**Minutes from the:**

**SAES-422 Multistate Research Project W-3008:**

**Integrated Onion Pest and Disease Management**

**ANNUAL MEETING**

**8:30 am to 5:00 pm**

Amway Grand Plaza Hotel

187 Monroe Avenue NW

**Grand Rapids, MI**

**December 4, 2017**

**Meeting held preceding the Great Lakes Fruit, Vegetable and Farm Market Expo, December 5-7, 2017**

**W3008 Committee Officers – 2017:**

**Chair:** Lindsey du Toit, Washington State University

**Vice-Chair:** Christy Hoepting, Cornell University

**Secretary:** Beth Gugino, The Pennsylvania State University

**Past Chair:** Tim Waters, Washington State University

**Participants:**

|  |  |  |
| --- | --- | --- |
| **Name** | **Affiliation** | **Email** |
| Beth Gugino | The Pennsylvania State University | bkgugino@psu.edu |
| Tim Waters | Washington State University | twaters@wsu.edu |
| Steven Beer | Cornell | svb1@cornell.edu |
| Rick Jones | Seminis Vegetable Seed | rick.jones@monsanto.com |
| Jeremiah Dung | Oregon State University | Jeremiah.dung@oregonstate.edu |
| Claudia Nischwitz | Utah State University | claudia.nischwitz@usu.edu |
| Kerrick Bauman | L & L Ag Production | kerrick@llfarms.com |
| Filippo Rimi | Crookham Company | filippor@crookham.com |
| David Whitwood | Crookham Company | davew@cookham.com |
| Steve Loring | New Mexico State University (AA) | sloring@nmsu.edu |
| Manzeal Khanal | Texas A&M University | manzeal.khanal@ag.tamu.edu |
| Megan Lewien | Bayer-Nunhems Vegetable Seed | megan.lewien@bayer.com |
| Katie Goldenhar | Syngenta Canada | katie.goldenhar@syngenta.com |
| Beth Brisco | Michigan State University | briscoel@msu.edu |
| Ben Werling | Michigan State University | werlingb@msu.edu |
| Kristin Oomen | Bejo Seeds, Inc. | k.oomen@bejoseeds.com |
| Alex Putman | UC Riverside | aiputman@ucr.edu |
| Subas Malla | Texas A&M University | subas.malla@ag.tamu.edu |
| Travis Cranmer | OMAFRA | travis.cranmer@ontario.ca |
| Bhabesh Dutta | University of Georgia | bhabesh@uga.edu |
| Robert T. Sakata | Sakata Farms | rtsakata@aol.com |
| Joe LaForest | Southern IPM Center | laforest@uga.edu |
| Christy Hoepting | Cornell Cooperative Extension | cah59@cornell.edu |
| Brian Nault | Cornell University | ban6@cornell.edu |
| Ashley Leach | Cornell University | al2282@cornell.edu |
| Chris Cramer | New Mexico State University | cscramer@nmsu.edu |
| Mark Uchanski | Colorado State University | mark.uchanski@colostate.edu |
| Lindsey du Toit | Washington State University | dutoit@wsu.edu |
| David Brink | Brink Muck Farms | brinkmuchfarms@att.net |
| Kevin Vander Kooi | University of Guelph | kvander@uoguelph.ca |
| Zach Telfer | University of Guelph | ztelfer@uoguelph.ca |
| Glenn Vogel | Vogel Produce, Inc. | vogelproduce@netmail.com |
| Scott Vogel | Vogel Produce, Inc. | scottvogel@gmail.com |

Chair Lindsey du Toit called the meeting to order at 8:30 am.

**Special thanks to our meeting sponsors:** Robert Sakata, Rick Jones representing Seminis/Monsanto, Kristin Oomen representing Bejo Seeds, Wayne Mininger representing the National Onion Association, Dave Whitworth representing Crookham Seed Co., Megan Lewien and Juan Carlos Brevis representing Nunhems/Bayer, Dave Brink of Brink Muck Farms in Grant, MI, and Steve Loring, NMSU.

**Update from Steve Loring, Administrative Advisor:**

* This is a joint meeting that represents the conclusion of the W-2008 project, which ended in September 2017, and the start of the new project, W-3008.
* The termination report for W-2008 is due this year with a particular emphasis on impacts. Frame the impacts around their importance to the onion industry. These are used to justify continued funding. Steve shared handouts about what makes a good impact statement (see attachments).
  + Steve is looking for good photographs that can be included in the report. We will likely be chosen for a national impact statement – Steve said “Help me tell your story”.
* Nomination for multistate award of excellence – 1st step is review by the regional associations and then 2nd step is being put forward for the national award. Steve was encouraged to nominate our project again this year. The 3-page nomination form emphasizes outputs, outcomes and impacts; added value and synergistic activities – how working together and with industry has benefited the project; leveraged funding – include specific examples – What have we done, what is the impact and how have we leveraged funding. The nominations are due to the western regional association by Feb 28th.
* We have 30 days from this meeting to get the termination report submitted.

**Other notes:** [Onionbusiness.com](http://onionbusiness.com/) has a newsletter that might be of interest to this group. A writeup of this meeting will be by Kerrick Bauman shortly after this meeting.

**State Reports:**

**California – Bob Ehn (unable to attend)**

* Bob Ehn shared that downy mildew was the main problem in southern CA along with some bacterial issues this past winter.

**Colorado - Mark Uchanski (Colorado State University)**

* Also presenting on behalf of Mike Bartolo and Thad Gourd
* They are evaluating chemistries for control of Xanthomonas leaf blight and other bacterial issues in Colorado using copper compounds, Tanos and Fontelis.
* Onion variety trial with 42 cultivars evaluated – trials are currently in storage for evaluation.
* 2017 Field conditions – more precipitation than usual; large hail storm on 10 August caused significant damage and resulted in field culls and few storable onions.
* Management strategies for IYSV: Managing potassium fertilizer – Does higher soil K mean more IYSV (*iris yellow spot virus*) symptom expression – observing increased symptomology under higher potassium in the field trial.
  + In a field trial they applied and incorporated high rates of potassium but did not see a significant effect of this treatment on yield
  + 2016 IYSV incidence: ELISA vs. visual symptoms of iris yellow spot (IYS) correlated well. Observed some relationship between soil K level and IYSV; however, in 2017 IYS was very limited in occurrence – not sure why there has been a trend towards lower incidence in the field. In an attempt to increase disease pressure, they even placed symptomatic bulbs (probably loaded with thrips) in the field.
* Thad Gourd conducted a cultivar trial to evaluate thrips populations, Fusarium basal rot, pink root and onion maturity; very low incidences of IYS were observed.
  + Evaluation of MeloCon (OMRI registered biological nematicide) on onion – did not see any significant differences but nematode pressure was very low in the field this year (farmer grows onions once every 4 years and does not fumigate).
* Proposed mitigations for all copper compounds (refer to the email sent out by the Environmental Protection Agency, and forwarded to many members of the W-3008 by Wayne Mininger from the National Onion Association) – the comment period closed on Nov 22 – EPA proposing reducing the total amount of copper that can be applied to onion crops 6 to 5 lb a.i./year
  + How does this impact production?
    - Ontario growers are not using a lot of copper; however, drip and furrow irrigation, which are the predominant types of irrigation in the Treasure Valley of OR/ID, might not be as conducive to bacterial diseases as center pivot irrigation, due to the differences in crop microclimate under different irrigation systems.
    - Robert Sakata – Colorado – growers only use copper when there is a storm; only ½ of the CO acreage is overhead irrigated, and when they use drip irrigation, they only use 3 lines on a bed to encourage air circulation and lower relative humidity; CO onion crops in the front range received 15 in. of rain this season; they had ideal onion growing weather so they anticipate a good storage season for 2017-18.

**Pennsylvania – Beth Gugino (The Pennsylvania State University)**

* Losses due to bacterial diseases were minimal this past season and there was an estimated 5% loss due to allium leafminer.
* Trials evaluating the effect of nitrogen fertilizer application rate on center rot incidence and severity; alternative plastic mulch trial and on-farm demonstration trials, cultivar trials comparing Candy (commercial standard) with Spanish Medallion (3 on-farm and 1 research trial), and a product efficacy trial in which Companion numerically (but not statistically) reduced center rot incidence in the inoculated subplots.
* Allium leafminer research is being conducted by Shelby Fleischer et al.
  + The pest was confirmed initially in southeastern, and now is in much of the eastern half of Pennsylvania as well as NY, NJ and MD. USDA APHIS PPQ is unlikely to invoke action.
  + The first report will be published in the Journal of Integrated Pest Management and the common name allium leafminer is now recognized by the Entomological Society of America.
  + Symptoms include a line of oviposition marks on the leaves as well as serpentine mines. The larvae burrow down into the bulb and pupate. There are two flights a year, in spring and fall.
  + All alliums are susceptible.
  + Long-distance transport on planting material is a potential concern.
  + The Fleischer lab was able to rear a colony in the lab which is promising for conducting future research.
  + Future research includes comparing infestation levels among different allium hosts and cultivars; evaluating planting dates for bunching onions; and conducting insecticide efficacy trials.

**Georgia - Bhabesh Dutta (University of Georgia)**

* 2017 was a good production year – the estimated crop is valued at $145 to $150 million which represents an $8 M increase – it was a warm winter so the onions grew faster and many crops escaped disease.
* Bhabesh covered the results of fungicide trials and recommendations for growers
* Botrytis leaf blight (BLB) - #1 fungal disease on Vidalia onions
  + Ghost spots observed when there is significant rainfall, high humidity and temperatures of 50 to 75°F.
  + Growers start spraying in mid-February/early March so the crop is often left unprotected from November to February
  + Could one spray of Fontelis (overhead drench) one week after transplanting on top of the typical last season fungicide program improve management?
  + A single overhead drench application across all treatments significantly reduced the severity of BLB. In addition, a significant yield increase for both cultivars (Vidora and Pirate) was observed in plots treated with Fontelis.
  + The new recommendation for onion growers is an early season application of a SDHI or Fungicide Resistance Action Committee (FRAC) Group 7 fungicide (Endura, Fontelis or Merivon) a week to 10 days after transplanting, followed by a Pristine/Bravo/Manzate rotation until mid-February, and then rotation with single-site mode of action fungicides (Inspire Super, Scala, Rovral or Omega 500).
  + Discussion ensured over whether the Fontelis application might be affecting soilborne pathogen populations which, in turn, could be affecting severity of BLB?
* Other diseases they observed include Fusarium basal rot, yellow bud (occasionally seen), and sour skin (but limited incidence in 2017). Downy mildew was last reported in 2012. Purple blotch and Stemphylium leaf blight were a moderate issue.
* Center rot – three species of *Pantoea* cause this disease; sources of inoculum include weeds (only for *P. ananatis*) and seed; the bacteria are also transmitted by the onion thrips and tobacco thrips.
  + Which onion growth stage is most susceptible to bulb infection by *P. ananatis*? Seedling, true leaf, etc.
    - Infection of onion plants at the first true-leaf stage, bulb initiation and bulb swelling were evaluated by cutting the leaf tip and inoculating the cut surface
    - They observed a significant effect of plant growth stage and variety; all three stages were susceptible; however among them 1st leaf senescence stage was most susceptible.
    - Can we protect those specific growth stages using bactericide products, and how does thrips population influence this? Greenhouse experiments were conducted, demonstrating that thrips infestation had a significant effect on center rot development.
      * In the absence of thrips, the application of bactericide products at different growth stages influenced severity of center rot. Kocide 3000 had the most significant effect, but when thrips were present in the trials, no product was effective. (30 thrips and 10 plants per cage were evaluated – 3 thrips per plant has been established as the threshold for center rot).
    - Commercial onion field trial – inoculation of onion plants with center rot pathogens at the bulb initiation stage resulted in similar differences in bactericide efficacy as the greenhouse trials; also at the bulb swelling stage. When all growth stages were treated to limit thrips feeding injury, similar statistical differences were observed among the bactericide treatments, but the differences were not significant when plants were not sprayed for thrips.
* Observed significantly higher marketable yields for Kocide and Kocide + Actigard treatments when they were applied at either bulb initiation or bulb swelling.

**Michigan – Beth Brisco representing Mary Hausbeck (Michigan State University)**

* Evaluating the interaction between bacterial foliar diseases and onion thrips – Protecting onions from thrips damage significantly reduced disease severity; they evaluated applications with and without insecticides/surfactants, etc.
* They are also evaluating sources of bacterial inoculum – weed sampling and seed sampling – and have isolated suspect bacteria
* Evaluating nitrogen fertility effects on bacterial disease incidence and severity
* Growers were more interested in Stemphylium leaf blight than bacterial diseases this season because conditions were not highly conducive to bacterial diseases
* Other trials are in progress:
* Pink root cultivar trials over 3 years – highly variable results across years; penthiopyrad (Fontelis) was significantly better at reducing pink root severity; pathogen diversity studies – they did not detect variability in the pathogen population from samples collected across MI
* Bacterial diseases – survey of foliar diseases; there were differences in cultivar susceptibility depending on the pathogen; they also are evaluating the effects of temperature, humidity and planting date on bacterial disease severity
* Ben Werling, Extension Educator with MI State University, added that the weather was good for onion production this past season although some issues with Stemphylium leaf blight were observed on one farm. In general, the drier season led to less issues with bacterial diseases.

**New Mexico - Chris Cramer (New Mexico State University)**

* Typical year with no major pest issues; July was rainy so some growers had issues with bacterial diseases.
* Evaluating IYS incidence and severity in onion germplasm of varying leaf characteristics (HortScience, April 2017 52:527-532; doi:10.21273/HORTSCI11770-17) – some intermediate day germplasm is now available for seed companies to use in breeding programs.
* Evaluation of catnip for thrips control in pollination cages – Eight cages planted with the same variety, 4 with and 4 without catnip, with 3 beds per cage and each cage had a beehive; catnip grew large enough that the plant surrounded the base of the onion leaves and scapes; there were fewer thrips on the onion plants grown with catnip – however, this might have been due to the catnip or any other plant grown in a similar manner? In cages without catnip, there was significant weed pressure so the ground was not bare, confounding evaluation of the catnip.
  + Also rated seed stalks for IYS on scale of 0 to 4; symptom severity was less in cages with onion and catnip vs. cages with onion plants alone.
  + Seed yield – there was no difference in seed yield on a per plant basis but seed was hand harvested so lodged stalks were included in the seed yield measurement (which does not occur when seed crops are harvested mechanically).

**New York - Christy Hoepting (Cornell University)**

* Wet slow start to the season which delayed planting; growers had invested in water management (tiling) which was beneficial this year; no heat stress; good disease year but growers did well with foliar disease management; some growers had record breaking yields; bacterial disease issues were not really a problem because of cooler temperatures.
* Onion seed treatments for onion maggot control – 90% stand loss in hot spot; Sepresto was significantly better than the untreated but still 60% loss; FarMore FI500 was the best treatment but still 30% loss (trying to figure out what factors are associated with the hot spots).
* Onion thrips management program – strategic sequence of products; evaluation of timing and sequencing (0.1 vs 1 thrip per leaf as a threshold); Movento is applied 1st and then a heavy hitter is applied 2nd in the sequence so population does not spike.
* Onion thrips nitrogen interaction trial – evaluation of two varieties with five nitrogen rates and three insecticides.
* Onion bacterial research (Steve Beer) – chlorine registered for NYS growers until 2020.
* Observed in one field that 15 to 20% of the onions were affected with a bacterial canker type system (double barreling type symptoms) – not sure the cause maybe grass herbicide damage?
* Stemphylium leaf blight – evaluating isolates for fungicide sensitivity; epidemiology study (grid sampling); post-harvest onion residue management; organic management strategies
* Observed a “spectacular purple blotch lesion show” this year.
* Foliar disease fungicide trials were conducted for Stemphylium and Botrytis leaf blight; seed and in-furrow treatment trial for smut, damping-off and pink root.
* Bare root transplant dip trial for control of pink root, Fusarium basal rot and bacterial disease.
* Continued the NYS onion research scouting program.

**Oregon/Idaho (Treasure Valley) – nobody from this region was able to attend but Lindsey du Toit and Kerrick Bauman shared information received from growers and extension specialists in this region**

* Lindsey du Toit - Late rains during harvest season delayed harvest. Some crops were still in the ground when temperatures dropped to 25°F, with over 800 acres of the crop freezing – many of these crops were harvested and placed in storage, so there is uncertainty what is going to happen in storage.
* Kerrick Bauman – Western production is primarily of Spanish long-day cultivars; 40% of the national winter onion supply is from the Treasure Valley; 2016 was a bumper crop (warm spring so had extra leaf or two on the onion at harvest, so larger on average) – primarily a jumbo market; 1st part of December snow accumulated in the Treasure Valley (24 to 36 in.) and then the snow turned to rain causing onion storage buildings to start collapsing in January, leading to lots of loss over the winter. In addition, there was a dilemma about what to do with onions in the collapsed storage buildings – a market order was passed to require placing all the onions in landfills for pest management. Treasure Valley production (28,000 A grown for storage) is shifting increasingly from furrow irrigation to drip irrigation (80% of production is now with drip irrigation). Seed corn maggot and bulb mites were an issue as well as foliar insects such as spider mites. Production year 2017 was opposite to that of 2016 – planting was delayed from March to the end of April, beds were compacted since they had been prepared in the fall of 2016 before all the snow and rain, temperatures were hot in July with humidity in the teens, so the crop was very stressed, late, and 20 to 25% off normal yield in yellow and red cultivars, which equated to a 30 to 35% shift in onion supply this year - barely enough to cover the winter market.

**Texas – Subas Malla (Texas A&M University)**

* Subas Malla recently started as an onion breeder in TX. There are two research stations, at Uvalde and Weslaco, in the short-day onion production areas of TX.
* Short-day onion germplasm evaluation – he evaluated 133 TAM onion lines.
* There were some issues with Stemphylium leaf blight and a little with Xanthomonas leaf blight (less significant).
* Subas is trying to learn what traits are of most interest in short-day onions to inform the selection process – selections were made for bulb firmness, single centers, and leaf and root diseases; NDVI was correlated with pink root and Stemphylium leaf blight.
* The TX onion germplasm pipeline has two lines for release: 50092 and 30300.
* Major disease issues include Stemphylium leaf blight, pink root, bacterial diseases (*Xanthomonas* and *Pseudomonas*), IYSV and downy mildew.
* A genotyping lab is being developed as part of his program and will include a BSL1 Lab and greenhouse. Subas is interested and willing to collaborate with others.

**Utah - Claudia Nischwitz (Utah State University)**

* Yield was average in 2017; however, due to the problems reported above for the Treasure Valley, Utah growers got better prices; lots of fields were flooded for two months or more due to the major winter snow and then rain on top of frozen ground, which delayed planting. They had a few disease problems – Stemphylium leaf blight and some IYSV. They are trying to understand the mechanisms behind the relationship between potassium and IYSV. Some bulb mite issues occurred in storage and some problems in the field after planting. In addition, some growers had seed corn maggot issues. Leafminer issues started about 2 years ago.

**Washington - Tim Waters (Washington State University)**

* Onion crop notes: Smoky conditions across most of the WA Columbia Basin growing region in late July to mid-August resulted in “high” humidity. Thrips pressure initially was low due to a cool spring, but increased later in the season. IYSV and downy mildew were more of an issue, as were Fusarium basal rot and yellow nutsedge in some crops. They have seen some major irrigation management issues – center pivot growers experiencing increased bulb bacterial disease issues. This year was the first season of research funding provided by the new Columbia Basin Onion Research Committee.
* Disease notes (bacteria) – Several growers had 30 to 40% bacterial bulb rots in red cultivars at harvest or soon after harvest, which appears to have been correlated to the high humidity in late summer caused by wildfires during late maturity of these crops; 2017 appears to be one of the worst years for bacterial rots in the Columbia Basin for some growers, so now growers are concerned about increased problems in storage. Downy mildew and Stemphylium leaf blight were only an issue in mid-August following the extended periods of wildfire smoke and high humidity, but the outbreaks were late enough to not really impact bulb yields.
* IYSV-thrips monitoring project data is being summarized – preliminary data from 2016 indicated that IYSV infection in seed crops leads to early onset of IYSV in nearby bulb crops; 1,000 A of seed crops are grown amongst 24,000 A of bulb crops, with the worst IYS problems observed in regions of the Columbia Basin with the most dense concentration of both biennial bulb and annual seed crops.
* Hanu Pappu is currently working on understanding the molecular evolutionary genomics and population structure of IYSV.
* Onion thrips – a relatively slow start to the season and then populations increased dramatically by late summer. Tim has beenobtaining less optimal control with Lannate in test plots and growers are also reporting issues. He conducted several insecticide trials – top choices are Radiant, Minecto Pro, and Lannate. Radiant provides good control when applied through center pivot irrigation.
* Onion variety trial focused on thrips this year – noticed thrips damage differences among cultivars, as in part seasons.

**Ontario, Canada – Zach Telfer (University of Guelph)**

* Holland Marsh acreage is down to 1,000 A but profit has continued to increase; 2016 was hot and dry, but in 2017 the Marsh received double the 10-year average rainfall in addition to experiencing cool temperatures. By the end of June, over 3 in. of rain had fallen in 8 hours, which caused lots of flooding and complicated seeding. Planting was delayed by 3 weeks. Harvest usually occurs in early August for transplants but did not start until late August. Seeded onions were left in the field until the end of October, causing growers to be worried about storage quality.
* Thrips pressure was low (recommend 1 thrips/leaf threshold for insecticide applications). Because of the delayed planting, there were less issues with onion maggot. Also there is a region-wide management plan for maggot. The pest and disease field survey showed no Botrytis leaf blight (BLB) or purple blotch observed, but Stemphylium leaf blight was observed. In general, it appears Stemphylium leaf blight might be displacing BLB and purple blotch? It was also a very good year for downy mildew.
* Developed a new in-field sampling method for Stemphylium leaf blight – rank the 3 oldest leaves, with a maximum score of 6 (score 0 = no disease, 1 = ≤50% severity of symptoms, 2 = >50% severity), and then calculate a disease severity index.
* Some hypothesized that the increase in Stemphylium leaf blight prevalence and severity was correlated with use of the herbicide Chateau, but that hypothesis did not hold up in a replicated research trial.
* Evaluated the disease forecasting Botcast for BLB, but BLB not observed due to Stemphylium leaf blight being so severe. The DOWNCAST model did not predict downy mildew outbreaks in 2017 but there was a significant outbreak. DOWNCAST might work best for determining when there will not be a problem rather than predicting a problem.
* The Stemphyium leaf blight pathogen population appeared to have resistance to Luna Tranquility and Quadris Top.
* Future research includes monitoring onion insect populations (IPM); updating and examining DOWNCAST, improving Stemphylium leaf blight control/fungicide timing; evaluating *Stemphylium vesicarium* isolates for fungicide resistance.

**Organizational and Planning Items**

**Onion research & extension needs, proposals (USDA SCRI, others)**

* Pappu et al. are proceeding with a USDA NIFA SCRI proposal – this is their 3rd submission attempt – Objectives include of onion thrips, IYSV and white rot management
* du Toit et al. are preparing a USDA NIFA SCRI proposal with a focus on bacterial diseases. The pre-proposal was submitted the week of this meeting.

**Alliumnet website – Joe LaForest and Bhabesh Dutta (want to launch at beginning of 2018)**

* Southern IPM center has a focused on technology in the southern regions; however, the center will support national efforts when possible.
* Southern IPM center will pick up the support and customization of the Alliumnet website but the site must have a purpose and/or well-articulated objectives.
* Aliumnet.com is the old site; <http://alliumnet.bugwoodcloud.org> is the new site – provides a list research and extension specialists working on pests and diseases; focuses on collaboration among research, extension and industry; this is not currently a venue for growers to find management information.
* Project information will be pulled directly from the NIMSS site for the W-3008.
* What’s changing as a result of support from Southern IPM Center:
  + Site is not a content management network – multiple people can add content using a web browser
  + Site navigation – focus on Projects, meetings, resources
  + Mobile tablet and desktop responsive
  + Google analytics added
  + Again it will have information obtained from the NIMISS and PMSP/CP websites
* Questions
  + Who is the current audience? Are the message and purpose acceptable? Changes needed?
  + Who needs/wants access to edit?
  + Call for content
    - 2012/2010 NARC Proceedings are missing
    - 2018 NARC information
    - Old WERA 1008/W-2008 information could be added, including minutes of the annual meetings
    - Suggestions? Please contact Bhabesh and Joe with ideas/recommendations.

**Election of new officers, future annual meeting locations, dates, etc.**

* Nomination for Secretary – Bhabesh Dutta was nominated last year and agreed to be Secretary elect. He confirmed his willingness to serve as the next secretary so the membership voted and he was approved as the 2018 Secretary.
* W-3008 meeting in 2018
  + We could combine this meeting with one of the NOA meetings in 2018: July 18 to 21 in Bakerfield, CA or Nov 28-Dec 2 in Hawaii? The group decided against the latter option due to cost, and the former option because it’s too soon after this meeting.
  + The 2018 W-3008 meeting will be held in conjunction with the Pacific Northwest Vegetable Association Annual Convention & Trade Show the week before Thanksgiving (Nov. 14-15) in Pasco or Kennewick, WA – our W-3008 meeting will be on Tues., Nov. 13th, before the PNVA conference. Some of the meeting participants can then be invited to speak in the onion and other vegetable sessions at the PNVA meeting, similar to many attendees of this year’s W-3008 meeting speaking at the Great Lakes Expo.
  + The 2019 meeting will be held in conjunction with the International Allium meeting in Madison, WI in July.

**2018 officers:**

**Chair:** Christy Hoepting, Cornell University (responsible for chairing the 2018 W-3008 Annual Meeting)

**Vice-Chair:** Beth Gugino, Pennsylvania State University (responsible for writing/submitting the 2018 annual project report)

**Secretary:** Bhabesh Dutta, University of Georgia (responsible for writing/submitting the 2018 annual meeting minutes)

**Past-Chair:** Lindsey du Toit, Washington State University

**Other onion project reports**

**Ashley Leach & Brian Nault – Insect management research update in New York**

* Increasing use of action threshold in managing onion thrips on New York farms
  + Onion thrips go through 3 to 4 generations per season
  + Improved use of action thresholds through scouting program
  + They categorized the degree of adoption – completely followed, mostly followed, and did not follow – to survey the success of this program and the recommendations

**Christy Hoepting – NY onion disease research update**

* Stemphylium leaf blight (SLB) was associated with more severe bacterial rot in onions that died prematurely
  + Luna Tranquility and Merivon were most consistent for SLB management
  + Confirmed resistance to of *S. vesicarium* isolates to fungicides in FRAC Group 11

**Bhabesh Dutta – Research updates on *Pantoea* spp. in Georgia**

* From 1997 to 2015, collected *Pantoea* strains isolated from seeds, weeds, thrips, etc. in Vidalia County. In total, 50 strains were collected - 23 from onion plants, 5 from seed, 16 from weeds, 6 from thrips.
* 33 were determined to be pathogenic on onion and 31 strains were ice nucleation positive; all were sensitive to copper
* Multi-locus sequence analyses (MLSA) of 6 housekeeping genes – Identified 3 onion clades, 8 clades of diverse sources and 15 unresolved strains – there was not much diversity or patterns or correlation among isolates, source of isolation and phenotypic characteristics
* REP-PCR assay was used to determine DNA fingerprint diversity – 4 clades were identified with no trends between phylogeny and pathogenic phenotypes
* Pathogenicity of the bacterial strains on onion, leek, shallot, and chive – 33 strains tested by measuring lesion length 5 days post inoculation from the point of inoculation
  + Very few strains were pathogenic on chive
  + A lot of diversity among strains was detected with this assay but not with the molecular assays
* Whole genome sequencing of 10 strains
  + Bulb scale pathogenicity test on red scale onion – the scale develops a “clearing of red skin” demonstrating the degradation of the scale cells
  + They were able to differentiate pathogenic and nonpathogenic strains using whole genome sequences
  + An onion virulence region was identified in *P. ananatis* – so now they are developing primers for this region to differentiate pathogen and non-pathogenic isolates
* *Pantoea stewartii* subsp. *indologenes*
  + A new set of bacterial strains was characterized that differed from known pathogens. The 16S rDNA sequence analysis of all the type strains were used to compare and differentiate these new onion strains; MLSA was conducted with 4 housekeeping genes
  + Biochemically, they could not differentiate strains of *P. ananatis* and *P. stewartii*
  + Pathogenicity tests on pearl millet – onion strains caused disease on pearl millet
  + Hypothesized they are dealing with a subspecies of *P. stewartii* subsp. *indologenes*
  + This is the 4th pathogen in the *Pantoea* genus that is pathogenic to onion.

**Chris Cramer – Onion breeding update from New Mexico**

* Fusarium basil rot resistance – new inoculation technique focused on inoculating mature basil plates excised from bulbs
* Evaluating the use of saponin levels as a potential measure of resistance for screening germplasm

**Steven Beer – Onion bacterial disease research reports**

* Sur-Chlor registered for use on onions in NY to reduce bacterial bulb decay, under a Section 24(c) - 12.5% solution approved for use in NY only.

**Kevin van der Kooi and Zach Telfer – Onion downy mildew research in Ontario, Canada**

* Downcast and spore trapping – spore trapping early in the morning for 2 hours
* Product efficacy trial – Orondis Ultra, Dithane and Zampro were most effective, as good as the standard fungicide program

**Beth Brisco – Stemphylium leaf blight field trials in Michigan**

* Foliar diseases typically include purple blotch and anthracnose but they now seeing Stemphylium leaf blight and bacterial leaf blight.
* Stemphylium leaf blight fungicide trial – 10 applications made on 7-day intervals – Luna Tranquility at both rates was the best of the products evaluated, along with Fontelis.

Lindsey du Toit adjourned the meeting at 5:00 pm.

Minutes were respectfully submitted by Beth Gugino, with edits by Lindsey du Toit and Bhabesh Dutta, on December 27, 2017