NE 2210 Annual meeting

Agenda:

Introductions:

Go through existing objectives:

* 1. Developing regionally adapted, resilient alfalfa germplasm pools. Cooperating locations: AES: Cornell Univ., Univ. Florida, Univ. Vermont, and Univ. California, Davis [co-lead]; USDA-ARS: Logan, UT and Madison, WI [co-lead]; AAFC: Québec, QC, Saskatoon, SK

1.2. Evaluating annual cover crops for regional adaptation and climate resilience and mitigation. AES: Cornell Univ. [Lead], Univ. Rhode Island; Univ. Vermont, AAFC: Truro, NS.

1.3. Developing switchgrass germplasm with improved fungal pathogen resistance. Cooperating locations: AES: Cornell Univ. [lead], Mississippi State Univ., Rutgers Univ., South Dakota State Univ.; USDA-ARS: Madison, WI.

1.4. Developing resilient cool-season grasses

adapted to variable climatic conditions. Cooperating locations: AES: Cornell Univ.; South Dakota State Univ.; Univ. California, Davis; Univ. Kentucky, and Univ. Minnesota; USDA-ARS: Logan, UT [co-lead] and Madison, WI; AAFC: Québec, QC and Saskatoon, SK [co-lead].

1.5. Determining the extent of genetic variability of CT among currently available birdsfoot trefoil cultivars and elite lines. Cooperating locations: AES: Cornell Univ., Univ. Rhode Island; Univ. Vermont USDA-ARS: Logan, UT and Madison, WI; AAFC: Truro, NS [lead].

1.6. Evaluating Miscanthus for forage and bioenergy across warm season locations. AES: Univ. Mississippi [co-lead], Univ. Illinois [co-lead].

1. Understanding genotype by environment interactions across multiple forage species

Comments: Cooperating locations: AES: Auburn Univ., Cornell Univ., Mississippi State Univ., Rutgers Univ., South Dakota State Univ., Univ. California, Davis, Univ. Florida, Univ. Georgia, Univ. Kentucky, Univ. Minnesota, Univ. Rhode Island, Univ. Tennessee; Univ. Vermont; USDA-ARS: Logan, UT and Madison, WI; AAFC, Lethbridge, AB, Québec, QC, Saskatoon, SK, and Truro, NS.

Our meeting followed the outline of our various activities:

1.1 Developing regionally adapted, resilient alfalfa germplasm pools. Cooperating locations: AES: Cornell Univ., Univ. Florida, Univ. Vermont, and Univ. California, Davis [co-lead]; USDA-ARS: Logan, UT and Madison, WI [co-lead]; AAFC: Québec, QC, Saskatoon, SK

Charlie presented on activities at UC Davis to develop germplasm pre-breeding pools.  These are focused on southern breeding pools, with field sites at Davis CA Stockton CA and Prosser Wa.  THis is funded by alfalfa seeds and forage. Mike and Ginny and Heathcliffe all added to the discussion, as they handle the northern adapted germplasm pools.  The Utah, Toulame Lake (Ca) and Ithaca New York sites have harvested year 1. Nova Scotia has selected matching material,  Annie had connection difficulties.  The project is generally making headway, with ongoing phenotyping at all participating sites.  There was an extended discussion of finding new funding.

Xu led a conversation of genotyping of alfalfa germplasm, which is being done by DART-SEQ through breeding insight. Brian Irish is going work on characterizing PI accessions in the National Plant Germplasm System.

1.2. Evaluating annual cover crops for regional adaptation and climate resilience and mitigation. AES: Cornell Univ. [Lead], Univ. Rhode Island; Univ. Vermont, AAFC: Truro, NS.

 Ginny and Heathcliffee discussed ongoing activities in the cover crop breeding network, including work on overwintering peas, hairy vetch, and minor clovers.  This has been supported by a NIFA OREI and SAS CAP.  Discussion included ways to bring in folks not part of this grant.  There is some interest in using tricot methods on farmers to be more participatory.  Ginny also discussed an unfunded NE SARE proposal.  von Wettberg discussed msc work of UVM student Emmanuel Brefo.

1.3. Developing switchgrass germplasm with improved fungal pathogen resistance. Cooperating locations: AES: Cornell Univ. [lead], Mississippi State Univ., Rutgers Univ., South Dakota State Univ.; USDA-ARS: Madison, WI.

This was skipped due to the participants not being present.

1.4. Developing resilient cool-season grasses adapted to variable climatic conditions. Cooperating locations: AES: Cornell Univ.; South Dakota State Univ.; Univ. California, Davis; Univ. Kentucky, and Univ. Minnesota; USDA-ARS: Logan, UT [co-lead] and Madison, WI; AAFC: Québec, QC and Saskatoon, SK [co-lead].

Mike, Bill, and ANnie discussed funded work in this aim in Canada.  Tall fescue, orchardgrass, and timothy are the foci.   They are moving quickly towards a complete manuscript.  Yousef is doing related work on mixing grasses and timothy.

Heathcliffe also discussed work in this aim on the US.  This objective is moving more slowly than others due to it being funded on the Canadian side.

1.5. Determining the extent of genetic variability of CT among currently available birdsfoot trefoil cultivars and elite lines. Cooperating locations: AES: Cornell Univ., Univ. Rhode Island; Univ. Vermont USDA-ARS: Logan, UT and Madison, WI; AAFC: Truro, NS [lead].

 Yousef and Rebecca both gave presentations on progress. Condensed tannin characterization is back on schedule after pandemic delays.  The URI field trial is largely wrapped up, after two successful seasons but increasing amounts of weed growth.

1.6. Evaluating Miscanthus for forage and bioenergy across warm season locations. AES: Univ. Mississippi [co-lead], Univ. Illinois [co-lead].

This activity was skipped due to the absence of participants.

1.7 We added a new objective, 1.7.  THis is on breeding for intercropping.  This is based on funding Ginny Moore, Heathcliffe Riday, and Brandon Schlautman at the Land Institute have for breeding alfalfa to pair with kernza.  Non-participatn Jean-Luc and others are doing similar work to breed oats and peas for co-cultivation.  This aim will be expanded next year.

1. Understanding genotype by environment interactions across multiple forage species

Comments: Cooperating locations: AES: Auburn Univ., Cornell Univ., Mississippi State Univ., Rutgers Univ., South Dakota State Univ., Univ. California, Davis, Univ. Florida, Univ. Georgia, Univ. Kentucky, Univ. Minnesota, Univ. Rhode Island, Univ. Tennessee; Univ. Vermont; USDA-ARS: Logan, UT and Madison, WI; AAFC, Lethbridge, AB, Québec, QC, Saskatoon, SK, and Truro, NS.

Ali Missaoui led the discussion on this topic.  It is moving towards a publication on G\*E across sites.  It is waiting for data from one or two sites.