Kansas State University Libraries

New Prairie Press

Conference on Applied Statistics in Agriculture 2016 - 28th Annual Conference Proceedings

Editor's Preface and Table of Contents

Perla Reyes
Kansas State University, pereyesc@ksu.edu

Follow this and additional works at: https://newprairiepress.org/agstatconference

Part of the Agriculture Commons, and the Applied Statistics Commons

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License.

Recommended Citation

Reyes, Perla (2016). "Editor's Preface and Table of Contents," *Conference on Applied Statistics in Agriculture*. https://doi.org/10.4148/2475-7772.1547

This Event is brought to you for free and open access by the Conferences at New Prairie Press. It has been accepted for inclusion in Conference on Applied Statistics in Agriculture by an authorized administrator of New Prairie Press. For more information, please contact cads@k-state.edu.

Preface

These proceedings contain papers presented at the twenty-eighth annual Kansas State University Conference on Applied Statistics in Agriculture, held in Manhattan, Kansas, May 1 - 3, 2016. The purpose of the conference is to provide a forum for discussion on the application of statistics to problems in agricultural sciences. Papers and posters presented at the conference and included in the proceedings are intended to provide information to both the statistician and agricultural researcher on current issues of agricultural and general statistical interest. More than one hundred registrants for this year's conference came from across the country and represented government, industry, and academia.

The keynote speaker was Ralph O' Brien, Ph.D., Professor Emeritus of Biostatistics, Case Western Reserve University. Dr. O'Brien's keynote talk was *"Applying Demings Principles for Management and Teaching to Spur Excellence in Research"*. He also presented a workshop on May 1 titled *"Additions and Upgrades in Our Everyday Statistical Toolbox"*.

Each contributed paper was refereed before being accepted for publication in these proceedings. The papers were accepted for publication based on their interest, relevance, innovation, and application to the agricultural sciences and statistics.

Sincere thanks to the following individuals: Billy Bridges, Bruce A. Craig, Philip M. Dixon, Edward Gbur, Kathy Hanford, Dallas E. Johnson, Weixing Song, Carl Walker for referring submitted manuscripts; Jo Blackburn and student volunteers for help in conference planning and organization. Special thanks go to our conference sponsors for their continued support: American Statistical Association, SAS JMP, DuPont Pioneer, Elanco, and Zoetis.

Perla Reyes, Ph.D.
2016 Proceedings Editor

Table of Contents

A BAYESIAN GWAS METHOD UTILIZING HAPLOTYPE CLUSTERS FOR A COMPOSITE BREED POPULATION **1**
Danielle F. Wilson-Wells, Department of Statistics, University of Nebraska-Lincoln
Stephen D. Kachman, Department of Statistics, University of Nebraska-Lincoln

COMPARING LINEAR MIXED MODELS FOR PRELIMINARY YIELD TRIALS THAT FOLLOW AUGMENTED EXPERIMENTAL DESIGNS **14**
Sudha Neupane Adhikari, Agronomy, Horticulture, and Plant Science Department, South Dakota State University
Jixiang Wu, Agronomy, Horticulture, and Plant Science Department, South Dakota State University
Melanie Caffe-Treml, Agronomy, Horticulture, and Plant Science Department, South Dakota State University

SHOULD BLOCKS BE FIXED OR RANDOM? **23**
Philip M. Dixon, Department of Statistics, Iowa State University

IRRIGATED AND RAINFED CROPS Zea mays L. (MAIZE) AND Glycine max (SOYBEAN) ACTING AS A SOURCE OR SINK FOR ATMOSPHERIC WARMING AT MEAD, NEBRASKA **40**
Jane A. Okalebo, School of Natural Resources, University of Nebraska-Lincoln
Kenneth G. Hubbard, School of Natural Resources, University of Nebraska-Lincoln
Andrew E. Suyker, School of Natural Resources, University of Nebraska-Lincoln

PAIRED COMPETITION ANALYSIS USING MIXED MODELS **65**
Patrick Gallagher, Department of Statistics, Purdue University
Bruce A Craig, Department of Statistics, Purdue University
Tim Luttermoser, Department of Entomology, Purdue University
Grzegorz Buczkowski, Department of Entomology, Purdue University

DEVELOPING PREDICTION EQUATIONS FOR FAT FREE LEAN IN THE PRESENCE OF AN UNKNOWN AMOUNT OF PROPORTIONAL MEASUREMENT ERROR **73**
Zachary Hass, Department of Statistics, Purdue University
Bruce A Craig, Department of Statistics, Purdue University
Allan P. Schinckel, Department of Animal Sciences, Purdue University

ALTERNATIVE ESTIMATION TECHNIQUES FOR CORRELATED DISCRETE DATA **90**
William J. Price, Statistical Programs, University of Idaho
Bahman Shafii, Statistical Programs, University of Idaho

STRATEGIES FOR REDUCING CONTROL GROUP SIZE IN EXPERIMENTS USING LIVE ANIMALS **100**
Matthew Kramer, Statistics Group, ARS, USDA
Enrique Font, Laboratorio de Etología, Instituto Cavanilles de Biodiversidad y Biologa Evolutiva, Universidad de Valencia

BAYESIAN ESTIMATION OF STABILITY INDICES OF SORGHUM VARIETY TRIALS **121**
Siraj Osman Omer, Experimental Design and Analysis Unit, Agricultural Research Corporation (ARC), Sudan
Abdel Wahab Hassan Abdalla, Department of Agronomy, Faculty of Agriculture, University of Khartoum, Sudan
Mohammed Hamza Mohammed, Cereal Research Center, Agricultural Research Corporation (ARC), Sudan
Murari Singh, International Center for Agricultural Research in the Dry Areas (ICARDA), Amman, Jordan

TOPOLOGICAL METHODS FOR THE QUANTIFICATION AND ANALYSIS OF COMPLEX PHENOTYPES **146**
Patrick S. Medina, Department of Statistics, Purdue University
Rebeca W. Doerge, Department of Statistics, Purdue University

THE EFFECT OF POULTRY LITTER APPLICATION ON AGRICULTURAL PRODUCTION: A META-ANALYSIS OF CROP YIELD, NUTRIENT UPTAKE AND SOIL FERTILITY **162**
Yaru Lin, Department of Crop, Soil, and Environmental Sciences, Auburn University; USDA-ARS, National Soil Dynamics Laboratory
Edzard van Santen, Statistical Consulting Unit, Institute of Food and Agricultural Sciences, University of Florida
Dexter B. Watts, Department of Crop, Soil, and Environmental Sciences, Auburn University; USDA-ARS, National Soil Dynamics Laboratory

SIMULATION COMPARISON OF STATISTICAL METHODS USED IN ASSESSING VACCINE EFFICACY IN VETERINARY BIOLOGICS **175**
Kenneth Wakeland, Iowa State University, Department of Statistics
Brian J Fergen, Boehringer Ingelheim Vetmedica, Inc