



**AGRONOMY & LEAF INTEGRITY and
PHYTOPATHOLOGY & GENETICS
Virtual Conference**

4 – 14 October 2021

PROGRAMME



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AGRONOMY & LEAF INTEGRITY and PHYTOPATHOLOGY & GENETICS

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DAY 1
MONDAY 4 OCTOBER

SESSION - Production impact of nutrition and herbicides

Chair: Lea SCOTT

Co-Chair: Anthony JACKSON

CET Time Zone

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- 13:30-13:45 **AP 01** **Flue-cured tobacco response to sub-lethal rates of glufosinate**
 VANN M.C.(1); JORDAN D.L.(1); FISHER L.R.(2)
 (1) *North Carolina State University, Department of Crop & Soil Sciences, Campus Box 7620, Raleigh, NC 27695, U.S.A.*
 (2) *North Carolina State University, NC Agriculture Research Service, Campus Box 7643, Raleigh, NC 27695, U.S.A.*
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- 13:45-14:00 **AP 02** **Assessing the value of transplant water fertilizers in flue-cured tobacco**
 INMAN M.D.(1); VANN M.C.(2); DABBS D.C.(3)
 (1) *Clemson University, Dept. of Plant and Environmental Sciences, Florence, SC, U.S.A.*
 (2) *North Carolina State University, Dept. of Crop and Soil Sciences, Raleigh, NC, U.S.A.*
 (3) *North Carolina State University Cooperative Extension, Raleigh, NC, U.S.A.*
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- 14:00-14:15 **AP 03** **Diagnosis and amelioration of secondary and micro nutrient deficiency on productivity and quality of flue-cured tobacco in Northern light soil region of India**
 UMA MAHESH M.N.V.A.; REDDY B.S.R.; KALYAN RAMI REDDY L.;
 G. KRISHNA KUMAR; SRINIVAS P.
Research Department, ITC-ABD, Rajahmundry-533103, East Godavari (Dist.), Andhra Pradesh, India
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- 14:15-14:30 **AP 04** **Experiences in evaluation of boron needs in North Carolina flue-cured tobacco production: a summary of plant tissue sufficiency data and impacts on yield and quality**
 HARDY D.(1); VANN M.(2); JERNIGAN C.(3); MCGINNIS M.(1); HICKS K.(1)
 (1) *Agronomic Division, North Carolina Dept. of Agriculture and Consumer Services, NC, U.S.A.*
 (2) *North Carolina State University, Crop and Soil Science Department, NC, U.S.A.*
 (3) *Helena Chemical Co., U.S.A.*
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- 14:30-14:45 **AP 05** **Regulatory effects of topping on K⁺ flux and gene expression in tobacco roots**
 LIANG Taibo(1); GUO Yadi(1); MENG Xiangyu(2); DAI Huaxin(1); ZHAI Zhen(1);
 WANG Aiguo(1); ZHANG Yanling(1)
 (1) *Zhengzhou Tobacco Research of CNTC, Zhengzhou 450001, China*
 (2) *Golden Leaf Manufacturing Center, China Tobacco Henan Industrial Co., Ltd, Zhengzhou 450016, China*
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- 14:45-15:00 **AP 06** **Auxin herbicide exposure: comparisons of 2,4-D and dicamba drift to flue-cured tobacco**
 VANN M.C.(1); JORDAN D.L.(1); FISHER L.R.(2)
 (1) *North Carolina State University, Department of Crop & Soil Sciences, Campus Box 7620, Raleigh, NC 27695, U.S.A.*
 (2) *North Carolina Agriculture Research Service, North Carolina State University, Campus Box 7643, Raleigh, NC 27695, U.S.A.*
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DAY 2
TUESDAY 5 OCTOBER

SESSION – Genetics: tools for tobacco plant breeders

Chair: Dongmei XU

Co-Chair: François DORLHAC de BORNE

CET Time Zone

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- 13:30-13:45 **AP 07** **Nematodes: first steps toward the identification of markers related to Rk2 resistance gene against *M. arenaria* and *M. javanica***
 JULIO E.(1); COTUCHEAU J.(1); VOLPATTI R.(1); TRIVILIN A.P.(2); DECORPS C.(1); ENDER M.(2); DORLHAC DE BORNE F.(1)
 (1) Imperial Brands, Leaf Research, La Tour, 24100 Bergerac, France
 (2) Universal Leaf Tabacos Ltda, BR 471, Km 129,8, P.O. Box 1025, CEP 96.835-642, Santa Cruz do Sul, RS, Brazil
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- 13:45-14:00 **AP 08** **An update to the molecular markers used for rapid screening of pathogen resistant plants**
 JULIO E.(1); COTUCHEAU J.(1); VOLPATTI R.(1); DECORPS C.(1); VERRON T.(2); CAHOUS X.(2); DORLHAC DE BORNE F.(1)
 (1) Imperial Brands, Leaf Research, La Tour, 24100 Bergerac, France
 (2) Imperial Brands, Scientific Research, 200-216 Rue Raymond Losserand, 75014 Paris, France
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- 14:00-14:15 **AP 09** **A novel NAC transcription factor, NtNAC060 enhances the bacterial wilt resistance and salt stress tolerance in tobacco**
 LI Xiaoxu(1); PU Wenxuan(1); YI Jianhua(1); GUO Yongfeng(2); GAO Junping(1); WANG Dong(1)
 (1) China Tobacco Hunan Industrial Co., Ltd, 386 Laodong Middle Road, Changsha 410007, China
 (2) Tobacco Research Institute, Chinese Academy of Agricultural Sciences, 11 Keyuanjingsi Road, Qingdao 266100, China
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- 14:15-14:30 **AP 10** **Genetic analyses of a major partial disease resistance QTL in tobacco**
 SHI Rui(1); JIN Jing(2); SHEW D.(2); LEWIS R.S.(1)
 (1) North Carolina State University, Department of Crop and Soil Sciences, Raleigh, NC 27695, U.S.A.
 (2) North Carolina State University, Department of Entomology and Plant Pathology, Raleigh, NC 27695, U.S.A.
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- 14:30-14:45 **AP 11** **Agronomic performance of Polalta-derived breeding lines resistant to tomato spotted wilt virus**
 KORBECKA-GLINKA G.(1); TROJAK-GOLUCH A.(1); BAKAHER N.(2); GOEPFERT S.(2)
 (1) Institute of Soil Science and Plant Cultivation (IUNG) - State Research Institute, Czartoryskich 8, Pulawy, Poland
 (2) Philip Morris Products S.A., PMI R&D, Quai Jeanrenaud 5, CH-2000 Neuchâtel, Switzerland
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- 14:45-15:00 **AP 12** **Study on inheritance of the number of leaves per stalk and dimensions of the leaves from the middle belt in tobacco varieties from different types and their F1 hybrids**
 KORUBIN-ALESOSKA A.(1); DOJCINOV S.(2)
 (1) University St. Kliment Ohridski - Bitola, Scientific Tobacco Institute - Prilep, st.Kicevska bb, Prilep, Republic of Macedonia
 (2) Alliance One Macedonia - Kavadarci, Republic of North Macedonia
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SESSION - Biocontrol of tobacco pests and diseases

Chair: Susan DIMBI

Co-Chair: Fabienne LALANDE

CET Time Zone

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- 13:30-13:45 **AP 13** **The effect of liquid smoke from tobacco waste on tobacco collar rot (*Sclerotinia sclerotiorum*) in Northern Iran**
SAJJADI A.; MORADI GhR.; SALAVATI M.R.; NAJAFI M.R.; BARZEGHAR Y.; GHARIB O.; NAJAFI H.
Tirtash Tobacco Research and Education Center, Behshar, Iran
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- 13:45-14:00 **AP 14** **The control effect and mechanism of green manure on the soil-borne diseases of tobacco**
LIU Yanxia(1); LI Xiang(2); LI Lei(3); ZHANG Heng(1); ZHU Jingwei(1); GAO Weichang(1); YAO Yunjing(3)
(1) *Guizhou Academy of Tobacco Science, Guiyang 550000, China - Upland Flue-Cured Tobacco Quality & Ecology Key Laboratory of China Tobacco*
(2) *Guizhou Tobacco Company, CNTC, Guiyang 550000, China*
(3) *Guizhou University, Guiyang 550000, China*
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- 14:00-14:15 **AP 15** **In search of greener nematicides for use on tobacco: current status in Zimbabwe**
MAHERE T.S.; CHINHEYA C.
Tobacco Research Board, Kutsaga Research Station, P.O. Box 1909, Airport Ring Road, Harare, Zimbabwe
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- 14:15-14:30 **AP 16** **Molecular characterization of *cry* genes in *Bacillus thuringiensis* native strains isolated from Northern Iran**
SHAZDEHAHMADI M.; SAJJADI A.; SHAHADATIMOGHADAM Z.
Tirtash Tobacco Research and Education Center, Behshar, Iran
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- 14:30-14:45 **AP 17** **Evaluation of novel biological control bacteria for management of angular leaf spot in dark tobacco**
MARTINEZ-OCHOA N.; SHIELDS C.A.; ARAUJO ALVES M.; JOUBERT A.; MILLER R.D.
University of Kentucky, Department of Plant and Soils, 1401 University Drive, 102 KTRDC, Lexington, KY 40546-0236, U.S.A.
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- 14:45-15:00 **AP 18** **Pathogen identification and biological control of pole rot of flue-cured tobacco caused by *Rhizopus arrhizus* (syn. *R. oryzae*)**
LU Can-Hua(1); GAI Xiaotong(1); SU Jiaen(2); MA Junhong(1); LEI Liping(1); JIANG Ning(1); LIN Zhonglong(3); GAO Chaoyang(4); Jin Yan(1); XIA Zhen-Yuan(1)
(1) *Yunnan Academy of Tobacco Agriculture Sciences, Kunming 650021, China*
(2) *Dali Branch of Yunnan Provincial Tobacco Company, Dali 671000, China*
(3) *China National Tobacco Corporation Yunnan Company, Kunming 650011, China*
(4) *Yanfang Comprehensive Service Center of Agriculture and Rural Affairs of the Zhanyi District, Qujing 655339, China*
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DAY 4
THURSDAY 7 OCTOBER

SESSION - Nicotine impacts of genetics and production practices

Chair: Marcos LUSSO

Co-Chair: Lea SCOTT

CET Time Zone

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- 13:30-13:45 **AP 19** **A novel low alkaloid gene**
 FISHER A.(1); PATRA B.(1); WU X.(2); SINGH S.(1); FISHER C.(2); JI H.(1)
 (1) *University of Kentucky, Kentucky Tobacco Research & Development Centre, KTRDC Building, 1401 University Drive, Lexington, KY 40546, U.S.A.*
 (2) *University of Kentucky, Department of Plant & Soil Sciences, KTRDC Building, 1401 University Drive, Lexington, KY 40546, U.S.A.*
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- 13:45-14:00 **AP 20** **Functional characterization of NIC1-locus in regulating nicotine biosynthesis in tobacco and its applications in low nicotine variety development**
 SUI Xueyi; XIE He; WANG Bingwu; TONG Zhijun; SONG Zhongbang; GAO Yulong; ZHANG Yihan; ZHAO Lu; LI Yongping
Yunnan Academy of Tobacco Agricultural Sciences, Kunming, China
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- 14:00-14:15 **AP 21** **Impact of genotype and management to nicotine concentration in Burley tobacco**
 VANN M.C.; MACHACEK J.L.; CHEEK J.A.; SHORT M.M.; WHITLEY D.S.
North Carolina State University, Department of Crop & Soil Sciences, Campus Box 7620, Raleigh, NC 27695, U.S.A.
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- 14:15-14:30 **AP 22** **The effect of nicotine content on cured leaf quality of Burley**
 FISHER C.R.(1); JI H.(2); WU X.(2); FISHER A.M.(2)
 (1) *University of Kentucky, Plant & Soil Science Department, Lexington, KY 40546, U.S.A.*
 (2) *University of Kentucky, Kentucky Tobacco Research & Development Center, Lexington, KY 40546, U.S.A.*
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- 14:30-14:45 **AP 23** **Effects of genotype and cultural practices to flue-cured tobacco growth, development, and chemistry**
 VANN M.C.; CHEEK J.A.; MACHACEK J.L.; WHITLEY D.S.
North Carolina State University, Department of Crop & Soil Sciences, Campus Box 7620, Raleigh, NC 27695, U.S.A.
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- 14:45-15:00 **AP 24** **Breeding for high nicotine tobacco varieties**
 MALPICA A.; L'HUIMEAU J.; BACHET S.
Bergerac Seed & Breeding, La Tour, 24100 Bergerac, France
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DAY 5
FRIDAY 8 OCTOBER

SESSION - Sustainability through production practices

Chair: Anthony JACKSON

Co-Chair: Marcos LUSSO

CET Time Zone

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- 13:30-13:45 **AP 25** **Climate change exacerbates the challenge of pests and diseases on tobacco in Zimbabwe**
CHINHEYA C.; DIMBI S.; MAGAMA F.
Tobacco Research Board, Plant Health Services Division, P.O. Box 1909, Harare, Zimbabwe
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- 13:45-14:00 **AP 26** **Effects of wheat straw residue and its biochar on physical properties and enzyme activities of tobacco-growing soil**
WANG Yi(1,2); Du Chuan-yin(1); Li Jian-lei(3); Liu Zhi-gang(1); Guan En-sen(1); WANG De-quan(1); WANG Da-hai(2); Gao Kai(1); WANG Shu-sheng(2)
(1) *Weifang Tobacco Co., Ltd, Weifang, Shandong 262200, China*
(2) *Tobacco Research Institute, Chinese Academy of Agriculture Sciences, Qingdao, Shandong 266101, China*
(3) *Shandong Province Tobacco Monopoly Bureau (Company), Jinan 250098, China*
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- 14:00-14:15 **AP 27** **Soil type regulates carbon and nitrogen stoichiometry and mineralization and bacteria following biochar or nitrogen addition**
WANG Huanhuan; SHI Hongzhi; ZHAO Yuanyuan; LIU Guoshun
College of Tobacco Science, Henan Agricultural University / Tobacco Harm Reduction Research Center of HAU, Zhengzhou 450002, China
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- 14:15-14:30 **AP 28** **Evaluation of the effect of vermicompost on tobacco plant growth, yield and leaf quality**
CHIBUDU C.; MAVUKA R.
Tobacco Research Board, Kutsaga Research Station, P.O. Box 1909, Airport Ring Road, Harare, Zimbabwe
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- 14:30-14:45 **AP 29** **Evaluation of a biological suckercide, Pelargonic acid, for the control of suckers in tobacco production in Zimbabwe**
ZINYANDU F.; MUKUNGURUTSE C.; KOGA C.; MAVUKA R.
Tobacco Research Board, Kutsaga Research Station, P.O. Box 1909, Airport Ring Road, Harare, Zimbabwe
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- 14:45-15:00 **AP 30** **Investigation of compressed charcoal production from charcoal pyrolysis of Virginia tobacco stalk**
MORADI ROBATI G.R.; NAJAFI ATRABI H.; GHARIB O.; BARZEGAR E.
Tirtash Tobacco Research and Education Center, Behshar, Iran
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DAY 6
MONDAY 11 OCTOBER

SESSION - Technology applications in genetics and physiology

Chair: Masahiro MIYOSHI

Co-Chair: Dongmei XU

CET Time Zone

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- 13:30-13:45 **AP 31** **High quality genome assembly of *Nicotiana tabacum***
 GAYSSANT H.(1); DARNIGE E.(1); COTUCHEAU J.(2); DORLHAC DE BORNE F.(2); JULIO E.(2); ZOUINE M.(1)
 (1) *Laboratoire de Recherche en Sciences Végétales (LRSV), Université de Toulouse, CNRS, UPS, Toulouse INP, 31326 Castanet-Tolosan, France*
 (2) *Imperial Tobacco Limited and Imperial Brands PLC Companies, Bergerac, France*
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- 13:45-14:00 **AP 32** **Understanding the response of tobacco plants to root-knot nematode infection by means of chlorophyll fluorescence imaging**
 SHAMUDZARIRA G.T.H.(1); MATANGIRA N.(1); SHAMUDZARIRA M.C.(1); MAGAMA F.(1); CHINHEYA C.C.(1); DIMBI S.(1)
Tobacco Research Board, Kutsaga Research Station, P.O. Box 1909, Airport Ring Road, Harare, Zimbabwe
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- 14:00-14:15 **AP 33** **Identification and functional characterization of the pale yellow gene in tobacco**
 GRUNDMANN L.(1); PRAMOD S.(2); ADAMS A.(2); FREDERICK J.(2); KAENEL A.(1); NOLL G.(1); XU D.(2); PRUEFER D.(1); LUSSO M.(2)
 (1) *Fraunhofer IME, Schlossplatz 8, 48143 Münster, Germany*
 (2) *Altria Client Services, 601 E Jackson St., Richmond, VA 23219, U.S.A.*
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- 14:15-14:30 **AP 34** **Dynamics of molecular leaf senescence processes occurring during curing of Virginia tobacco cultivar K326**
 CHEVAL C.; BATTEY J.; SIERRA N.; DULIZE R.; BORNAND D.; SIMICEVIC J.; TITZ B.; GUY P.A.; LASZLO C.; HAIDUC A.; DOSSIN E.; BOVET L.; IVANOV N.; GOEPFERT S.
Philip Morris International R&D, Philip Morris Products SA, CH-2000 Neuchâtel, Switzerland
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- 14:30-14:45 **AP 35** **Two-year evaluation of agronomic practices on standard and low-nicotine tobacco cultivars by non-destructive photonic sensing**
 TUCCIO L.(1); BARGIACCHI E.(2); MILLI G.(3); MIELE S.(2); FRANCESCHETTI L.(3); AGATI G.(1)
 (1) *CNR-IFAC, I-55019 Sesto Fiorentino, Firenze, Italy*
 (2) *Consortium INSTM, I-50121 Firenze, Italy*
 (3) *Fattoria Autonoma Tabacchi (FAT) & ITT, I-06012 Città di Castello, Perugia, Italy*
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- 14:45-15:00 **AP 36** **Classification of Virginia Bright tobacco varieties by non-destructive photonic sensing of leaf flavonoids**
 TUCCIO L.(1); BARGIACCHI E.(2); MILLI G.(3); MIELE S.(2); FRANCESCHETTI L.(3); AGATI G.(1)
 (1) *CNR-IFAC, I-55019 Sesto Fiorentino, Firenze, Italy*
 (2) *Consortium INSTM, I-50121 Firenze, Italy*
 (3) *Fattoria Autonoma Tabacchi (FAT) & ITT, I-06012 Città di Castello, Perugia, Italy*
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DAY 7
TUESDAY 12 OCTOBER

SESSION - Pests and diseases management

Chair: François DORLHAC de BORNE

Co-Chair: Susan DIMBI

CET Time Zone

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- 13:30-13:45 **AP 37** **Estimating the effective control of Ditacin 8SL (Ningnanmycin) and Sat 4SL (Cytosinepeptidemycin) with tobacco mosaic virus (TMV), cucumber mosaic virus (CMV), and potato virus Y (PVY) on tobacco plants**
 NGUYEN VAN Chin(1); DO THI Thuy(2); PHUNG THI Hay(2); NGUYEN VAN Van(1); TAO NGOC Tuan(1); NGUYEN QUOC Tuan(1); NGUYEN VAN Cuong(2)
 (1) Vietnam Tobacco Institute, 133 Nguyen Trai Road, Thuong Dinh Street, Thanh Xuan District, Ha Noi City, Vietnam
 (2) Branch of Vietnam Tobacco Institute, Bac Giang Province, Vietnam
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- 13:45-14:00 **AP 38** **Study the interactions of root-knot nematode (*Meloidogyne incognita*) and tobacco black shank (*Phytophthora nicotianae*) on some tobacco cultivars under natural field pollution conditions**
 SHAZDEHAHMADI M.; SAJJADI A.; SHAHADATIMOGHADAM Z.
 Tirtash Tobacco Research and Education Center, Behshar, Iran
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- 14:00-14:15 **AP 39** **Risk assessment of *Ralstonia solanacearum* to fluazinam and evaluation of combinatory fungicides**
 MU Wenjun(1); MA Xiaojing(1); HU Liwei(1); ZHANG Zhigao(2); TANG Lina(3); LI Qiyang(3); HUANG Lei(4); FENG Xiaohu(2); SONG Jizhen(1)
 (1) Zhengzhou Tobacco Research Institute of CNTC, Key Laboratory of Eco-environment and Leaf Tobacco Quality, No. 2 Fengyang Street, Zhengzhou 450001, China
 (2) Jiangxi Tobacco Company, Fuzhou Branch, No. 1666 Yingbin Street, Fuzhou 344000, Jiangxi, China
 (3) Fujian Institute of Tobacco Science, No. 378 Hualin Road, Fuzhou 350003, China
 (4) China Tobacco Guangdong Industrial Co., Ltd, No. 62 Chiyan Street, Guangzhou 510310, China
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- 14:15-14:30 **AP 40** **Differential susceptibility to angular leaf spot (*Pseudomonas syringae* pv. *tabaci*) in dark tobacco varieties**
 KEENEY A.B.(1); BAILEY W.A.(1); HANSON Z.R.(2)
 (1) University of Kentucky, Department of Plant and Soil Sciences, Research & Education Center, Princeton, KY 42445, U.S.A.
 (2) University of Tennessee, Department of Plant Science, Knoxville, TN 37996, U.S.A.
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- 14:30-14:45 **AP 41** **Evaluation of spray programs for control on angular leaf spot (*Pseudomonas syringae* pv. *tabaci*) in dark tobacco production**
 KEENEY A.B.; BAILEY W.A.
 University of Kentucky, Department of Plant and Soil Sciences, Research & Education Center, Princeton, KY 42445, U.S.A.
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- 14:45-15:00 **AP 42** **Effective light device for trapping tobacco moth (*Ephestia elutella*)**
 IWAMOTO H.; TAKAHASHI R.; IMAI T.
 Japan Tobacco Inc., Leaf Tobacco Research Center, 1900 Idei, Oyama, Tochigi 323-0808, Japan
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DAY 8
WEDNESDAY 13 OCTOBER

SESSION - Cigar tobaccos and alternative uses and crops

Chair: Fabienne LALANDE

Co-Chair: Colin FISHER

CET Time Zone

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- 13:30-13:45 **AP 43** **Cigar wrapper response to nitrogen fertilizer rates in western North Carolina**
SHORT M.M.; VANN M.C.; CHEEK J.A.; MACHACEK J.L.; WHITLEY D.S.
North Carolina State University, Department of Crop & Soil Sciences, Campus Box 7620, Raleigh, NC 27695, U.S.A.
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- 13:45-14:00 **AP 44** **Development of production recommendations for Connecticut broadleaf cigar wrapper tobacco in Kentucky and Tennessee**
BAILEY W. A.; RODGERS J.C.; KEENEY A.B.; PERKINS C.H.; WITCHER V.F.
University of Kentucky, Department of Plant and Soil Sciences, Research & Education Center, Princeton, KY 42445, U.S.A.
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- 14:00-14:15 **AP 45** **Evaluation of advanced experimental hybrids of cigar wrapper tobacco for yield and quality in Zimbabwe**
MUKOYI F.; MAGAMA F.; GARWE D.
Tobacco Research Board, Kutsaga Research Station, P.O. Box 1909, Airport Ring Road, Harare, Zimbabwe
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- 14:15-14:30 **AP 46** **Characterization and functional prediction of microbial community in agricultural processing of cigar leaves from Shifang, Sichuan**
ZHANG Qian Y.(1); CAI W.(1); LIU Y.(2); YE K.Y.(2); ZHANG J.(3); LI D.L.(1)
(1) *Technical Research Center, China Tobacco Sichuan Industrial Co., Ltd, Chengdu 610066, China*
(2) *Great Wall Cigar Factory, China Tobacco Sichuan Industrial Co., Ltd, Shifang 618400, China*
(3) *National Engineering Laboratory for Cereal Fermentation Technology, Jiangnan University, Wuxi 214122, China*
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- 14:30-14:45 **AP 47** **Alternative use for tobacco: solvent extraction of oil from Zimbabwe tobacco seed hybrids and parentals**
MUSUNA-GARWE C.C.; MUDYAWABIKWA B.; MAGAMA F.; DIMBI S.; GARWE D.
Tobacco Research Board, Kutsaga Research Station, P.O. Box 1909, Airport Ring Road, Harare, Zimbabwe
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- 14:45-15:00 **AP 48** **Industrial hemp production: an evaluation of its adaptability and potential incorporation in tobacco growing systems in Zimbabwe**
SHAMUDZARIRA M.; MATANGIRA N.; MAGAMA F.; DIMBI S.
Tobacco Research Board, Kutsaga Research Station, P.O. Box 1909, Airport Ring Road, Harare, Zimbabwe
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DAY 9
THURSDAY 14 OCTOBER

SESSION - TSNA impact of genetics and production practices

Chair: Colin FISHER

Co-Chair: Limeng ZHANG

CET Time Zone

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- 13:30-13:45 **AP 49** **Consequences of molecular genetic alteration of leaf nitrate levels on TSNAs, alkaloids, flowering time, and biomass in Burley tobaccos**
DEWEY R.E.(1); BOVET L.(2); GOEPFERT S.(2); CAMPANONI P.(2); LEWIS R.S.(1)
(1) *North Carolina State University, Dept. of Crop and Soil Sciences, Campus Box 8009, Raleigh, NC 27695, U.S.A.*
(2) *PMI R&D, Philip Morris Products S.A., Quai Jeanrenaud 5, 2000 Neuchatel, Switzerland*
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- 13:45-14:00 **AP 50** **Genetic mapping of a novel low-anatabine gene mutation in tobacco (*Nicotiana tabacum* L.)**
KUDITHIPUDI C.; HART F.R.
Altria Client Services LLC, Research Development & Regulatory Affairs, 601 E. Jackson Street, Richmond, VA 23219, U.S.A.
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- 14:00-14:15 **AP 51** **Impact of potassium source on cured leaf moisture and total TSNA in Burley and dark fire-cured tobacco**
BAILEY W.A.(1); KEENEY A.B.(1); PEARCE R.C.(1); RICHMOND M.D.(2)
(1) *University of Kentucky, Department of Plant and Soil Sciences, Lexington, KY 40546, U.S.A.*
(2) *University of Tennessee, Department of Plant Sciences, Knoxville, TN 37996, U.S.A.*
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- 14:15-14:30 **AP 52** **Effects of exogenous salicylic acid on photosynthesis and nitrogen metabolism of tobacco under drought stress and transcriptome analysis**
FENG Yuqing(1); SHI Hongzhi(1); ZHAO Yuanyuan(1); ZHOU Jun(2); MA Yanjun(2); LI Geng(1)
(1) *College of Tobacco Science / Tobacco Harm Reduction Research Center, Henan Agricultural University, Zhengzhou 450002, China*
(2) *Beijing Cigarette Factory, Shanghai Tobacco Group Co., Ltd., Beijing 100024, China*
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- 14:30-14:45 **AP 53** **Endophytic fungal community of tobacco leaves and their potential role in the formation of Cherry Red tobacco**
JIANG Yonglei; ZHAO Gaokun, LIU Jiahong, XIE Yan; LI Yong; ZOU Congming
Yunnan Academy of Tobacco Agricultural Sciences, Kunming, China
Qujing Branch of Yunnan Tobacco Company, Qujing, China
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- 14:45-15:00 **AP 54** **Effect of fermentation temperature on TSNA contents and aroma quality of cigar filler tobacco and microbial diversity analysis**
LI Jingjing(1); SHI Hongzhi(1); QIN Yanqing(2); ZHOU Jun(3); ZHAO Yuanyuan(1); ZHONG Qiu(4); LIU Deshui(3); WANG Jun(4); ZHANG Ruina(4)
(1) *College of Tobacco Science of Henan Agricultural University / Tobacco Harm Reduction Research Center of Hui, Zhengzhou 450002, China*
(2) *Sichuan Provincial Tobacco Company, Chengdu, China*
(3) *Beijing Cigarette Factory of Shanghai Tobacco (Group) Co., Beijing 100024, China*
(4) *Deyang Municipal Tobacco Company, Deyang, 618400, China*
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TIME ZONES

Time zone equivalents to CET 13:30 Conference start time

Timezones	City	Time	Hour difference with Paris
CET	Paris	13:30	0
PDT	San Francisco	04:30	-9
CST	Managua	05:30	-8
EDT	New York	07:30	-6
BRT	São Paulo	08:30	-5
BST	London	12:30	-1
CAT	Harare	13:30	0
EET	Bucharest	14:30	+1
GST	Dubai	15:30	+2
IST	New Delhi	17:00	+3:30
CST	Beijing	19:30	+6
JST	Tokyo	20:30	+7
AEST	Sydney	21:30	+8

CET	Central European Time
PDT	Pacific Daylight Time
CST	Central Standard Time
EDT	Eastern Daylight Time
BRT	Brasilia Time
BST	British Summer Time
CAT	Central Africa Time
EET	Eastern European Time
GST	Gulf Standard Time
IST	Indian Standard Time
CST	China Standard Time
JST	Japan Standard Time
AEST	Australian Eastern Standard Time