

**Great Plains Plant Diagnostic Network
Regional Meeting Minutes
January 31, 2007
8:00 AM – 2:00 PM**

Introduction- Jim Stack, Director

- Welcome- Everyone go around and introduce yourselves
- Two reviewers from 5-yr review panel present: Doug Luster and Jackie Fletcher

Diagnostic Reports- Ned Tisserat, Assistant Director

- 2006 Workshops-Mycotoxin workshop in November from MSU in Bozeman, MT; participation from every state; used Microsoft breeze which allowed people to view the workshop from their home labs; also allowed program to be viewed again at a later time, or repeatedly.
- 2007 workshops
 - Genomics workshop, March, sponsored by TIGR, in Beltsville, MD
 - Greenhouse workshop, April, Denver, CO

DIAGNOSTIC HIGHLIGHTS OF THE REGION:

North Dakota-Kazia Kinzer, Plant Pathology Diagnostician

- Emerald Ash Borer in firewood- Nebraska and North Dakota are communicating about this insect along with industry. Movement of firewood appears to be the main vehicle of introduction. Developing a proactive stance.
 - One suggestion from Nina Zidack was educating people purchasing out-of-state hunting licenses. Have magnets which state: 'Don't move firewood, it bugs me!'
 - Ned Tisserat stated that as a region, GPDN should be more engaged. Contact states to find out status.
 - Jim Stack suggested working with the State Dept of Ag.
 - Jim Kalisch, entomologist from Nebraska, said there is a committee, and lots of education has already been done, but there is lots of inertia about the issue and what to do. Diagnostics has the capability to handle samples.
 - Oklahoma has a small CAPS project on it.
- New host for *Stigmata lautii*- identified on North Dakota spruce trees in June 2006. Pathogenicity has not been proven
- Soybean pests and diseases-

- spider mite injury- first time seen in North Dakota for many years
- soybean cyst nematode in only 2 counties
- charcoal rot on the rise- favored by hot, dry soil conditions
- no soybean viruses detected in informal survey conducted by KSU
- Routine damage showing up in July, resembling dicamba injury- tank contamination possible. Shows on both round-up ready and conventional soybeans. Could be environmental stress?
- Several rust diseases
 - Ash rust, leaf rust on turf, rose rust, rust buckthorn, cedar apple rust
- WSMV still a problem on both winter wheat and spring wheat
- Black rot on grape
- Stachybotrys mold detected in some samples
- Potato tuber rots and black dot on potato
- Check ND website at www.ag.ndsu.nodak.edu/diaglab for more info

Kansas- Judy O'Mara, Plant Pathology Diagnostician

- Doug Jardine- Plant Pathology Extension Specialist
 - Nematodes seem to be increasing on corn, cropping sequencing sited as a problem
 - Dry summer conditions favored dry weather crop diseases , including charcoal rot on soybean, stalk rots on corn and sorghum
 - Bean pod mottle virus showed up on row crops
 - Scouted but did not find Asian soybean rust in Kansas, but found it in 4 northwest counties in Arkansas. Kansas will participate in the national sentinel plot monitoring program for soybean rust in 2007
 - Participated in soybean virus survey- tested for alfalfa mosaic , bean pod mottle, soybean mosaic and tobacco ring spot virus.
 - Kansas is the expert on charcoal rot
 - Megan Kennelly (new ornamental pathologist) saw many samples of Hosta virus X in garden centers, box stores, greenhouses and nurseries. State regulatory action was taken with positive finds.
 - No Goss's Wilt coming into the lab, but there is a lack of samples coming into the lab. Pioneer has a lab and is receiving samples. Our lab is being bypassed. Same as for Colorado. Jennifer Chaky NE diagnostician stated that Bob Harveson in Nebraska is receiving samples from the panhandle area.
 - Sharing of information is a problem- we need to partner and communicate better.

- Joy Pierzynski- Plant Pathology Diagnostician
 - BYDV and WSMV are overwhelming diseases in wheat in 2006
 - Hessian fly is making a comeback in south central Kansas due to increase in no-till continuous wheat and lack of resistant varieties. Lodging in the spring can be very severe.
- Jim Stack
 - Triticum Mozaic Virus is new virus discovered by Dallas Siefers in Kansas this year. Looks similar to wheat streak and is vectored by wheat curl mite. Highly virulent on new wheat strains.
- Judy O'Mara
 - 2005-06 one of driest winters on record, reflecting in lower incidence in disease overall
 - Dothistroma blight on pine serious problem
 - Dutch elm disease bad this year in eastern half of the state
 - Pine wilt, cedar apple rust
 - Hosta virus X in greenhouses
- P. Sloderbeck, B. Bauernfeind, Elizabeth Murray- Insect Diagnosticians
 - Bag worms- can have severe outbreaks in wind breaks in western Kansas
 - Scales insects are recurring problem across state
 - White grubs remain as major turf pest; problematic are the masked chafer beetles. Effects are early fall when larvae are large.
 - Alfalfa weevil most significant pest in spring 2006 possibly due to unusually mild winter
- Horticulture Response Center- Ward Upham, Horticulture Diagnostician
 - Center deals with home horticulture to commercial hort questions
 - Woody plants is largest area of focus of questions
 - Turf and vegetables are second most questions
 - Flowering plants, fruit and insects are the least common
- KSU Herbarium- Mark Mayfield, Weed Scientist and Herbarium Director
 - Homeowners wanting weed or plant identification is most common activity followed by producers wanting ids on weeds in pasture or field
 - In most cases, nuisance plant is an introduced/non-native plant and some are of genuine concern
 - Herbarium identified 200 species of non-native plants causing trouble for citizens
 - As introductions increase and awareness of these non-native species increases, the herbarium will see an increase in sample numbers

- Black swallow-wort: confirmed presence in north central Kansas (www.oznet.ksu.edu/Geary/black_swallowwort.htm). Has been around for 50 years in Montgomery County, with new reports in southern Geary County. Appears to be spreading. It is considered serious pest in northeastern US. Existing eradication efforts have not been promising as the weed does not respond to current herbicide treatments.
- 2006 GPDN Regional Center Activities
 - GPDN Diagnostician Joy Pierzynski trained at USDA facility in Ft. Detrick, MD for arrival of *Phakopsora pachyrhizi* into the state
 - Pre-screened large number of soybean leaves over the summer- no soybean rust detected
 - Pre-screening for *Phytophthora* species revealed 2 positive samples which were sent to Beltsville for confirmation- tested negative for *P. ramorum*.
 - Also pre-screened samples sent from North Dakota Dept of Agriculture on horticulture plant material- tested negative for *Phytophthora* species
 - Currently preparing to take part in *Phytophthora ramorum* proficiency test panel as part of the *P. ramorum* Provisional Approval Program, administered by CPHST. Once provisional approval occurs, turn around time for follow-up and confirmation on prescreen ELISA positives should improve for GPDN member states
 - Participating in training for molecular diagnostics of *Candidatus Liberibacter asiaticus*, or Citrus Greening, in anticipation of possible sample flow surge from southern states in the future
- PDIS
 - April 2004- held first county level trainings using laptop for hands-on instruction
 - 2005- Held 5 campus-based training opportunities to agents and office professionals. Focused on PDIS system and digital image manipulation
 - 2006- Focused on training more office professionals in the counties. Went onsite to teach one-on-one as needed

Oklahoma- Rick Grantham and Brian Olson

- Rick Grantham- Insect Diagnostician
 - High priority pest - Africanized honey bees (*Apis mellifera scutellata*) is surviving in 30 counties. Brian Olson developed new primer for AHB which allows testing to be completed in 6 hours. Perform all tests for New Mexico and one sample for Kansas
 - European hornet- *Vespa crabro*, new invasive species record for OK. It is primarily an eastern pest that has been moving westward.

- Asian ambrosia beetle- *Xylosandrus crassiusculus*, found regularly in traps associated with the National Exotic Beetle Survey run by OK Dept of Ag. Serious nursery pest in OK. Over 25,000 redbud trees were destroyed in 05 to prevent its spread.
- Sycamore caterpillar- *misogada unicolor*, sycamore only known host, spread throughout state
- Western drywood termites- *Incisitermes minor*, cases connected with furniture shipped from out of state
- White footed ants- *Technomyrmex albipes*, new invasive species for OK. Probably came from Florida on a shipment of orchids several years ago but never reported.
- Brian Olson- Plant Pathology Diagnostician
 - Pratylenchus- lesion nematode problems in western OK wheat fields
 - Viruses- wheat streak mosaic and high plains virus on the rise in last 2-3 years. Also few recent samples testing positive for BYDV
 - Fusarium dryland rot- several samples from northern Oklahoma no-till fields
 - Leaf and stripe rust- found late in the season, due to dry conditions
 - No soybean rust identified in 15 sentinel plots
 - Rose rosette- working on diagnosis protocol for rose rosette disease
 - Xylella- bacterial leaf scorch has increased host list to include elm, oak, mulberry, giant ragweed, porcelain berry, and sycamore. Unsure of significance of this disease, although it is found frequently, especially in urban landscapes

South Dakota- Brad Ruden, Plant Pathology Diagnostician

- Previous diagnostician Kim Maxson-Stein left the diagnostic lab in November 2007. Brad Ruden has assumed managerial duties, working with Shannon Thompson, Senior Ag Technician, in the clinic. Several faculty and student workers also help out
- Three labs within the PDIS system- Plant Diagnostic lab, Forestry diagnostic lab and soybean sentinel plot lab.
- Severe drought throughout the growing season, especially in central corridor of counties, is likely reason for low sample numbers coming into lab. D4 drought-winter wheat abandoned.
- Corn ear mold high- rains came late, sent samples out for toxicology test (fumonisin)
- Planted wheat in September into dry soil. Did not germinate until October (bunt is likely as the fungicide on the seed is gone by the time of germination)

- Two presumptive positive select agents were handled in the laboratory-the first for *Phytophthora ramorum* and the second for *Ralstonia solanacearum*. Both were found negative
- Soybean rust spores were found on traps
- 67 soybean sentinel plots sampled for virus survey as part of local research project in collaboration with NE and KS
- Non-extension commercial individuals are the most frequent sample submitters, with non-extension non-commercial individuals being the second most common.
- Statewide common bunt screening services for externally seed-borne cereal smuts. Saw some flag smut as well as smooth-spored and rough-spored common bunt. Positive bunt samples were widely distributed across the state

Montana- Nina Zidack and Will Lanier

- Will Lanier-Entomology diagnostician
 - Cottony ash psyllid- new arrival. Kazia Kinzer, North Dakota diagnostician, warned Montana about its movement west.
 - Hanchen mealybug- in Idaho with movement toward Montana, biotype shift observed. Not widespread but positively id'ed.
 - Ag Alert System on the PDIS website- Would like to encourage greater participation and expansion for the Ag Alert system. . Anyone with PDIS access can subscribe to receive notification of new alerts. You can also write a new one. Will Lanier uses them to teach his first detectors about the PDIS system. To encourage greater participation, Will make a video to teach about how to use the system. He would like other diagnosticians to check out the system and receive feedback on how to use the Ag Alert program. Must subscribe in order to receive them.
- Nina Zidack- Plant Pathology Diagnostician
 - Record number of chick pea, lentil and field pea specimens for *Ascochyta* testing
 - Surveyed for Sudden Oak Death using ELISA, alfalfa phytosanitary inspection, rhizomania and curly top virus diseases on sugarbeet using PCR diagnostics.
 - Wet growing conditions in June reflected in large sample numbers being submitted into the lab
 - Stripe rust epidemic generated tremendous amount of grower interest in disease management options
 - Foliar leaf diseases included tan spot and Septoria leaf spot
 - Wheat streak mosaic virus was increased over last year
 - Small resurgence of *Cephalosporium* stripe, a disease of winter wheat which is favored by continuous cropping practices

- Nitrogen deficiency (due to rising fertilizer costs ?) and powdery mildew were common
- BYSMV on the increase predominantly in western part of golden triangle of state east of Glaciard Park.
- Drought stress seen in July and August in all dry land crops
- Incidence of root rot pathogens was similar to previous years
- Barry Jacobsen conducted survey for Western Sugar Cooperative and found numerous samples with rhizomania (BNYVV) and beet curly top virus- these also showed up in samples submitted by agronomists for the sugar factories
- Leaf spots on many ornamentals
- Drought stress on many trees and shrubs
- Notable was Dutch elm disease in Livingston, a community with large population of mature elm trees, and no prior history of this devastating disease. Dutch elm disease was also diagnosed in multiple samples from Ronan, an area which has had the disease in the past
- Kimberly Morenz- CAPS program leader at Montana

Texas- Charlie Rush, Extension Specialist

- Texas is split into two different regions due to climate and crop differences
- Texas Tech trains students in diagnostics- have many success stories
 - Jeff and Kim Stein, now at SDSU
 - Karl Steddom, now faculty member at Texas Coop Extension
 - Tom Allen, currently taking a new job
 - Ron French, starting as extension faculty in March, 2007
- Most of Texas counties were deregulated for Karnal Bunt due to lack of disease for >5 yrs.
- Wheat streak was epidemic in 2006
- BNYVV in sugar beet – new resistant strain emerged
- New technique called allelic discrimination realtime PCR was used to differentiate wild type isolates of BNYVV from resistance breaking strains in CA.
- Remote sensing technique used to quantify losses to wheat streak mosaic and rhizomania
- New faculty position for Extension Specialist in Plant Pathology- hired Dr. Ron French-Monar funded by GPDN money in Amarillo, Tx.
- Soybean sentinel plots- negative in Panhandle and NE corner of the state, but found in E and SE Texas
- Leaf spot and charcoal rot in Northern Panhandle

Nebraska- Jennifer Chaky, Plant Pathology Diagnostician

- Jennifer Chaky discussed the following plant pathogenic diseases
 - Southern rust of corn was severe in south central and east central Nebraska, overlapping nicely with higher than normal rainfall in August
 - Goss's bacterial wilt and blight- increased incidence in Western Nebraska. First observed in Dawson County in 1969, identified in adjacent states including Kansas, Colorado, Wyoming, South Dakota and Iowa over next 10 years. Also confirmed in Illinois and Wisconsin. Until recently, the disease had not been observed in Nebraska
 - Bacterial Wilt of dry beans- reappearance over last 3 years, do not know why
- Statewide survey of corn nematode and soybean cyst nematode
- Kristina Goings is new diagnostician helping Jennifer with nematode diseases
- Jim Kalisch, entomology diagnostician, provided pictures of the following insect pests coming through the diagnostic lab,
 - possible grape scale
 - red carpenter ants
 - fly maggots
 - Asiatic garden beetle larvae
 - predaceous mites
 - Anobiid powderpost beetle damage to wood joists
 - blacklegged tick
 - red imported fire ant
 - Dermestid beetles
 - Melandryid larvae
 - European fruit lecanium
 - striped mealybug
 - potato aphids
 - sap beetle larvae
 - human bed bug

Wyoming- Gary Franc, Plant Pathology Specialist

- Drought was a big factor this year. Dryland crops are dependent on rainfall, did not fair well.
- Scott Schell- insect diagnostician
- Alex Lachinsky- grasshopper expert
- Hilary- CAPS survey entomologist. Offered insect short course, introduced first detector training to them.
- FD training to Master gardeners

- Disease surveys- identify in early stages, can be more proactive and help farmers better.
- Certified seed inspectors, targeted training for them
- CO/MT come to participate in dry beans program.
- Goss's wilt
- Bacterial wilt in dry beans
- Sentinel plots in potatoes, soybean
- Curly top virus disease in sugar beets
- Ascochyta on the lawn
- SOD funding for national survey

Colorado- Tamla Blunt, Plant Pathology Diagnostician

- New and emerging pests
 - Summer Patch of Kentucky Bluegrass (*Magnaporthe poae*) -- Denver metro and Grand Junction – first report in CO
 - Pine wilt (*Bursaphelenchus xylophilus*) on Scots pine – Denver Metro area – first report in Colorado - 2006
 - Snow blight (*Pythium paddicum*) – Steamboat springs – first report in United States - 2005
 - Conifer root rot in state forest nursery (*Pythium undulatum*) on blue spruce and Austrian pine- first report in CO 2006, two new hosts
 - Patch on annual bluegrass (*Rhizoctonia zeae*) – increasing in importance?
 - Walnut decline – combination of walnut twig beetle (*Pityophthorus juglandis*) and Fusarium canker (*Fusarium solani*) this association not previously reported
 - European poplar scale *Quadraspidiotus gigas* ---first report in CO and ID – 2006
 - New races of Russian wheat aphid *Diuraphis noxia* found in Colorado – Varieties with resistance genes no longer effective.
 - Lilac root weevil *Otiorynchus meridionalis* – first report in CO -2005
 - European paper wasp – increasing in importance as nuisance and as major insect problem on stone fruits
 - European earwig – increasing in importance as nuisance pest
 - Banded elm bark beetle (*Scolytus schevyrewi*) shown to carry *O. ulmi*
- Diagnostic programs
 - Development of advanced Master Gardener training in diagnostics. Developing a tiered system for developing MG diagnosticians. These MG are then providing diagnostics in counties
- Diagnostic tools
 - Comprehensive Genomic Resource Center
 - Database and resource for development of molecular based markers for disease detection – see poster
 - Electronic, multi-access key for diagnosing pests of small grains – see poster and electronic prototype

- Surveys
 - CAPS survey 2006 for *R. solanacearum* and other production facility pests
 - Soybean rust survey – Howard Schwartz coordinated surveys in the Western United States for soybean rust on dry beans
 - CAPS survey 2007 (in cooperation with KSU) for nematodes of cereal crops
 - PCN nematode survey

Exercise Report- Marietta Ryba-White, GPDN Exercise Coordinator

- Our last exercises were run in 2004 & 05. We are due to exercise all states again this year.
- Discussed carrying out an exercise to include entomology diagnosticians
- Also mentioned carrying out an exercise with a spontaneous start, within a week time period. The purpose would be to simulate real life.
- Nebraska is interested in getting started right away. They participated in the first ever exercises in the nation!
- All previous exercises were using SBR. Can choose another pathogen/pest this time.
- Partner with APHIS PPQ ICS Exercises for better understanding of what goes on after presence of a select agent is confirmed
- Lessons learned
 - Need a backup in all positions
 - Need cell phone numbers
 - Have correct permits on hand
 - Include tracking number, Form 391 and business card with plant sample when sending to expert lab
 - Regional Center Lab developing certification to handle diagnostics of certain select agents, thus freeing up the National labs

IT Report- Will Baldwin, IT Specialist

- Will handed out charts for each state depicting number of samples uploaded from each state lab in 2004, 05 and 06.
- Generating report on PDIS
- Need to make number of sample submissions by sample category mandatory
- Remember to make a change request in the system. That is the best way to get changes made.
- Poll region for input using GPDN listserv and get responses to Jayasri Krishnasamy at jayasri@ksu.edu.
- Number of sample submissions and diagnosis ID- be able to manipulate data. These applications will be coming in 2007

Regional Education and Training- Nina Zidack, Chair

- The GPDN Training and Education Committee was formed in September 2005 to address issues that came up at GPDN Regional meeting in Bozeman, MT.
- Members include Will Lanier (Montana), Gary Franc (Wyoming), Tom Allen (Texas), Phil Sloderbeck, Doug Jardine and Marietta Ryba-White (Kansas)
- Jim Stack developed a list of tasks for the committee to address
 - Identify critical training needs for GPDN states with respect to preparedness for first detectors.
 - Identify the proficiency levels for first detectors and the associated levels of training required to achieve those levels of proficiency.
 - Develop definitions for first detector, certified first detector, registered first detector.
 - Develop criteria by which to categorize and prioritize high consequence pests and pathogens
 - Develop a priority list of high consequence pests and pathogens for the region and for each state.
 - Interface with the national T&E Committee
- Accomplishments
 - Development of High Consequence Pest Lists for Plant Pathogens and Insects for the GPDN
 - Prioritization of development of SOP's for pests on the GPDN lists
 - Interface with national T&E committee
 - Wills activity in development of remote training for first detectors
 - Mycotoxin Workshop
- To do
 - Continue work on SOP's
 - Potato Wart (Zidack), NPDN has version 1.0, Jardine working on APHIS document
 - Hessian Fly (Lanier)
 - Curvularia Leaf Spot (Jardine)
 - Additional SOP's
 - Re-visit high consequence pest lists
 - New educational programs utilizing web-conferencing

Summary- Jim Stack

- All funds must be expended by May 31, 2007 or they will be returned to the USDA.
- Go ahead for plans of work for the next year. Turn around time is quick.

- Started evaluating our program differently 2 years ago. Turn over in CSREES of employees- was not a simple process. Now NPDN budgets go to 3 people. Will make it simpler and quicker.
- SBR sentinel plots- 2007 is already OK. SBR money is sitting at KSU. Were told to hang onto the money for the fall, but now we will be releasing the funds.
- Department of Ag- own select pest list that they survey for through the CAPS program. Provide funds to diagnostic labs.
- Cross diagnosis is now encouraged between GPDN and CAPS
- Next meeting location: Looking for another state to host the GPDN annual meeting in 2008. Oklahoma State University may be a possibility.