



50th Tobacco Workers' Conference
Preliminary Program
(rev. Jan 10, 22)

Monday, January 24, 2022

Committee Meetings

8:00 am – 9:00 am	GAP Certification
10:00 am – 11:00 am	Flue Cured Minimum Standard Committee
11:00 am - 12:00 pm	Pesticide Committee
1:00 pm – 2:00 pm	Production Guide Committee
2:00 pm – 4:00 pm	Burley Variety Evaluation Committee
6:00 pm – 8:00 pm	Welcome Reception

General Session – Grand Ballroom

Presiding: Matthew Vann, North Carolina State University

8:00 am	Welcome and Opening Remarks: M. Vann, Program Chair, 50th Tobacco Workers' Conference
8:10 am	1. Tobacco in Society <i>Presented by ITG Brands</i>
8:25 am	2. GAP Update. J. Chadwell; GAP Connections, Knoxville, TN, USA
8:40 am	3. Flue-Cured Situation and Outlook. B. Brown; North Carolina State University, Raleigh, NC, USA
9:00 am	4. Burley/Dark Situation and Outlook. W. Snell; University of Kentucky, Lexington, KY, USA
9:20 am	5. Trends in the Global & US Tobacco Market. D. Jayson; TMA, Raleigh, NC, USA
9:40 am	6. No Smoke, No Fire?: Japanese Demand for Tobacco Products and Heat-Not-Burn Devices. F. Ramsey; Virginia Tech, Blacksburg, VA, USA
10:00 am	Panel Discussion: Q&A
10:10 am	Break
10:30 am	7. Fertilizer Outlook.
10:50 am	8. Chemical Input Outlook. L. Shockey, Drexel Chemical, Memphis, TN, USA
11:10 am	9. Labor Outlook. L. Wicker; NC Growers Association, Vass, NC, USA
11:30 am	Panel Discussion: Q&A
11:45 am	10. Tobacco Science Council Update. B. Pearce; University of Kentucky, Lexington, KY, USA
12:00 pm	Adjourn – Lunch – Capital Ballroom



Combined Technical Session – Grand Ballroom F Tobacco Production I <i>Presiding: Mitchell Richmond</i>															
1:20	11. Impact of the Timing of Greenhouse Fertilization on Seedling Stand and Useable Transplant Number. <u>T. D. Reed</u> ¹ , R. Irby ¹ , and T. Clarke ² ; ¹ Virginia Tech, Southern Piedmont Center, Blackstone, VA, USA, ² Virginia Tech, Mecklenburg County Extension, Boydton, VA USA														
1:40	12. Impact of potassium source on growth, yield, and cured leaf chemistry on burley and dark tobacco. <u>B. Pearce</u> and A. Bailey; University of Kentucky, Lexington, KY, USA														
2:00	13. Evaluation of an alternative low chloride source of potassium for burley tobacco production. <u>B. Pearce</u> ; University of Kentucky, Lexington, KY, USA														
2:20	14. Recent Investigations of Chloride Application to Flue-Cured Tobacco. <u>M. Vann</u> , M. Short, D. Scott Whitley, J. Machacek, and J. Cheek; N.C. State University, Raleigh, NC, USA														
2:40	Break														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;"> Session A – Grand Ballroom F Disease Council - Angular Leaf Spot <i>Presiding: Zach Hansen</i> </th> <th style="width: 50%; text-align: center;"> Session B – Grand Ballroom E Tobacco Research and Development <i>Presiding: Eric Walker</i> </th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">3:00</td> <td> 15. Field monitoring and management practices associated with angular leaf spot of dark tobacco. <u>A. Keeney</u>, A. Bailey and C. Rodgers; University of Kentucky, Research & Education Center, Princeton, KY USA </td> </tr> <tr> <td style="text-align: center;">3:20</td> <td> 16. Dark tobacco variety evaluations for susceptibility to angular leaf spot. <u>Z. Hansen</u>¹, A. Keeney², and W. A. Bailey²; ¹University of Tennessee, Knoxville, TN, USA and ²University of Kentucky, Princeton, KY, USA </td> </tr> <tr> <td style="text-align: center;">3:40</td> <td> 17. Comparison of Chemical Management Strategies for Angular Leaf Spot in Dark Tobacco. <u>A Keeney</u>, A. Bailey, and C. Rodgers; University of </td> </tr> <tr> <td></td> <td> 19. Use of Sentek Soil Probes in Tobacco Research. <u>D. Reed</u>. Virginia Tech; Virginia Tech, Southern Piedmont Center, Blackstone, VA, USA </td> </tr> <tr> <td></td> <td> 20. Overview of 40 Years of Tobacco Breeding. R. Miller, <u>N. Martinez-Ochoa</u>, R. Hensley, and X. Wu; University of Kentucky/University of Tennessee, Parrottsville, TN, USA </td> </tr> <tr> <td></td> <td> 21. The Flue-Cured Minimum Standards Program: An update from 2014 to 2021. <u>J. Machacek</u>, M. Vann, </td> </tr> </tbody> </table>	Session A – Grand Ballroom F Disease Council - Angular Leaf Spot <i>Presiding: Zach Hansen</i>	Session B – Grand Ballroom E Tobacco Research and Development <i>Presiding: Eric Walker</i>	3:00	15. Field monitoring and management practices associated with angular leaf spot of dark tobacco. <u>A. Keeney</u> , A. Bailey and C. Rodgers; University of Kentucky, Research & Education Center, Princeton, KY USA	3:20	16. Dark tobacco variety evaluations for susceptibility to angular leaf spot. <u>Z. Hansen</u> ¹ , A. Keeney ² , and W. A. Bailey ² ; ¹ University of Tennessee, Knoxville, TN, USA and ² University of Kentucky, Princeton, KY, USA	3:40	17. Comparison of Chemical Management Strategies for Angular Leaf Spot in Dark Tobacco. <u>A Keeney</u> , A. Bailey, and C. Rodgers; University of		19. Use of Sentek Soil Probes in Tobacco Research. <u>D. Reed</u> . Virginia Tech; Virginia Tech, Southern Piedmont Center, Blackstone, VA, USA		20. Overview of 40 Years of Tobacco Breeding. R. Miller, <u>N. Martinez-Ochoa</u> , R. Hensley, and X. Wu; University of Kentucky/University of Tennessee, Parrottsville, TN, USA		21. The Flue-Cured Minimum Standards Program: An update from 2014 to 2021. <u>J. Machacek</u> , M. Vann,
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	Kentucky, Research & Education Center, Princeton, KY, USA	L. Fisher, and J. Cheek. N.C. State University, Raleigh, NC, USA
4:00	18. Evaluation of biological control bacteria for reduction of angular leaf spot in dark tobacco. <u>N. Martinez-Ochoa</u> , C. Shields, M. Araujo Alves, A. Joubert, and R. Miller; University of Kentucky, Lexington, KY, USA	22. Promoting early flowering in flue-cured tobacco using etridiazole and high intensity light: Results from two types of float trays. G. Amankwa ¹ , E. Ellenberger ¹ , A. Thiessen ¹ , A. Shearer ¹ , M. Al-Amery ¹ and <u>M. Richmond</u> ² ; ¹ Canadian Tobacco Research Foundation, ON, Canada and ² University of Tennessee, Knoxville, TN, USA
4:20	Break	
	Combined Technical Session – Grand Ballroom F Cigar Wrapper Production <i>Presiding: David Reed</i>	
4:40	23. Developing Nitrogen and Potassium Fertilizer Recommendations for Cigar Wrapper Tobacco in North Carolina. <u>M. Short</u> , M. Vann, J. Cheek, J. Machacek, and D. S. Whitley; North Carolina State University, Raleigh, NC, USA	
5:00	24. Development of production recommendations for Connecticut broadleaf cigar wrapper tobacco in Kentucky and Tennessee. <u>A. Bailey</u> , C. Perkins, C. Rodgers, A. Keeney, and V. Witcher; University of Kentucky Research & Education Center, Princeton, KY, USA	
5:20	25. Effect of fungicide programs and lower leaf removal on wrapper leaf production in Connecticut Broadleaf cigar wrapper tobacco. <u>C. Perkins</u> ¹ , A. Bailey ¹ , C. Rodgers ¹ , A. Keeney ¹ , V. Witcher ¹ , M. Richmond ² and R. Ellis ² ; ¹ University of Kentucky, Research & Education Center, Princeton, KY, USA and ² University of Tennessee, Highland Rim Research & Education Center, Springfield, TN, USA	

5:40 Adjourn



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Wednesday, January 26, 2022

	Session A – Grand Ballroom F TSNA & Low Alkaloid Tobacco <i>Presiding: Mitchell Richmond</i>	Session B – Grand Ballroom E Disease Council - Fungicide and Insecticide Efficacy <i>Presiding: Zach Hansen</i>
8:00	26. Characterizing the Effects of Targeted Gene Knockout of Alkaloid Biosynthetic Genes on Nicotine Content and Plant Growth and Development. <u>R. Dewey</u> , W. Smith, W. T. Steede; North Carolina State University, Raleigh, NC, USA	31. Alternative fungicide programs to control <i>Cercospora nicotianae</i> with reduced sensitivity to azoxystrobin. <u>W Barlow</u> ; University of Kentucky Department of Plant Pathology, Lexington, KY, USA
8:20	27. Stacking a novel low alkaloid gene with the LA <i>nic1nic2</i> may lower alkaloids further. <u>A. Fisher</u> , B. Patra, X. Wu, S. Singh, C. Fisher, J. Kinney and H. Ji; University of Kentucky, Lexington, KY, USA	32. Excalia & Quash: Potential New Tobacco Leaf Spot Fungicides? <u>C. Johnson</u> ¹ and T. D. Reed ² ; ¹ Virginia Tech, So. Piedmont AREC (retired), North Chesterfield, VA, USA and ² Virginia Tech, Blackstone, VA, USA
8:40	28. Use of Genetic Engineering and Gene Editing to Produce Ultra-Low Nicotine Tobacco Genotypes. <u>R. Lewis</u> , S. Webb, S. Kernodle, and N. Burner; N.C. State University, Raleigh, NC, USA	33. Evaluation of Fungicides for Control of Pole Rot (<i>Rhizopus arrhizus</i>) on Flue-Cured Tobacco. <u>C. Saude</u> ¹ , A.D. Shearer ¹ , E. Ellenberger ¹ , M. Al-Amery ¹ , and M.D. Richmond ² ; ¹ Canadian Tobacco Research Foundation, Tillsonburg, ON, Canada and ² University of Tennessee, Knoxville, TN, USA
9:00	29. The effect of nicotine synthesis on the cured leaf quality of low alkaloid burley tobacco. <u>C. Fisher</u> , B. Patra, S. Singh, X. Wu, J. Kinney, H. Ji and A. Fisher; University of Kentucky, Lexington, KY, USA	34. Black shank fungicide trials. <u>Z. Hansen</u> ; University of Tennessee, Knoxville, TN, USA
9:20	30. Producing Low Alkaloid Flue-Cured Tobacco – Effects of Cultivar Selection and Management. <u>J. Cheek</u> , J. Machacek, M. Vann, and D. S. Whitley; NC State University - Dept. of Crop & Soil Sciences, Raleigh, NC, USA	35. Evaluation of foliar applications of indoxacarb (Steward) and other insecticides for flea beetle control in dark tobacco. <u>V. Witcher</u> , A. Bailey, C. Rodgers, A. Keeney, and C. Perkins; University of Kentucky, Research & Education Center, Princeton, KY, USA
9:40	Break & Poster Viewing – Grand Ballroom G	



	<p>Combined Technical Session – Grand Ballroom F</p> <p>Sucker Control and CPA Evaluations <i>Presiding: J. Michael Moore</i></p>
10:00	<p>36. Effect of Ridging on Dark Tobacco Standability and Sucker Control. C. Rodgers¹, A. Bailey¹, <u>M. Richmond</u>³ and R. Ellis²; ¹University of Kentucky, Research & Education Center, Princeton, KY, USA, ²University of Tennessee, Highland Rim Research & Education Center, Springfield, TN, USA and University of Tennessee, Knoxville, TN USA</p>
10:20	<p>37. Evaluation of contact and local-systemic sucker control products on flue-cured tobacco in Canada. <u>M. Richmond</u>², M. Al-Amery¹, A. Shearer, E. Ellenberger¹, and A. Thiessen¹; ¹Canadian Tobacco Research Foundation, Ontario, Canada and University of Tennessee, Knoxville, TN USA</p>
10:40	<p>38. Battling MH Residues with Alternative Application Methods. <u>R. Roussos</u>, M. Vann, G. Ellington, and C. Cahoon; North Carolina State University, Raleigh, NC, USA</p>
11:00	<p>39. Cured Leaf Residues Following Applications of Cyantraniliprole, Flutriafol, and S-metolachlor. <u>M. Vann</u>, M. Short, D. S. Whitley, J. Machacek, and J. Cheek; North Carolina State University, Raleigh, NC, USA</p>
11:20	<p>40. Evaluation of maleic hydrazide applied at different times of day in burley tobacco. <u>M. Richmond</u>¹, R. Hensley³, and B. Pearce²; ¹University of Tennessee, Knoxville, TN, USA, ²University of Kentucky, Lexington, KY, USA, and ³University of Tennessee, Northeast Tennessee AgResearch and Education Center, Greeneville, TN, USA</p>
11:40	<p>Recognition Lunch – Capital Ballroom</p>
1:00	<p>Poster Session – Grand Ballroom G</p>
	<p>Combined Technical Session – Grand Ballroom F</p> <p>Engineering <i>Presiding: Grant Ellington</i></p>
1:30	<p>41. Customized Equipment for Green Weight Harvest of Flue-Cured Tobacco in On-Farm Tests. <u>B. Spivey</u> and N. Harrell; NC State University, NC Cooperative Extension, Smithfield, NC, USA</p>
1:50	<p>42. Assessment of a Maleic Hydrazide Spray System Attached to a Mechanical Harvester. <u>K. Bostian</u>, G. Ellington, M. Vann, J. Macailek; North Carolina State University, Raleigh, NC, USA</p>
2:10	<p>43. Overview of Technologies Evaluated to Improve the Energy Efficiency of Flue-Cured Tobacco Barns. <u>G. Ellington</u>; North Carolina State University, Raleigh, NC, USA</p>



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2:30	44. The Potential Impact of the Proposed Cigarette, OTP, and Vapor Excise Tax Increase. <u>D. Jayson</u> ; TMA, Raleigh, NC, USA
2:50	Break & Poster Viewing – Grand Ballroom G
	Combined Technical Session – Grand Ballroom F Tobacco Production II <i>Presiding: Andy Bailey</i>
3:10	45. Evaluation of fertilization practices of flue-cured tobacco in Virginia. <u>S. Barts</u> and D. Reed; Virginia Tech, Blackstone, VA, USA
3:30	46. Optimum Plant Population in Flue-cured Tobacco. <u>N. Harrell</u> and B. Spivey; NC Cooperative Extension - Johnston County Smithfield, NC, USA
3:50	47. Impact of Harvest Timing on Burley Tobacco. M. Richmond ¹ , <u>A. Counce</u> ¹ , and R. Hensley ² ; ¹ University of Tennessee, Knoxville, TN, USA and ² University of Tennessee, Northeast Tennessee AgResearch and Education Center, Greeneville, TN, USA
4:10	48. Effects of Harvest Timing and Variety Selection on Flue-Cured Tobacco Holding-ability. <u>M. Vann</u> , D. S. Whitley, J. Machacek, and J. Cheek; N.C. State University, Raleigh, NC, USA
4:30	General Business Meeting – Grand Ballroom F

5:00 Adjourn

Poster Session

Wednesday, January 26, 2022, 8:00 am – 5:00 pm
 Available for viewing in **Grand Ballroom G**

49. Relationship between total sugar and reducing sugar content of flue-cured tobacco and main meteorological factors in Guizhou province. N. Chang; Zhengzhou Tobacco Research Institute, Zhengzhou, Henan, China

50. Impacts of Transplant Water Fertilizer to Flue-Cured Tobacco Growth. D. Dabbs¹ and M. Vann²; ¹North Carolina Cooperative Extension Service - Alamance County, Burlington, NC, USA and ²NC State University - Crop & Soil Sciences, Raleigh, NC, USA

51. In vitro fungicide testing on the tobacco black shank pathogen, *Phytophthora nicotianae*, in Tennessee. T. Miller, M. Richmond, and Z. Hansen; University of Tennessee, Knoxville, TN, USA

52. On-Farm Bacterial Wilt Resistant Variety Demonstration. W. Hardee¹, M. Inman², and D. DeWitt³; ¹Clemson University Cooperative Extension, Conway, SC, USA, ²Clemson University, Florence, SC USA, and ³Clemson University Cooperative Extension, Darlington, SC, USA

53. Spray Water Quality Survey in Eastern South Carolina. W. Hardee¹, M. Inman², D. DeWitt³ and J. R. Byrd⁴; ¹Clemson University Cooperative Extension, Conway, SC, USA, ²Clemson University, Florence, SC USA, ³Clemson



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University Cooperative Extension, Darlington, SC, USA and ⁴Clemson University Cooperative Extension, Turbeville, SC USA

54. Study on the effects of different soil types and tobacco varieties on the incidence of tobacco wilt disease. Hu, L.¹, Zhang, CH. Q.², Guan, CH. W.², Hu, L.W.³, Mu, W. J.³, Guo, J. H.³, Yang, M. M.³, Xue, CH. Q.³, Wang, G. Y.³, Wang, A.G.³, and Zhang, ZH. G.⁴; ¹Zhengzhou Tobacco Research Institute of China National Tobacco Corporation, Zhen, Henan Province, China, ²Jiangxi Academy of Tobacco Science, Nanchang, Jiangxi Province, China, ³Zhengzhou Tobacco Research Institute of China National Tobacco Corporation, Zhengzhou, China, and ⁴Fuzhou Branch of Jiangxi Tobacco Company, Fuzhou China

55. Function analysis of genes with SNP differences between high nicotine conversion line TS01 and Yunyan 85 - Hu, L.¹, Tian, Y.Y.², Yang, M. M.², Xu, Y. Q.², Liu, K.², Xuan, B. B.³, Yang, J. ZH.³, Guo, J. H.³, Mu, W. J.³, Xue, CH. Q.³, Wang, G. Y.³, and Hu, L.W.³; ¹Zhengzhou Tobacco Research Institute of China National Tobacco Corporation, Raleigh, Henan China, ²Hongta Tobacco (Group), Yuxi, Yunnan, China and ³Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, China

56. On-Farm Evaluation of Black Shank Resistance in Selected Varieties. J. M. Moore¹, J. Shealey², T. Barnes² and Z. Williams²; ¹UNIVERSITY OF GEORGIA, TIFTON, GA, USA and ²UGA Extension, Tifton, GA, USA

57. Exploring a Biological Alternative for Tomato spotted wilt virus Control in Tobacco. K. Post and J. M. Moore, University of Georgia, Tifton, GA, USA

58. Ecological effects of pesticides on ecosystems and sustainable agriculture in Iran tobacco farms. A. Rezaee; Iran Tobacco Company, Tehran, Iran

59. The Herbicide Stewardship Program at the University of Tennessee - History, Thoughts, and Reflections. N. Rhodes, D. McIntosh, and M. Richmond. University of Tennessee, Department of Plant Sciences, Knoxville, TN, USA

60. Low Nicotine Burley Tobacco: How low can we realistically go? M. Vann; N.C. State University, Raleigh, NC, USA

Graduate Student Poster Competition
Presented by Altria's STEM Network

The 50th Tobacco Workers' Conference would like to thank the following graduate students for their participation in the first TWC Graduate Student Poster Competition.

Comparison of Chemical Management Strategies for Angular Leaf Spot in Dark Tobacco. A. Keeney; University of Kentucky, Lexington, KY, USA

Effect of Fungicide Program and Lower Leaf Removal on Wrapper Leaf Production in Connecticut Broadleaf Cigar Wrapper Tobacco. C. Perkins; University of Kentucky, Lexington, KY, USA

Developing Nitrogen and Potassium Fertilizer Recommendations for Cigar Wrapper Tobacco in North Carolina. M. Short; N.C. State University, Raleigh, NC, USA

Battling MH Residues with Alternative Application Methods. R. Roussos; N.C. State University, Raleigh, NC, USA



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In-vitro Fungicide Testing on the Tobacco Black Shank Pathogen, *Phytophthora nicotianae*, in Tennessee. T. Miller; University of Tennessee, Knoxville, TN, USA

2021 Greenhouse Seed Performance Trials with NC 1226. R. S. Irby; Virginia Tech, Southern Piedmont Center, Blackstone, VA, USA