**-Q&A and session adjourn

**11:45-1PM** Lunch (Grand Lagoon Ballroom E)

*Technical Session-Ramdeo Seepaul Moderator*

*Ecology, Life cycle analysis, fuel and coproducts (Grand Lagoon Ballroom D)*

**1:00-1:15 PM**- A pathway to understanding producer adoption of *Brassica carinata* in the Southeast United States-*Benjamin Christ, University of Florida*

**1:15-1:30 PM***-Carinata pollinator dependent yield in the South Dakota Landscape- Henning Nottebrock, South Dakota State University*

**1:30-1:45 PM** -*What agricultural producers and researchers need to know about carinata life cycle assessment- Heidi Sieverding, South Dakota School of Mines and Technology*

**1:45-2:00 PM** - Florida cattle feed efficiency trials- *Nicolas DiLorenzo, University of Florida*

**2:00-2:15 PM** - Evaluation of feeding carinata meal compared with canola meal and soybean meal to growing dairy heifers- *Jill Anderson, South Dakota State University*

**2:15-2:30 PM** – Polymers from the carinata bio refinery- *Stephen Miller, University of Florida*

**2:30-2:45 PM** *–*Co-products from carinata oil*-Ed Coppola, Applied Research Associates Inc.*

**2:45-3:00 PM** -Q&A and session

**3:00-3:20 PM**- Wrap Up-*Sheeja George*

**3:20-3:35 PM**-Quick break and assemble to leave for ARA

**3:35-5:00 PM**- Travel to and visit ARA (*Please indicate interest in advance so necessary arrangements can be made. A valid ID such as driver’s license/passport is required at sign-in at ARA)*

**5:00 PM**-Adjourn from ARA

\*\* Posters By:

1. Benjamin Christ & Jeff Klingenberg-University of Florida-Agrisoma
2. Michael Brown & Bill Gibbons-South Dakota State University
3. Patrick Troy-University of Florida
4. Ramdeo Seepaul & David Wright-University of Florida
5. Steven Shen & Stephen Miller-University of Florida
6. Shane Stiles & Charles Fenster -South Dakota State University
7. Zhaoui Tong & Karyn Moses-University of Florida

**Accomplishments and Impacts for 2017-18:**

* Large datasets on production best practices have been developed from the northern plains ad southeast US regions
* The multi-state meetings have enabled data sharing across regions leading to future collaboration
* New areas have been added to the SE scope, new locations for advanced yield trials etc.
* Commercial production of carinata is the SE; 2017-18 is the 4th year of commercial acreage
* Much focus is on supply chain establishment, infrastructure development in the region to support large scale adoption among producers
* Risk mitigation for all stakeholders has to be the key focus going forward specifically risk involved in production
* New improved carinata lines are key to increased cold tolerance for winter production, high yield and early maturity (for winter production)
* Multi-institution bioenergy CAP funded; this is being leveraged for current and future collaborations

**Publications:**List the publications for current year only (with the authors, title, journal series, etc.).

NA, this is the first year of the project

**Authorization:** Electronic signature of the Administrative Advisor, with the date.