

**2005**  
**Publications of Agricultural Research Center Scientists**  
**By Department and Project**  
**Agricultural Research Center Washington State University**

**Agricultural Research Center Administration:**

**0433, 0557, 0592, AND 0623  
AQUACULTURE, IDAHO AND  
WASHINGTON**

Soule, M., K. Cain, S. LaFrentz, and D.R. Call. 2005. Combining Suppression Subtractive Hybridization and Microarrays to Map the Intraspecies Phylogeny of *Flavobacterium psychrophilum*. *Infection and Immunity*. 73:3799-3802.

Soule, M., S. LaFrentz, K. Cain, S. LaPatra, and D.R. Call. 2005. Polymorphisms in 16s RNA Genes of *Flavobacterium psychrophilum* Correlate with Elastin Hydrolysis and Tetracycline Resistance. *Diseases of Aquatic Organisms*. 65:209-216.

Hansen, J.D., E.G. Landis, and R.B. Phillips. 2005. Discovery of a New LG Heavy Chain Isotype in Rainbow Trout: Implications for a Novel B Cell Developmental Pathway in Teleost Fish. *Proceedings of the National Academy of Sciences*. 102:6919-6924.

Al-Holy, M., M. Lin, and B. Rasco. 2005. Destruction of *Listeria monocytogenes* in Sturgeon (*Acipenser transmontanus*) Caviar Using a Combination of Nisin with Chemical Antimicrobials or Moderate Heat. *Journal of Food Protection*. 68:512-520.

**0436, 0556, AND 0587 JOINTED  
GOATGRASS: A THREAT TO U.S.  
WHEAT PRODUCTION**

Hanson, B.D., C.A. Mallory-Smith, B. Shafii, D.C. Thill, and R.S. Zemetra. 2005. Pollen-mediated Gene Flow from Blue Aleurone Wheat to Other Wheat Cultivars. *Crop Science*. 45:1610-1617.

Hanson, B.D., C.A. Mallory-Smith, W.J. Price, B. Shafii, D.C. Thill, and R.S. Zemetra. 2005. Interspecific Hybridization: Potential for Movement of Herbicide Resistance from Wheat (*Triticum aestivum*) to Jointed Goatgrass (*Aegilops cylindrica*). *Weed Technology*. 19:674-682.

**Animal Science:**

**0181 GENETIC VARIATION IN GROWTH,  
CARCASS COMPOSITION, QUALITY,  
AND FATTY ACID COMPOSITION OF  
WAGYU, ANGUS, AND WAGYU-  
ANGUS CROSS CATTLE**

Gaskins, C.T., G.D. Snowder, M.K. Westman, and M. Evans. 2005. Influence of Body Weight, Age, and Weight Gain on Fertility and Prolificacy in Four Breeds of Ewe Lambs. *Journal of Animal Science*. 83:1680-1689.

**0374 NUTRIENT MANAGEMENT:  
FEEDING FOR REDUCED EXCRETION  
OF NUTRIENTS BY RUMINANTS**

Kincaid, R.L., D.K. Garikipati, T.D. Nennich, and J.H. Harrison. 2005. Effect of Grain Source and Exogenous Phytase on Phosphorus Digestibility in Dairy Cows. *Journal of Dairy Science*. 88:2893-2902.

Nennich, T.D., J.H. Harrison, L.M. VanWieringen, D. Meyer, A.J. Heinrichs, W.P. Weiss, N.R. St-Pierre, R.L. Kincaid, D.L. Davidson, and E. Block. 2005. Prediction of Manure and Nutrient Excretion from Dairy Cattle. *Journal of Dairy Science*. 88:3721-3733.

**0432 PRE- AND POST- HARVEST  
MANIPULATION OF PALATABILITY,  
APPEARANCE, AND LIPID  
COMPOSITION OF RED MEAT**

Jiang, Z., T. Kunej, J.J. Michal, C.T. Gaskins, J.J. Reeves, J.R. Busboom, P. Dovc, and R.W. Wright Jr. 2005. Significant Associations of the Mitochondrial Transcription Factor A (TFAM) Promoter Polymorphisms with Marbling and Subcutaneous Fat Depth in Wagyu x Limousin F2 Crosses. *Biochemical and Biophysical Research Communications*. 334:516-523.

Purchas, R.W. and J.R. Busboom. 2005. The Effect of Production System and Age on Levels of Iron, Taurine, Carnosine, Coenzyme Q10, and Creatine in Beef Muscles and Liver. *Meat Science*. 70:589-596.

Purchas, R.W., T.W. Knight, and J.R. Busboom. 2005. The Effect of Production System and Age on Concentrations of Fatty Acids in Intramuscular Fat of the Longissimus and Triceps Brachii Muscles of Angus-Cross Heifers. *Meat Science*. 70:597-603.

Wu, X.-L., M.D. MacNeil, S. De, Q.J. Xiao, J.J. Michal, C.T. Gaskins, J.J. Reeves, J.R. Busboom, R.W. Wright Jr., and Z. Jiang. 2005. Evaluation of Candidate Gene Effects for Beef Backfat via Bayesian Model Selection. *Genetica*. 125:103-113.

**0446 A CANDIDATE GENE APPROACH  
FOR MAPPING OF QUANTITATIVE  
TRAIT LOCI FOR MARBLING IN  
WAGYU X LIMOUSIN CROSSES**

Wu, X.-L., M.D. MacNeil, S. De, Q.-J. Xiao, J.J. Michal, C.T. Gaskins, J.J. Reeves, J.R. Busboom, R.W. Wright Jr, and Z. Jiang. 2005. Bayesian Evaluation of Candidate Genes for Beef Backfat Quantitative Trait Loci Using the SAS System. *Genetica*. 125:103-113.

**0536 DEVELOPMENT OF EX SITU BOVINE  
SPERMATOGENESIS**

Oatley, J.M., J.J. Reeves, and D.J. McLean. 2005. Establishment of Spermatogenesis in Neonatal Bovine Testicular Tissue Following Ectopic Xenografting Varies with Donor Age. *Biology of Reproduction*. 72:358-364.

McLean, D.J. 2005. Spermatogonial Stem Cell Transplantation and Testicular Function. *Cell Tissue Research*. 322:21-31.

Oatley, J.M., D.M. de Avila, A. Tibary, J. Wheaton, D.J. McLean, and J.J. Reeves. 2005. Changes in Spermatogenesis and Endocrine Function in the Ram Testis Due to Irradiation and Active Immunization against LHRH. *Journal of Animal Science*. 83:604-612.

**0568 NATIONAL ANIMAL GENOME  
RESEARCH PROGRAM**

Griffin, K.B., J.J. Michal, L.K. Fox, C.T. Gaskins, and Z. Jiang. 2005. Fine Mapping of the Bovine Chromosome 22q24 Region that Harbors Antimicrobial Genes and a QTL for Somatic Cell Score. *Animal Genetics*. 36:448-450.

Jiang, Z, S. De, M.D. Garcia, K.B. Griffin, X.-L. Wu, Q.-J. Xiao, J.J. Michal, B.S. Sharma, and G.B. Jansen. 2005. An Independent Confirmation of a Quantitative Trait Locus for Milk Yield and Composition Traits on Bovine Chromosome 26. *Journal of Animal Breeding and Genetics*. 122:281-284.

Kunej, T., X.-L. Wu, T.M. Berlic, J.J. Michal, Z. Jiang, and P. Dovc. 2005. Frequency Distribution of a Cys430Ser Polymorphism in the Peroxisome Proliferator-Activated Receptor-Gamma Coactivator-1 (PPARGC1) Between Chinese and Western Pig Breeds. *Journal of Animal Breeding and Genetics*. 122:7-11.

Pan, Z.X., H.L. Liu, J. Chen, D. Xu, Z. Jiang, and Z. Xie. 2005. In Silico Discovery of Genes Expressed in Liver, Kidney, Spleen, and Small Intestine of Pigs. *Asian-Australasian Journal of Animal Science*. 18:170-178.

Jiang, Z., J.J. Michal, J.S. Melville, and H.L. Baltzer. 2005. Multi-Alignment of Orthologous Genome Regions in Five Species Provides New Insights into the Evolutionary Makeup of Mammalian Genomes. *Chromosome Research*. 13:707-715.

Jiang, Z., X.-L. Wu, J.J. Michal, and J.P. McNamara. 2005. Pattern Profiling and Mapping of the Fat Body Transcriptome in *Drosophila Melanogaster*. *Obesity Research*. 13:1898-1904.

#### **0627 ASSOCIATIONS OF THE BASAL MITCHONDRIAL TRANSCRIPTION MACHINERY GENES WITH MARBLING IN BEEF CATTLE**

Jiang, Z., T. Kunej, J.J. Michal, C.T. Gaskins, J.J. Reeves, J.R. Busboom, P. Dovc, and R.W. Wright Jr. 2005. Significant Associations of the Mitochondrial Transcription Factor A (TFAM) Promoter Polymorphisms with Marbling and Subcutaneous Fat Depth in Wagyu X Limousin F2 Crosses. *Biochemical and Biophysical Research Communications*. 334:516-523.

Kunej, T., J.J. Michal, P. Dovc, and Z. Jiang. 2005. Genetic Variation of the Mitochondrial D-loop Region Containing Mitochondrial Transcription Factor A (TFAM) Binding Sites is Not Associated with Marbling in Wagyu x Limousin F2 Crosses. *Acta Agriculturae Slovenica*. 86:99-102.

#### **0706 GERM CELL AND EMBRYO DEVELOPMENT AND MANIPULATION FOR THE IMPROVEMENT OF LIVESTOCK**

Wu, X.-L., M.D. MacNeil, S. De, Q.-J. Xiao, J.J. Michal, C.T. Gaskins, J.J. Reeves, J.R. Busboom, R.W. Wright Jr., and Z. Jiang. 2005. Evaluation of Candidate Gene Effects for Beef Backfat via Bayesian Model Selection. *Genetica*. 125:103-113.

Jiang, Z., T. Kunej, J.J. Michal, C.T. Gaskins, J.J. Reeves, J.R. Busboom, P. Dovc, and R.W. Wright Jr. 2005. Significant Associations of the Mitochondrial Transcription Factor A (TFAM) Promoter Polymorphisms with Marbling and Subcutaneous Fat Depth in Wagyu X Limousin F2 Crosses. *Biochemical and Biophysical Research Communications*. 334:516-523.

#### **0709 MASTITIS RESISTANCE TO ENHANCE DAIRY FOOD SAFETY**

Smith, E.M., L.E. Green, G.F. Medley, H.E. Bird, L.K. Fox, Y.H. Schukken, J.V. Kruze, A.J. Bradley, R.N. Zadoks, and C.G. Dowson. 2005. Multilocus Sequence Typing of Intercontinental Bovine *Staphylococcus aureus* Isolates. *Journal of Clinical Microbiology*. 43:4737-4743.

Fox, L.K., J.H. Kirk, and A. Britten. 2005. *Mycoplasma Mastitis: A Review of Transmission and Control*. *Journal of Veterinary Medicine*. 52:153-160.

Biddle, M.K., L.K. Fox, M.A. Evans, and C.C. Gay. 2005. Pulsed-Field Gel Electrophoresis Patterns of *Mycoplasma* Isolates from various Body Sites in Dairy Cattle with *Mycoplasma Mastitis*. *Journal of the American Veterinary Medical Association*. 227:445-459.

Chang, S.B., G.A. Bohach, S.U. Lee, W.C. Davis, L.K. Fox, W.A. Ferens, K.S. Seo, H.C. Koo, M.H. Kwon, and Y.H. Park. 2005. Immunosuppression by T Regulatory Cells in Cows Infected with *Staphylococcal Superantigen*. *Journal of Veterinary Science*. 6:247-250.

Griffin, K.B., J.J. Michal, L.K. Fox, C.T. Gaskins, and Z. Jiang. 2005. Fine Mapping of the Bovine Chromosome 22q24 Region that Harbors Antimicrobial Genes and a QTL for Somatic Cell Score. *Animal Genetics*. 36:448-450.

#### **0764 ENHANCING THE GLOBAL COMPETITIVENESS OF U.S. MEATS**

Jiang, Z., T. Kunej, J.J. Michal, C.T. Gaskins, J.J. Reeves, J.R. Busboom, P. Dovic, and R.W. Wright Jr. 2005. Significant Associations of the Mitochondrial Transcription Factor A (TFAM) Promoter Polymorphisms with Marbling and Subcutaneous Fat Depth in Wagyu X Limousin F2 Crosses. *Biochemical and Biophysical Research Communications*. 334:516-523.

Purchas, R.W. and J.R. Busboom. 2005 The Effect of Production System and Age on Levels of Iron, Taurine, Carnosine, Coenzyme Q10, and Creatine in Beef Muscles and Liver. *Meat Science*. 70:589-596.

Purchas, R.W., T.W. Knight, and J.R. Busboom. 2005. The Effect of Production System and Age on Concentrations of Fatty Acids in Intramuscular Fat of the Longissimus and Triceps Brachii Muscles of Angus-Cross Heifers. *Meat Science*. 70:597-603.

Wu, X.-L., M.D. MacNeil, S. De, Q.J. Xiao, J.J. Michal, C.T. Gaskins, J.J. Reeves, J.R. Busboom, R.W. Wright Jr., and Z. Jiang. 2005. Evaluation of Candidate Gene Effects for Beef Backfat via Bayesian Model Selection. *Genetica*. 125:103-113.

#### **0858 INVESTIGATION OF FOOD ANIMAL DISEASE PROBLEMS IN THE STATE OF WASHINGTON**

Smith, E.M., L.E. Green, G.F. Medley, H.E. Bird, L.K. Fox, Y.H. Schukken, J.V. Kruze, A.J. Bradley, R.N. Zadoks, and C.G. Dowson. 2005. Multilocus Sequence Typing of Intercontinental Bovine *Staphylococcus aureus* Isolates. *Journal of Clinical Microbiology*. 43:4737-4743.

Fox, L.K., J.H. Kirk, and A. Britten. 2005. *Mycoplasma* Mastitis: A Review of Transmission and Control. *Journal of Veterinary Medicine*. 52:153-160.

Biddle, M.K., L.K. Fox, M.A. Evans, and C.C. Gay. 2005. Pulsed-Field Gel Electrophoresis Patterns of *Mycoplasma* Isolates from various Body Sites in Dairy Cattle with *Mycoplasma* Mastitis. *Journal of the American Veterinary Medical Association*. 227:445-459.

Chang, S.B., G.A. Bohach, S.U. Lee, W.C. Davis, L.K. Fox, W.A. Ferens, K.S. Seo, H. C. Koo, M.H Kwon, and Y.H. Park. 2005. Immunosuppression by T Regulatory Cells in Cows Infected with *Staphylococcal Superantigen*. *Journal of Veterinary Science*. 6:247-250.

Griffin, K.B., J.J. Michal, L.K. Fox, C.T. Gaskins, and J. Jiang. 2005. Fine Mapping of the Bovine Chromosome 22q24 Region that Harbors Antimicrobial Genes and a QTL for Somatic Cell Score. *Animal Genetics*. 36:448-450.

#### **0913 MOLECULAR MECHANISMS REGULATING SKELETAL MUSCLE GROWTH AND DIFFERENTIATION**

Dodson, M.V., M.E. Fernyhough, J.L. Vierck, and G.J. Hausman. 2005. Adipocytes may not be a Terminally Differentiated Cell Type: Implications for Animal Production. *Animal Science*. 80:239-240.

Fernyhough, M., L. Bucci, G. Hausman, J. Antonio, J. Vierck, and M.V. Dodson. 2005. Gaining a Solid Grip on Adipogenesis. *Tissue and Cell*. 37:335-338.

Fernyhough, M.E., D.I. Helterline, J.L. Vierck, G.J. Hausman, R.A. Hill, and M.V. Dodson. 2005. Dedifferentiation of Mature Adipocytes to Form Adipofibroblasts: More than a Possibility. *Adipocytes*. 1:17-24.

Fernyhough, M.E., J.L. Vierck, G.J. Hausman, P.S. Mir, E.K. Okine, and M.V. Dodson. 2005. Primary Adipocyte Culture: Adipocyte Purification Methods may lead to a New Understanding of Adipose Tissue Growth and Development. *Cytotechnology*. 46:163-172.

Kinkel, A.D., M.E. Fernyhough, D.L. Helterline, J.L. Vierck, K.S. Oberg, T.J. Vance, G.J. Hausman, R.A. Hill, and M.V. Dodson. 2005. Oil Red-O stains Non-Adipogenic Cells: A Precautionary Note. *Cytotechnology*. 46:49-56.

Strat, A.L., T.J. Kokta, M.V. Dodson, A. Gertler, Z. Wu, and R.A. Hill. 2005. Early Signaling Interactions between the Insulin and Leptin Pathways in Bovine Myogenic Cells. *Biochemica et Biophysica Acta - Molecular Cell Research*. 1744:164-175.

#### **0957 REPRODUCTIVE PERFORMANCE IN DOMESTIC RUMINANTS**

Oatley, J.M., D.M. de Avila, A. Tibary, J. Wheaton, D.J. McLean, and J.J. Reeves. 2005. Changes in Spermatogenesis and Endocrine Function in the Ram Testis Due to Irradiation and Active Immunization against LHRH. *Journal of Animal Science*. 83:604-612.

#### **4956 STERILIZATION VACCINE FOR CATTLE**

Hernandez, J.A., E.L. Zanella, R. Bogden, D.M. de Avila, C.T. Gaskins, and J.J. Reeves. 2005. Reproductive Characteristics of Grass-Fed, Luteinizing Hormone-Releasing Hormone Immunocastrated *Bos Indicus* Bulls. *Journal of Animal Science*. 83:2901-2907.

Stevens, J.D., J.M. Sosa, D.M. de Avila, J.M. Oatley, K.P. Bertrand, and J.J. Reeves. 2005. Luteinizing Hormone-Releasing Hormone Fusion Protein Vaccines Block Estrous Cycle Activity in Beef Heifers. *Journal of Animal Science*. 83:152-159.

Ulker, H., O. Gokdal, T. Aygun, F. Karakus, M.E. Sakarya, D.M. de Avila, and J.J. Reeves. 2005. Testicular Development, Ultrasonographic, and Histological Appearance of the Testis in Ram Lambs Immunized Against Recombinant LHRH Fusion Proteins. *Animal Reproduction Science*. 86:205-219.

#### **Biological Systems Engineering:**

#### **0371 STUDIES OF USING MICROWAVE AND RADIO FREQUENCY ENERGY IN FOOD SAFETY, PHYTOSANITARY, AND QUARANTINE APPLICATIONS.**

Al-Holy, M., Y. Wang, J. Tang, and B. Rasco. 2005. Dielectric Properties of Salmon (*Oncorhynchus Keta*) and Sturgeon (*Acipenser transmontanus*) Caviar at Radio Frequency (RF) and Microwave (MW) Pasteurization Frequencies. *Journal of Food Engineering*. 70:564-570.

Luechapattanaporn, K., Y. Wang, J. Wang, J. Tang, L.M. Hallberg, and C.P. Dunne. 2005. Sterilization of Scrambled Eggs in Military Polymeric Trays by Radio Frequency Energy. *Journal of Food Science*. 70:288-294.

Sun, T., J. Tang, and J.R. Powers. 2005. Effect of Pectolytic Enzyme Preparations on the Phenolic Composition and Antioxidant Activity of Asparagus Juice. *Journal of Agricultural and Food Chemistry*. 53:42-48.

#### **0450 THE SCIENCE AND ENGINEERING FOR A BIOBASED INDUSTRY AND ECONOMY**

- Chen, S., W. Liao, C. Liu, Z. Wen, R.L. Kincaid, J.H. Harrison, D.C. Elliott, and D.J. Stevens. 2005. Studies into Using Manure in a Biorefinery Concept. *Applied Biochemistry and Biotechnology*. 124:999-1016.
- Demirer, G.N. and S. Chen. 2005. Anaerobic Digestion of Dairy Manure in a Hybrid Reactor with Biogas Recirculation. *World Journal of Microbiology and Biotechnology*. 21:1509-1514.
- Demirer, G.N. and S. Chen. 2005. Two-phase Anaerobic Digestion of Unscreened Dairy Manure. *Process Biochemistry*. 40:3542-3549.
- Liao, W., Z. Wen, S. Hurley, Y. Liu, C. Liu, and S. Chen. 2005. Effects of Hemicellulose and Lignin on Enzymatic Hydrolysis of Cellulose from Dairy Manure. *Applied Biochemistry and Biotechnology*. 124:1017-1030.
- Liu, C., Y. Liu, and S. Chen. 2005. Effects of Nutrient Supplements on Simultaneous Fermentation of Nisin and Lactic Acid from Cull Potatoes. *Applied Biochemistry and Biotechnology*. 122:475-484.
- Liu, Y., Z. Wen, W. Liao, C. Liu, and S. Chen. 2005. Optimization of the Process for the Production of L(+)-Lactic Acid from Cull Potato by *Rhizopus oryzae*. *Engineering in Life Sciences*. 5:343-349.
- Uludag-Demirer, S., G.N. Demirer, and S. Chen. 2005. Ammonia Removal from Anaerobically Digested Dairy Manure by Struvite Precipitation. *Process Biochemistry*. 40:3667-3674.
- Wen, Z., W. Liao, and S. Chen. 2005. Production of Cellulase/(Beta)-Glucosidase by the Mixed Fungi Culture of *Trichoderma reesei* and *Aspergillus phoenicis* on Dairy Manure. *Process Biochemistry*. 40:3087-3094.
- Wen, Z., W. Liao, and S. Chen. 2005. Production of Cellulase by *Trichoderma Reesei* from Dairy Manure. *Bioresource Technology*. 96:491-499.
- Wen, Z., W. Liao, and S. Chen. 2005. Production of Cellulase/(Beta)-Glucosidase by the Mixed Fungi Culture of *Trichoderma reesei* and *Aspergillus phoenicis* on Dairy Manure. *Applied Biochemistry and Biotechnology*. 121:93-104.
- 0467 IMPROVEMENT OF THERMAL AND ALTERNATIVE PROCESSES FOR FOODS**
- Barbosa-Canovas, G.V. and P. Juliano. 2005. Compression and Compaction Characteristics of Selected Food Powders. *Advances in Food Nutrition and Research*. 49:233-307.
- Bendico, S., A R. Marselles-Fontanet, G.V. Barbosa-Canovas, and O. Martin-Belloso. 2005. High Intensity Pulsed Electric Fields and Heat Treatments Applied to a Protease from *Bacillus subtilis*. A Comparison Study of Multiple Systems. *Journal of Food Engineering*. 69:317-323.
- Estrada-Giron, Y., B.G. Swanson, and G.V. Barbosa-Canovas. 2005. Advances in the Use of High Hydrostatic Pressure for Processing Cereal Grains and Legumes. *Trends in Food Science and Technology*. 16:194-203.
- Guerrero-Beltran, J.A., B.G. Swanson, and G.V. Barbosa-Canovas. 2005. High Hydrostatic Pressure Processing of Mango Puree Containing Antibrowning Agents. *Food Science and Technology International*. 11:261-267.
- Guerrero-Beltran, J.A., B.G. Swanson, and G.V. Barbosa-Canovas. 2005. Inhibition of Polyphenoloxidase in Mango Puree with 4-hexylresorcinol, Cysteine and Ascorbic Acid. *Lebensmittel-Wissenschaft und Technologie Journal*. 38:625-630.

Sepulveda, D.R., M.M. Gongora-Nieto, J.A. Guerrero, and G. V. Barbosa-Canovas. 2005. Production of Extended-Shelf Life Milk by Processing Pasteurized Milk with Pulsed Electric Fields. *Journal of Food Engineering*. 67:81-86.

Sepulveda, D.R., M.M. Gongora-Nieto, M.F. San-Martin, and G.V. Barbosa-Canovas. 2005. Influence of Treatment Temperature on the Inactivation of *Listeria innocua* by Pulsed Electric Fields. *Lebensmittel-Wissenschaft und Technologie Journal*. 38:167-172.

Sampedro, F., M. Rodrigo, A. Martinez, D. Rodrigo, and G.V. Barbosa-Canovas. 2005. Quality and Safety Aspects of PEF Application in Milk and Milk Products. *Critical Reviews in Food Science and Nutrition*. 45:25-47.

Tabilo-Munizaga, G. and G.V. Barbosa-Canovas. 2005. Pressurized and Heat-Treated Surimi Gels as Affected by Potato Starch and Egg White: Microstructure and Water-Holding Capacity. *Lebensmittel-Wissenschaft und Technologie Journal*. 38:47-57.

#### **0553 DEVELOPMENT AND APPLICATION OF WATER AND NUTRIENT MODELS FOR THE ANALYSIS OF AGRICULTURAL SYSTEMS**

Kemarian, A.R., C.O. Stockle, and D.R. Huggins. 2005. Barley Transpiration-Use Efficiency. *Agricultural and Forest Meteorology*. 130:1-11.

#### **0554 ENHANCED ANAEROBIC DIGESTION OF ANIMAL MANURE WITH NUTRIENT RECOVERY**

Demirer, G.N. and S. Chen. 2005. Anaerobic Digestion of Dairy Manure in a Hybrid Reactor with Biogas Recirculation. *World Journal of Microbiology and Biotechnology*. 21:1509-1514.

Demirer, G.N. and S. Chen. 2005. Two-Phase Anaerobic Digestion of Unscreened Dairy Manure. *Process Biochemistry*. 40:3542-3549.

Liu, C., Y. Liu, and S. Chen. 2005. Effects of Nutrient Supplements on Simultaneous Fermentation of Nisin and Lactic Acid from Cull Potatoes. *Applied Biochemistry and Biotechnology*. 122:475-484.

Uludag-Demirer, S., G.N. Demirer, and S. Chen. 2005. Ammonia Removal from Anaerobically Digested Dairy Manure by Struvite Precipitation. *Process Biochemistry*. 40:3667-3674.

Wen, Z., W. Liao, and S. Chen. 2005. Production of Cellulase by *Trichoderma Reesei* from Dairy Manure. *Bioresource Technology*. 96:491-499.

#### **0562 RESEARCH AND DEVELOPMENT FOR BIOMASS PROCESSING AND BIOPRODUCT PRODUCTION**

Chen, S., W. Liao, C. Liu, Z. Wen, R.L. Kincaid, J.H. Harrison, D.C. Elliott, and D.J. Stevens. 2005. Studies into Using Manure in a Biorefinery Concept. *Applied Biochemistry and Biotechnology*. 124:999-1016.

Demirer, G.N. and S. Chen. 2005. Anaerobic Digestion of Dairy Manure in a Hybrid Reactor with Biogas Recirculation. *World Journal of Microbiology and Biotechnology*. 21:1509-1514.

Demirer, G.N. and S. Chen. 2005. Two-Phase Anaerobic Digestion of Unscreened Dairy Manure. *Process Biochemistry*. 40:3542-3549.

Liao, W., Z. Wen, S. Hurley, Y. Liu, C. Liu, and S. Chen. 2005. Effects of Hemicellulose and Lignin on Enzymatic Hydrolysis of Cellulose from Dairy Manure. *Applied Biochemistry and Biotechnology*. 124:1017-1030.

Liu, C., Y. Liu, and S. Chen. 2005. Effects of Nutrient Supplements on Simultaneous Fermentation of Nisin and Lactic Acid from Cull Potatoes. *Applied Biochemistry and Biotechnology*. 122:475-484.

Liu, Y., Z. Wen, W. Liao, C. Liu, and S. Chen. 2005. Optimization of the Process for the Production of L(+)-Lactic Acid from Cull Potato by *Rhizopus Oryzae*. *Engineering in Life Sciences*. 5:343-349.

Uludag-Demirer, S., G.N. Demirer, and S. Chen. 2005. Ammonia Removal from Anaerobically Digested Dairy Manure by Struvite Precipitation. *Process Biochemistry*. 40:3667-3674.

Wen, Z., W. Liao, and S. Chen. 2005. Production of Cellulase/(Beta)-Glucosidase by the Mixed Fungi Culture *Trichoderma reesei* and *Aspergillus phoenicis* on Dairy Manure. *Process Biochemistry*. 40:3087-3094.

Wen, Z., W. Liao, and S. Chen. 2005. Production of Cellulase by *Trichoderma reesei* from Dairy Manure. *Bioresource Technology*. 96:491-499.

Wen, Z., W. Liao, and S. Chen. 2005. Production of Cellulase/(Beta)-Glucosidase by the Mixed Fungi Culture of *Trichoderma reesei* and *Aspergillus phoenicis* on Dairy Manure. *Applied Biochemistry and Biotechnology*. 121:93-104.

#### **0573 PHYSICAL PROPERTIES OF FOOD POWDERS**

Barbosa-Canovas, G.V. and P. Juliano. 2005. Compression and Compaction Characteristics of Selected Food Powders. *Advances in Food Nutrition and Research*. 49:233-307.

#### **0990 ASSURING FRUIT AND VEGETABLE QUALITY AND SAFETY THROUGH THE HANDLING AND MARKETING CHAIN**

Drake, S.R., J.D. Hansen, D.C. Elfving, J. Tang, and S. Wang. 2005. Hot Water to Control Codling Moth in Sweet Cherries: Efficacy and Quality. *Journal of Food Quality*. 28:361-376.

Hansen, J.D., S.R. Drake, M.L. Heidt, M.A. Watkins, J. Tang, and S. Wang. 2005. Radio Frequency-Hot Water Treatments for Postharvest Control of Codling Moth in 'Bing' Sweet Cherries. *Hortechonology*. 15:613-616.

Nindo, C.I., J. Tang, J.R. Powers, and P. Singh. 2005. Viscosity of Blueberry and Raspberry Juices for Processing Applications. *Journal of Food Engineering*. 69:343-350.

#### **4674 PLANNING WORKSHOP— EMERGING FOOD PROCESSING TECHNOLOGIES: FROM LAB BENCH TO THE TABLE**

Bendico, S., A.R. Marselles-Fontanet, G.V. Barbosa-Canovas, and O. Martin-Belloso. 2005. High Intensity Pulsed Electric Fields and Heat Treatments Applied to a Protease from *Bacillus subtilis*. A Comparison Study of Multiple Systems. *Journal of Food Engineering*. 69:317-323.

Estrada-Giron, Y., B.G. Swanson, and G.V. Barbosa-Canovas. 2005. Advances in the Use of High Hydrostatic Pressure for Processing Cereal Grains and Legumes. *Trends in Food Science and Technology*. 16:194-203.

Guerrero-Beltran, J.A., B.G. Swanson, and G.V. Barbosa-Canovas. 2005. High Hydrostatic Pressure Processing of Mango Puree Containing Antioxidants. *Food Science and Technology International*. 11:261-267.

Guerrero-Beltran, J.A., B.G. Swanson, and G.V. Barbosa-Canovas. 2005. Inhibition of Polyphenoloxidase in Mango Puree with 4-Hexylresorcinol, Cysteine, and Ascorbic Acid. *Lebensmittel-Wissenschaft und -Technologie Journal*. 38:625-630.

Sampedro, F., M. Rodrigo, A. Martinez, D. Rodrigo, and G.V. Barbosa-Canovas. 2005. Quality and Safety Aspects of PEF Application in Milk and Milk Products. *Critical Reviews in Food Science and Nutrition*. 45:25-47.

Sepulveda, D.R., M.M. Gongora-Nieto, M.F. San-Martin, and G.V. Barbosa-Canovas. 2005. Influence of Treatment Temperature on the Inactivation of *Listeria innocua* by Pulsed Electric Fields. *Lebensmittel-Wissenschaft und Technologie Journal*. 38:167-172.

Sepulveda, D.R., M.M. Gongora-Nieto, J.A. Guerrero, and G.V. Barbosa-Canovas. 2005. Production of Extended-Shelf Life Milk by Processing Pasteurized Milk with Pulsed Electric Fields. *Journal of Food Engineering*. 67:81-86.

Tabilo-Munizaga, G. and G.V. Barbosa-Canovas. 2005. Pressurized and Heat-Treated Surimi Gels as Affected by Potato Starch and Egg White: Microstructure and Water-Holding Capacity. *Lebensmittel-Wissenschaft und Technologie Journal*. 38:47-57.

### **5378 RADIO FREQUENCY ENERGY AS AN ALTERNATIVE TO METHYL BROMIDE FUMIGATION FOR CONTROLLING PESTS IN STONE FRUITS AND NUTS**

Birla, S.L., S. Wang, J. Tang, J. Fellman, D. Mattinson, and S. Lurie. 2005. Quality of Oranges as Influenced by Potential Radio Frequency Heat Treatments against Mediterranean Fruit Flies. *Postharvest Biology and Technology*. 38:66-79.

Wang S., J.A. Johnson, J. Tang, and X. Yin. 2005. Heating Condition Effects on Thermal Resistance of Fifth-Instar Navel Orangeworm (*Lepidoptera: Pyralidae*). *Journal of Stored Products Research*. 41:469-478.

Wang S., J. Yue, J. Tang, and B. Chen. 2005. Mathematical Modeling of Heating Uniformity for In-Shell Walnuts Subjected to Radio Frequency Treatments with Intermittent Stirrings. *Postharvest Biology and Technology*. 35:97-107.

### **7319 MODELING HYDROLOGY AND EROSION UNDER WINTER CLIMATIC CONDITIONS OF THE PACIFIC NORTHWEST: MODIFYING WEPP**

Lewis, S.A., J.Q. Wu, and P.R. Robichaud. 2005. Assessing Burn Severity and Comparing Soil Water Repellency, Hayman Fire, Colorado. *Hydrological Processes*. 20:1-16.

### **Center for Precision Agriculture:**

### **0551 ADVANCING PRECISION AGRICULTURAL SYSTEMS THROUGH AUTOMATION, SENSING, CONTROL, AND INFORMATION SYSTEMS**

Berry, J.K., J.A. Delgado, F.J. Pierce, and R. Khosla. 2005. Applying Spatial Analysis for Precision Conservation across the Landscape. *Journal of Soil Water Conservation*. 60:363-370.

Delgado, J.A., C.A. Cox, F.J. Pierce, and M.G. Dosskey. 2005. Introduction - Precision Conservation in North America. *Journal of Soil Water Conservation*. 60:340-341.

Elwadie, M., F.J. Pierce, and J.Q. Elwadie. 2005. Remote Sensing of Canopy Dynamics and Biophysical Variables Estimation for Corn in Michigan. *Agronomy Journal*. 97:99-105.

Sudduth, K.A., N.R. Kitchen, W.J. Wiebold, W.D. Batchelor, G.A. Bollero, D.G. Bullock, D.E. Clay, H.L. Palm, F.J. Pierce, R.T. Schuler, and K.D. Thelen. 2005. Relating Apparent Electrical Conductivity to Soil Properties across the North-Central USA. *Computers and Electronics in Agriculture*. 46:263-283.

**Center for Sustaining Agriculture and Natural Resources:**

**0588 AND 0619 ORGANIC CROPPING RESEARCH FOR THE NORTHWEST**

- Carpenter-Boggs, L. 2005. Diving into Compost Tea. *Biocycle*. 46:61-62.
- Murphy K., D. Lammer, S. Lyon, B. Carter, and S.S. Jones. 2005. Breeding for Organic and Low-Input Farming Systems: An Evolutionary Participatory Breeding Method for Inbred Cereal Grains. *Renewable Agriculture and Food Systems*. 20:45-55.

**Community and Rural Sociology:**

**0942 HOW VISUAL DESIGN AND LAYOUT INFLUENCES ANSWERS TO SELF-ADMINISTERED PAPER AND INTERNET QUESTIONNAIRES**

- Dillman, D.A. and L.M. Christian. 2005. Survey Mode as a Source of Instability across Surveys. *Field Methods*. 17:30-52.
- Dillman, D.A., A. Gertseva, and T. Mahon-Haft. 2005. Achieving Usability in Establishment Surveys through the Application of Visual Design Principles. *Journal of Official Statistics*. 21:183-214.
- Redline, C.D., D.A. Dillman, L. Carley-Baxter, and R.H. Creedy. 2005. Factors that Influence Reading and Comprehension of Branching Instructions in Self-Administered Questionnaires. *Journal of German Statistical Society*. 89:21-38.

**0981 CHANGING SOCIAL DYNAMICS IN WASHINGTON'S RURAL AREAS**

- Kirschner, A.R. 2005. Computer Services and the Digital Divide: Trends in the Pacific Northwest. *The Social Science Journal*. 42:541-554.

**Crop and Soil Sciences:**

**0128 MANAGEMENT OF GRAIN QUALITY AND SECURITY FOR WORLD MARKETS**

- Cramer, A.-C. J., D.S. Mattinson, J.K. Fellman, and B.-K. Baik. 2005. Analysis of Volatile Compounds from Various Types of Barley Cultivars. *Journal of Agricultural Food Chemistry*. 53:7526-7531.
- Quinde-Axtell, Z., S.E. Ullrich, and B.-K. Baik. 2005. Genotypic and Environmental Effects on Color and Discoloration Potential of Barley in Food Products. *Cereal Chemistry*. 82:711-716.

**0152 CHARACTERIZING MASS AND ENERGY TRANSPORT AT DIFFERENT SCALES**

- Czigany, S., M. Flury, and J.B. Harsh. 2005. Colloid Stability in Vadose Zone Hanford Sediments, *Environmental Science Technology*. 39:1506-1512.
- Czigany, S., M. Flury, J.B. Harsh, B.C. Williams, and J.M. Shira. 2005. Suitability of Fiberglass Wicks to Sample Colloids from Vadose Zone Pore Water. *Vadose Zone Journal*. 4:175-183.
- Fuentes, J.-P. and M. Flury. 2005. Hydraulic Conductivity of a Silt Loam Soil as Affected by Sample Length. *American Society of Agricultural Engineers*. 48:191-196.
- Jerez, J., M. Flury, J. Shang, and Y. Deng. 2005. Coating of Silica Sand with Aluminosilicate Clays. *Journal of Colloid and Interface Science*. 294:155-164.
- Mashal, K., J.B. Harsh, M. Flury, and A.R. Felmy. 2005. Analysis of Precipitates from Reactions of Hyperalkaline Solutions with Soluble Silica. *Applied Geochemistry*. 20:1357-1367.

Mashal, K., J.B. Harsh, and M. Flury. 2005. Clay Mineralogical Transformations over Time in Hanford Sediments Reacted with Simulated Tank Waste. *Soil Science Society of America Journal*. 69:531-538.

Wendling, L.A., J.B. Harsh, C.D. Palmer, M.A. Hamilton, H. Dion, J.S. Boyle, and M. Flury. 2005. Rhizosphere Effects on Cesium Fixation Sites of Soil Containing Micaceous Clays. *Soil Science Society of American Journal*. 69:1652-1657.

Wendling, L.A., J.B. Harsh, T.E. Ward, C.D. Palmer, M.A. Hamilton, J.S. Boyle, and M. Flury. 2005. Cesium Desorption from Illite as Affected by Exudates from Rhizosphere Bacteria. *Environmental Science Technology*. 39:4505-4512.

#### **0232 BREEDING AND GENETICS OF WINTER WHEAT**

Li, H.J., M. Arterburn, S.S. Jones, and T.D. Murray. 2005. Resistance to Eyespot of Wheat, Caused by *Tapesia yallundae*, Derived from *Thinopyrum intermedium* Homoeologous Group 4 Chromosome. *Theoretical and Applied Genetics*. 111: 932-940.

Murphy K., D. Lammer, S. Lyon, B. Carter, and S.S. Jones. 2005. Breeding for Organic and Low-Input Farming Systems: An Evolutionary Participatory Breeding Method for Inbred Cereal Grains. *Renewable Agriculture and Food Systems*. 20: 45-55.

#### **0250 CROPPING SYSTEMS RESEARCH FOR LOW-PRECIPITATION DRYLAND IN EASTERN WASHINGTON**

Schillinger, W.F. 2005. Tillage Method and Sowing Rate Relations for Dryland Wheat, Barley, and Oat. *Crop Science*. 45:2636-2643.

#### **0267 COLLOID MOBILIZATION AND TRANSPORT THROUGH THE VADOSE ZONE**

Chen, G. and M. Flury. 2005. Retention of Mineral Colloids in Unsaturated Porous Media as Related to Their Surface Properties. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*. 256:207-216.

Chen, G., M. Flury, J.B. Harsh, and P.C. Lichtner. 2005. Colloid-Facilitated Transport of Cesium in Variably-Saturated Hanford Sediments. *Environmental Science and Technology*. 39:3435-3442.

Czigany, S., M. Flury, and J.B. Harsh. 2005. Colloid Stability in Vadose Zone Hanford Sediments. *Environmental Science and Technology*. 39:1506-1512.

Czigany, S., M. Flury, J.B. Harsh, B.C. Williams, and J.M. Shira. 2005. Suitability of Fiberglass Wicks to Sample Colloids from Vadose Zone Pore Water. *Vadose Zone Journal*. 4:175-183.

Mashal, K., J.B. Harsh, M. Flury, and A.R. Felmy. 2005. Analysis of Precipitates from Reactions of Hyperalkaline Solutions with Soluble Silica. *Applied Geochemistry*. 20:1357-1367.

Mashal, K., J.B. Harsh, and M. Flury. 2005. Clay Mineralogical Transformations over Time in Hanford Sediments Reacted with Simulated Tank Waste. *Soil Science Society of America Journal*. 69:531-538.

Mon, J., Y. Deng, M. Flury, and J.B. Harsh. 2005. Cesium Incorporation and Diffusion in Cancrinite, Sodalite, Zeolite, and Allophane. *Microporous and Mesoporous Materials*. 86:277-286.

#### **0323 REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS FOR LAND MANAGEMENT**

Daughtry, C.S.T., E.R. Hunt, Jr., P.C. Doraiswamy, and J.E. McMurtrey III. 2005. Remote Sensing the Spatial Distribution of Crop Residue. *Agronomy Journal*. 97:864-871.

### **0332 EVALUATION AND MANAGEMENT OF TURFGRASS SPECIES AND CULTIVARS**

Johnston, W.J., C.T. Golob, and J.P. Schnurr. 2005. Rapid, Non-Destructive Method for Separating Turfgrass Clippings from Topdressing Sand Using an Inclined Vibrating Deck. *International Turfgrass Society Research Journal*. 10:952-955.

Poole, G.J., W.J. Johnston, and R.C. Johnson. 2005. Regional Climatic Characterization of Pacific Northwest Greens-Type *Poa annua* L. *International Turfgrass Society Research Journal*. 10:565-571.

Ricard, T.S. and W.J. Johnston. 2005. Correlation Field and Controlled-Environment Studies of Pink Snow Mold Resistance in Pacific Northwest, USA, Greens-Type *Poa annua* L. *International Turfgrass Society Research Journal*. 10:206-212.

### **0334 IMPROVING SPRING WHEAT VARIETIES FOR THE PACIFIC NORTHWEST**

Feng, P.C.C., G.J. Baley, W.P. Clinton, G.J. Bunkers, M.F. Alibhai, T.C. Paulitz, and K.K. Kidwell. 2005. Glyphosate Inhibits Rust Diseases in Glyphosate-Resistant Wheat and Soybean. *Proceedings of the National Academy of Science*. 102:17290-17295.

### **0353 SOIL QUALITY CHANGES WITH NO-TILL MANAGEMENT ADOPTION FOR WIND EROSION CONTROL**

Mohammad, M., W.L. Pan, and A.C. Kennedy. 2005. Chemical Alterations in the Rhizosphere of Mycorrhizal-Infected Wheat Roots. *Mycorrhiza*. 15:327-332.

### **0373 CARBON AND NITROGEN CYCLING AND MANAGEMENT IN ALTERNATIVE CROPPING SYSTEMS**

Mohammad, M.J., W.L. Pan, and A.C. Kennedy. 2005. Chemical Alteration of the Rhizosphere of Mycorrhizal-Colonized Wheat Roots. *Mycorrhiza*. 15:259-266.

### **0385 SORPTION AND TRANSPORT OF Cs IN SOILS**

Chen, G., M. Flury, J.B. Harsh, and P.C. Lichtner. 2005. Colloid-Facilitated Transport of Cesium in Variably-Saturated Hanford Sediments. *Environmental Science Technology*. 39:3435-3442.

Czigany, S., M. Flury, and J.B. Harsh. 2005. Colloid Stability in Vadose Zone Hanford Sediments. *Environmental Science Technology*. 39:1506-1512.

Czigany, S., M. Flury, J.B. Harsh, B.C. Williams, and J.M. Shira. 2005. Suitability of Fiberglass Wicks to Sample Colloids from Vadose Zone Pore Water. *Vadose Zone Journal*. 4:175-183.

Mon, J., Y. Deng, M. Flury, and J.B. Harsh. 2005. Cesium Incorporation and Diffusion in Cancrinite, Sodalite, Zeolite, and Allophane. *Microporous and Mesoporous Materials*. 86:277-286.

Wendling, L.A., J.B. Harsh, C.D. Palmer, M.A. Hamilton, H. Dion, J.S. Boyle, and M. Flury. 2005. Rhizosphere Effects on Cesium Fixation Sites of Soil Containing Micaceous Clays. *Soil Science Society of America Journal*. 69:1652-1657.

Wendling, L.A., J.B. Harsh, T.E. Ward, C.D. Palmer, M.A. Hamilton, J.S. Boyle, and M. Flury. 2005. Cesium Desorption from Illite as Affected by Exudates from Rhizosphere Bacteria. *Environmental Science Technology*. 39:4505-4512.

### **0410 A COMPARATIVE ANALYSIS OF THE SUSTAINABILITY OF FARMING SYSTEMS**

Peck, G.M., C. Richter, P.K. Andrews, and J.P. Reganold. 2005. Internationalization of the Organic Fruit Market: The Case of Washington State Organic Apple Exports to the European Union. *Renewable Agriculture and Food Systems*. 20:101-112.

Reeve, J.R., L. Carpenter-Boggs, J.P. Reganold, A.L. York, G. McGourty, and L.P. McCloskey. 2005. Soil and Winegrape Quality in Biodynamically and Organically Managed Vineyards. *American Journal of Enology and Viticulture*. 56:367-376.

**0552, 0578, AND 0618 PM-10 PARTICULATE EMISSION PREDICTION AND CONTROL FROM AGRICULTURAL LANDS IN THE PACIFIC NORTHWEST**

Chandler, D.G., K.E. Saxton, and A.J. Busacca. 2005. Predicting Wind Erodibility of Loessial Soils in the Pacific Northwest by Particle Sizing. *Arid Land Research and Management*. 19:13-27.

Feng, G. and B. Sharratt. 2005. Sensitivity Analysis of Soil and PM10 loss in WEPS Using LHS-OAT Method. *Transactions of American Society of Agricultural Engineers*. 48:1409-1420.

Mohammad, M., W.L. Pan, and A.C. Kennedy. 2005. Chemical Alterations in the Rhizosphere of Mycorrhizal-Infected Wheat Roots. *Mycorrhiza*. 15:327-332.

Schillinger, W.F. 2005. Tillage Method and Sowing Rate Relations for Dryland Wheat, Barley, and Oat. *Crop Science*. 45:2636-2643.

Sweeney, M.R., A.J. Busacca, and D.R. Gaylord. 2005. Topographic and Climatic Influences on Accelerated Loess Accumulation since the Last Glacial Maximum in the Palouse, Pacific Northwest, USA. *Quaternary Research*. 63:261-273.

Young, D.L., E.G. Smith, and A. Smith. 2005. The Sweet Smell of Subsidies Revisited. *Choices*. 20:207-209.

**0581 THE CHEMICAL AND PHYSICAL NATURE OF PARTICULATE MATTER AFFECTING AIR, WATER, AND SOIL QUALITY**

Mashal, K., J.B. Harsh, M. Flury, and A.R. Felmy. 2005. Analysis of Precipitates from Reactions of Hyperalkaline Solutions with Soluble Silica. *Applied Geochemistry*. 20:1357-1367.

Mashal, K., J.B. Harsh, and M. Flury. 2005. Clay Mineralogical Transformations over Time in Hanford Sediments Reacted with Simulated Tank Waste. *Soil Science Society of America Journal*. 69:531-538.

Wendling, L.A., J.B. Harsh, C.D. Palmer, M.A. Hamilton, H. Dion, J.S. Boyle, and M. Flury. 2005. Rhizosphere Effects on Cesium Fixation Sites of Soil Containing Micaceous Clays. *Soil Science Society of America Journal*. 69:1652-1657.

Wendling, L.A., J.B. Harsh, T.E. Ward, C.D. Palmer, M.A. Hamilton, J.S. Boyle, and M. Flury. 2005. Cesium Desorption from Illite as Affected by Exudates from Rhizosphere Bacteria. *Environmental Science Technology*. 39:4505-4512.

**0598 EOLIAN SOILS, GLOBAL CHANGE, AND WASHINGTON AGRICULTURE**

Chandler, D.G., Saxton, K.E., and A.J. Busacca. 2005. Predicting Wind Erodibility of Loessial Soils in the Pacific Northwest by Particle Sizing. *Arid Land Research and Management*. 19:13-27.

Stevenson, B.A., E.F. Kelly, E.V. McDonald, and A.J. Busacca. 2005. The Stable Carbon Isotope Composition of Soil Organic Carbon and Pedogenic Carbonates along a Bioclimatic Gradient in the Palouse Region, Washington State, USA. *Geoderma*. 124:37-47.

Sweeney, M.R., A.J. Busacca, and D.R. Gaylord. 2005. Topographic and Climatic Influences on Accelerated Loess Accumulation since the Last Glacial Maximum in the Palouse, Pacific Northwest, USA. *Quaternary Research*. 63:261-273.

#### 1006 BREEDING AND GENETICS OF BARLEY

Prada, D., I. Romagosa, S.E. Ullrich, and J.L. Molina-Cano. 2005. A Centromeric Region on Chromosome 6(6H) Affects Dormancy and ABA Sensitivity in an Induced Mutant in Barley. *Journal of Experimental Botany*. 56:47-54.

Quinde-Axtell, Z., S.E. Ullrich, and B.-K. Baik. 2005. Genotypic and Environmental Effects on Color and Discoloration Potential of Barley in Food Products. *Cereal Chemistry*. 82:711-716.

#### 1134 PLANT GENETIC RESOURCE CONSERVATION AND UTILIZATION

Coyne, C.J., A.F. Brown, G.M. Timmerman-Vaughan, K.E. McPhee, and M.A. Grusak. 2005. Refined USDA-ARS Pea Core Collection Based on 26 Quantitative Traits. *Pisum Genetics*. 37:3-6.

Coyne, C.J., L. Razai, B.-K. Baik, and M.A. Grusak. 2005. Variation for Pea Seed Protein Concentration in USDA Pisum Core Collection. *Pisum Genetics*. 37:7-11.

Dugan, F.M., S.L. Lupien, M. Hernandez-Bello, T.L. Peever, and W. Chen. 2005. Fungi Resident in Chickpea Debris and Their Suppression of Growth and Reproduction of *Didymella Rabiei* under Laboratory Conditions. *Journal of Phytopathology*. 153: 431-439.

Glawe, D.A., F.M. Dugan, Y. Liu, and J.D. Rogers. 2005. First Record and Characterization of a Powdery Mildew on a Member of the *Juncaginaceae*: *Leveillula taurica* on *Triglochin maritima*. *Mycological Progress*. 4:291-298.

Greene, S.L. 2005. Collecting Legumes in the Largest Remote Region Remaining in the Lower 48 States. *Aridus*. 17:1-5.

Hartney, S., D.A. Glawe, F. Dugan, and J. Ammirati. 2005. First Report of Powdery Mildew on *Corylus avellana* Caused by *Phyllactinia guttata* in Washington State. Online. *Plant Health Progress*. doi:10.1094/PHP-2005-1121-01-BR.

Loridon, K., K.E. McPhee, J. Morin, P. Dubreuil, M.L. Pilet-Nayel, G. Aubert, C. Rameau, A. Baranger, C.J. Coyne, I. Lejeune-Henault, and J. Burstin. 2005. Microsatellite Marker Polymorphism and Mapping in Pea (*Pisum sativum* L.). *Theoretical and Applied Genetics*. 111:1022-1031.

Okubara, P.A., K.E. Keller, M.T. McClendon, K.E. McPhee, D.A. Inglis, and C.J. Coyne. 2005. Y15\_999Fw, a Dominant SCAR Marker Linked to the Fusarium Wilt Race 1 (Fw) Resistance Gene in Pea. *Pisum Genetics*. 37:32-35.

Pappu, H.R., B.C. Hellier, and F.M. Dugan. 2005. First Report of Onion Yellow Dwarf Virus, Leek Yellow Stripe Virus and Garlic Common Latent Virus in Garlic in Washington State. *Plant Disease*. 89:205.

Pilet-Nayel M.L., F.J. Muehlbauer, J.M. Kraft, R.J. McGee, A. Baranger, and C.J. Coyne. 2005. Consistent QTLs in Pea for Partial Resistance to *Aphanomyces euteiches* Isolates from the United States and France. *Phytopathology*. 95:1287-1293.

Poole, G.J., W.J. Johnston, and R.C. Johnson. 2005. International Turfgrass Society Research Journal. 10:565-571.

**1790 BREEDING DRY PEA, LENTIL, AND CHICKPEA GERMPLASM FOR STRESS TOLERANCE, DISEASE RESISTANCE, AND QUALITY**

Chen, W., R. Short, and F. Muehlbauer. 2005. Field Evaluation of Chemicals for Control of Ascochyta Blight of Chickpea, 2004. Fungicide and Nematicide Tests. The American Phytopathological Society. Online. Report 60:FC141. DOI: 10.1094/FN60.

**1851 ENHANCING WINTER WHEAT FOR COLDHARDINESS; STUDIES TO INCREASE WINTER HARDINESS.**

Skinner, D.Z., B.S. Bellinger, S. Halls, K.H. Baek, K. Garland-Campbell, and W.F. Siems. 2005. Phospholipid Acyl Chain and Phospholipase Dynamics during Cold Acclimation of Winter Wheat. Crop Science. 45:1858-1867.

Skinner, D.Z., P.A. Okubara, K.H. Baek, and D.R. Call. 2005. Long Oligonucleotide Microarrays in Wheat: Evaluation of Hybridization Signal Amplification and an Oligonucleotide-Design Computer Script. Functional and Integrative Genomics. 5:70-79.

**4449 AND 8449 MOLECULAR CHARACTERIZATION OF A MAJOR GENE-RICH REGION OF WHEAT**

Dilbirligi, M., M. Erayman, and K.S. Gill. 2005. Analysis of Recombination and Gene Distribution in 2L1.0 Region of Wheat (*Triticum aestivum* L.) and Barley (*Hordeum vulgare* L.). Genomics. 86:47-54.

**7232 LIFE AND DEATH IN PLANTS: STUDIES ON PERENNIAL WHEAT AS A SUSTAINABLE ALTERNATIVE CROPPING SYSTEM**

Li, H.J., M. Arterburn, S.S. Jones, and T.D. Murray. 2005. Resistance to Eyespot of Wheat, Caused by *Tapesia yellundae*, Derived from *Thinopyrum intermedium* Homoeologous Group 4 Chromosome. Theoretical and Applied Genetics. 111:932-940.

Murphy, K., D. Lammer, S. Lyon, B. Carter, and S.S. Jones. 2005. Breeding for Organic and Low-Input Farming Systems: An Evolutionary Participatory Breeding Method for Inbred Cereal Grains. Renewable Agriculture and Food Systems. 20:45-55.

**7703 SUSTAINABILITY OF THREE APPLE PRODUCTION SYSTEMS: ORGANIC, CONVENTIONAL, AND INTEGRATED**

Peck, G.M., C. Richter, P.K. Andrews, and J.P. Reganold. 2005. Internationalization of the Organic Fruit Market: The Case of Washington State's Organic Apple Exports to the European Union. Renewable Agriculture and Food Systems. 20:101-112.

**Entomology:**

**0121 BIOLOGICAL CONTROL IN PEST MANAGEMENT SYSTEMS OF PLANTS**

Wilson, L., E.E. Sing, G.L. Piper, R.W. Hansen, R. DeClerk-Floate, D.K. MacKinnon, and C.B. Randall. 2005. Biology and Biological Control of Dalmatian and Yellow Toadflax. USDA-FS Forest Health Technology Enterprise Team. 13:116.

**0405 POTENTIAL OF INSECT GROWTH REGULATORS FOR CONTROLLING INSECT PESTS OF THE PACIFIC NORTHWEST**

Pszczolkowski, M.A. and J.J. Brown. 2005. Single Experience Learning in Host Fruit Selection by *Lepidopteran* Larvae. Physiology and Behavior. 86:168-175.

**0430 BIOLOGICAL CONTROL OF  
INVASIVE TOADFLAXES IN  
WASHINGTON**

Wilson, L., E.E. Sing, G.L. Piper, R.W. Hansen, R. DeClerk-Floate, D.K. MacKinnon, and C.B. Randall. 2005. Biology and Biological Control of Dalmatian and Yellow Toadflax. USDA-FS Forest Health Technology Enterprise Team. 13:116.

**0455 BIOLOGICAL DIVERSITY STUDIES OF  
ARTHROPOD TAXA**

Johnson, D.G., B.C. Carstens, W.S. Sheppard, and R.S. Zack. 2005. Phylogeny of Leafhopper Subgenus *Errhomus* (*Erronus*) (*Hemiptera: Cicadellidae*) Based on Mitochondrial DNA Sequences. Annals of the Entomological Society of America. 98:165-172.

**0589 AND 0604 MOLECULAR GENETICS  
OF HONEY BEE SUBSPECIES,  
SELECTION AND BREEDING OF NEW  
WORLD POPULATIONS**

Arias, M.C., and W.S. Sheppard. 2005. Phylogenetic Relationships of Honey Bees (*Hymenoptera: Apinae: Apini*) Inferred from Nuclear and Mitochondrial DNA Sequence Data. Molecular Phylogenetics and Evolution. 37:25-35.

**3499 ALTERNATIVE PREY AND  
BIOCONTROL BY GENERALIST  
PREDATORS**

Koss, A.M. and W.E. Snyder. 2005. Alternative Prey Disrupt Biocontrol by a Guild of Generalist Predators. Biological Control. 32:243-251.

Koss, A.M., A.S. Jensen, A. Schreiber, K.S. Pike, and W.E. Snyder. 2005. A Comparison of Predator and Pest Communities in Washington Potato Fields Treated with Broad-Spectrum, Selective or Organic Insecticides. Environmental Entomology. 34:87-95.

**Field Diseases Investigative Unit:**

**0261 ENTERIC DISEASES OF SWINE AND  
CATTLE: PREVENTION, CONTROL,  
AND FOOD SAFETY**

Bae, W., K.N. Kaya, D.D. Hancock, D.R. Call, Y.H. Park, and T.E. Besser. 2005. Prevalence and Antimicrobial Resistance of *Thermophilic campylobacter* sp. from Cattle Farms in the Northwestern United States. Applied and Environmental Microbiology. 71:169.

Borucki, M.K., J. Reynolds, D.R. Call, T. Ward, B. Page, and J. Kadushin. 2005. Suspension Arrays for Direct and High Throughput Subtyping of *Listeria monocytogenes* from Genomic DNA. Journal of Clinical Microbiology. 43:3255.

Call, D.R. 2005. Challenges and Opportunities for Pathogen Detection Using DNA Microarrays. Critical Reviews in Microbiology. 31:91.

Wright, J.G., L.A. Tengelsen, K.E. Smith, J.B. Bender, R.K. Frank, J.H. Grendon, D.H. Rice, A.M. Thiessen, C.J. Gilbertson, S. Sivapalasingam, T.J. Barrett, T.E. Besser, D.D. Hancock, and F.J. Angulo. 2005. Multidrug-Resistant *Salmonella typhimurium* in Four Animal Facilities. Emerging Infectious Diseases. 11:1235.

Besser, T.E., J.T. Lejeune, D.H. Rice, J. Berg, R.P. Stilborn, K.N. Kaya, W. Bae, and D.D. Hancock. 2005. Increasing Prevalence of *Campylobacter jejuni* in Feedlot Cattle through the Feeding Period. Applied and Environmental Microbiology. 71:5752.

**Food and Environmental Quality Lab:**

**0457 UNDERSTANDING TRANSPORT AND  
FATE OF PESTICIDE MANAGEMENT  
CHEMICALS IN AIR**

Tomaszewska, E., V.R. Hebert, J. Brunner, V. Jones, and M. Doerr. 2005. Evaluating Chemical Release from Commercial Codling Moth Mating Disruption Dispensers. *Journal of Agricultural and Food Chemistry*. 53:2399-2405.

### **Food Science and Human Nutrition:**

#### **0305 IMPROVING THE SAFETY AND QUALITY OF FOOD**

Lin, M., M. al-Holy, S.S. Chang, Y. Huang, A.G. Cavinato, D.H. Kang, and B.A. Rasco. 2005. Rapid Discrimination of Different *Alicyclobacillus* Isolates in Apple Juice by Fourier Transform Infrared Spectroscopy. *International Journal of Food Microbiology*. 105:369-376.

#### **0331 DIETARY ASTANZIN IN INFLAMMATORY DISEASE: A RHEUMATOID ARTHRITIS MODEL IN DOGS AND CATS**

Ritzenthaler, K.L., M.K. McGuire, T.D. Shultz, M.A. McGuire, J. Williams, N. Dasgupta, and B.P. Chew. 2005. Consumption of Conjugated Linoleic Acid (CLA) from CLA-Enriched Cheese Does Not Alter Milk Fat or Immunity in Lactating Women. *Journal of Nutrition*. 135:422-430.

#### **0369 DEVELOPMENT OF AN NEW RAPID METHOD FOR THE ESTIMATION OF *ESCHERICHIA COLI* IN FOODS**

Chang, S.S. and D.H. Kang. 2005. Development of Novel *Alicyclobacillus* spp. Isolation Medium. *Journal of Applied Microbiology*. 99:1051-1060.

Dancer, G.I. and D.H. Kang. 2005. Estimation of Microbiological Quality of Egg Using Chromogenic *Limulus* Amoebocyte Lysate Endpoint Assay. *Journal of Rapid Methods and Automation in Microbiology*. 13:29-36.

Oh, S.W. and D.H. Kang. 2005. Enumeration of *Enterobacter sakazakii* in Infant Formula by Fluorogenic Most-Probable-Number Assay. *Journal of Rapid Methods and Automation in Microbiology*. 13:318-328.

### **0370 NUTRITION AND KIDNEY STONES**

Al-Wahsh, I.A., H.T. Horner, R.G. Palmer, M.B. Reddy, and L.K. Massey. 2005. Oxalate and Phytate of Soy Foods. *Journal of Agricultural and Food Chemistry*. 53:5670-4.

Horner, H.T., T. Cervantes-Martinez, R. Healy, M.B. Reddy, B.L. Deardorff, T.B. Bailey, I.A. Al-Wahsh, L.K. Massey, and R.G. Palmer. 2005. Oxalate and Phytate Concentrations in Seeds of Soybean Cultivars. *Journal of Agricultural and Food Chemistry*. 53:7870-7877.

#### **0444 RELATIONSHIP BETWEEN MATERNAL ISOMERIC CLA AND HUMAN MILK ISOMERIC CLA CONCENTRATIONS; RELATIONSHIP WITH MILK FAT CONTENT**

Anderson, N.K., K.A. Beerman, M.A. McGuire, N. Dasgupta, J.N. Griinari, J. Williams, and M.K. McGuire. 2005. Type of Dietary Fat Influences Total Milk Fat Content in Lean Women. *Journal of Nutrition*. 135:416-421.

Mosley, E.E., A.L. Wright, M.K. McGuire, and M.A. McGuire. 2005. Trans Fatty Acids in Milk Produced by Women in the United States. *American Journal of Clinical Nutrition*. 82:1292-1297.

Ritzenthaler, K.L., M.K. McGuire, M.A. McGuire, T.D. Shultz, A.E. Koepf, L.O. Leudecke, T.W. Hanson, B.P. Chew, and N. Dasgupta. 2005. Consumption of Conjugated Linoleic Acid (CLA) from CLA-Enriched Cheese Does Not Alter Milk Fat or Immunity in Lactating Women. *Journal of Nutrition*. 135:422-430.

Horticulture and Landscape  
Architecture:

**321 CALCIUM/CALMODULIN-MEDICATED  
TRANSCRIPTIONAL NETWORKS IN  
PLANTS**

Du, L. and B.W. Poovaiah. 2005.  
Calcium/Calmodulin is Critical for  
Brassinosteroid Biosynthesis and Plant  
Growth. *Nature*. 437:741-745.

**0346 PHYSIOLOGICAL AND  
BIOCHEMICAL MARKERS OF POTATO  
SEED-TUBER AGE AND  
PRODUCTIVITY**

Knowles, N.R., L.O. Knowles, and M.M.  
Haines. 2005. 1,4-Dimethylnaphthalene  
Treatment of Seed Potatoes Affects  
Tuber Size Distribution. *American  
Journal of Potato Research*. 82:179-190.

**0412 DEVELOPMENT AND APPLICATION  
OF HARVESTING AND PROCESSING  
TECHNOLOGIES FOR PRODUCTION  
OF VALUE ADDED FRUIT AND  
VEGETABLE PRODUCTS**

Clary, C.D., D. Schmidtgall-McMillan, and  
V.E. Petrucci. 2005. A Method for  
Reducing the Amount of Sulfur Used to  
Produce Golden Raisins. *Applied Journal  
American Society of Agricultural  
Engineers*. 21:473-477.

Clary, C.D., S. Wang, and V.E. Petrucci.  
2005. Fixed and Incremental Levels of  
Microwave Power Application on Drying  
Grapes under Vacuum. *Journal of Food  
Science*. 70:344-349.

**0461 OPTIMIZING TUBER SET AND SIZE  
DISTRIBUTION FOR SEED, FRESH,  
AND PROCESSING MARKETS**

Knowles, N.R., L.O. Knowles, and M.M.  
Haines. 2005. 1,4-Dimethylnaphthalene  
Treatment of Seed Potatoes Affects  
Tuber Size Distribution. *American  
Journal of Potato Research*. 82:179-190.

**0797 POSTHARVEST BIOLOGY OF FRUIT**

Birla, S.L., S. Wang, J. Tang, J. Fellman, D.  
Mattinson, and S. Lurie. 2005. Quality  
of Oranges as Influenced by Potential  
Radio Frequency Heat Treatments  
against Mediterranean Fruit Flies.  
*Postharvest Biology and Technology*.  
38:66-79.

Haines, M.M., D.S., Mattinson, and J.K.  
Fellman. 2005. Farnesylation of  
Components of the Ethylene Signaling  
Pathway May Be Necessary to the  
Development of Superficial Scald in  
Apples. *Acta Horticulturae*. 682:313-  
319.

Muller, I., D.S. Mattinson, and J.K. Fellman.  
2005. Relationship between Preharvest  
Horticultural Oil Application and  
Postharvest Behaviour of 'Golden  
Delicious' Apples: Effect of Volatile  
Aroma Production. *Acta Horticulturae*.  
682:999-1005.

Rudell, D., J. Fellman, and J. Mattheis. 2005.  
Evaluation of Diphenylamine Derivatives  
in Apple Peel Using Gradient Reversed-  
Phase Liquid Chromatography with  
Ultraviolet-Visible Absorption and  
Atmospheric Pressure Chemical  
Ionization Mass Selective Detection.  
*Journal of Chromatography A*.  
1081:202-209.

Rudell, D., J. Mattheis, and J. Fellman. 2005.  
Relationship of Superficial Scald  
Development and A-Farnesene  
Oxidation to Reactions of  
Diphenylamine and Diphenylamine  
Derivatives in CV Granny Smith Apple  
Peel. *Journal of Agricultural and Food  
Chemistry*. 53:8382-8389.

**0910 ISOLATION OF A FLAVONOL  
RECEPTOR USING A PHOTOAFFINITY-  
TAGGED KAEMPFEROL LIGANDS**

Taylor, L.P. and E. Grotewold. 2005.  
Flavonoids as Developmental  
Regulators. *Current Opinions in Plant  
Biology*. 8:317-323.

**0937 ROLE OF FARM MANGEMENT SYSTEMS AND ENVIRONMENTAL STRESSES ON THE PHYSIOLOGY, QUALITY, AND SUSTAINABILITY OF TEMPERATE-ZONE FRUIT CROPS**

Peck, G.M., C. Richter, P.K. Andrews, and J.P. Reganold. 2005. Internationalization of the Organic Fruit Market: The Case of Washington State's Organic Apple Exports to the European Union. *Renewable Agriculture and Food Systems*. 20:101-112.

Torres, C.A., N.M. Davies, J.A. Yanez, and P.K. Andrews. 2005. Disposition of Selected Flavonoids in Fruit Tissues of Various Tomato (*Lycopersicon esculentum* Mill.) Genotypes. *Journal of Agricultural and Food Chemistry*. 53:9536-9543.

**IMPACT Center:**

**0171 INTERNATIONAL MARKETING PROGRAM FOR AGRICULTURAL COMMODITIES AND TRADE**

McCluskey, J.J., K.M. Grimsrud, H. Ouchi, and T.I. Wahl. 2005. After the BSE Discoveries: Japanese Consumers Food Safety Perceptions and Willingness to Pay for Tested Beef. *Australian Journal of Agricultural and Resource Economics*. 49:197-209.

McCluskey, J.J., T.I. Wahl, Q. Li, and P.R. Wandschneider. 2005. U.S. Grass-Fed Beef: Marketing Health Benefits. *Journal of Food Distribution Research*. 36:1-8.

**0451, 0620, 6901, AND 7901 ENHANCING COMPETITVENESS OF AGRICULTURAL PRODUCTS**

Al-Holy, M., M. Lin, and B.A. Rasco. 2005. Destruction of *Listeria monocytogenes* in Sturgeon (*Acipenser transmontanus*) Caviar Using a Combination of Nisin with Chemical Antimicrobials or Moderate Heat. *Journal of Food Protection*. 68:512-520.

Al-Holy, M., Y. Wang, J. Tang, and B. Rasco. 2005. Dielectric Properties of Salmon (*Oncorhynchus keta*) and Sturgeon (*Acipenser transmontanus*) Caviar at Radio Frequency (RF) and Microwave (MW) Pasteurization Frequencies. *Journal of Food Engineering*. 70:564-570.

Birla, S.L., S. Wang, J. Tang, J. Fellman, D. Mattinson, and S. Lurie. 2005. Quality of Oranges as Influenced by Potential Radio Frequency Heat Treatments against Mediterranean Fruit Flies. *Postharvest Biology and Technology*. 38:66-79.

Drake, S.R., J.D. Hansen, D.C. Elfving, J. Tang, and S. Wang. 2005. Hot Water to Control Codling Moth in Sweet Cherries: Efficacy and Quality. *Journal of Food Quality*. 28:361-376.

Grimsrud, K.M., J.J. McCluskey, and M.L. Loureiro. 2005. Policies and Attitudes toward Genetically Modified Foods in Norway. *Euro-Choices*. 3:38-44.

Hallman, G.J., S. Wang, and J. Tang. 2005. Reaction Order for Thermal Mortality Instars of Mexican Fruit Fly (*Diptera:Tephritidae*). *Journal of Economic Entomology*. 98:1905-1910.

Hansen, J.D., S.R. Drake, M.L. Heidt, M.A. Watkins, J. Tang, and S.J. Wang. 2005. Radio Frequency-Hot Water Treatments for Postharvest Control of Codling Moth in Bing Sweet Cherries. *Hortechology*. 15:613-616.

Kuzyk, P., J.J. McCluskey, and S.D. Ross. 2005. Testing a Political Economic Theory of the Media: How Were Steel Tariffs Covered? *Social Science Quarterly*. 86:812-825.

- Lin, M., M. Al-Holy, S.S. Chang, Y. Huang, A.G. Cavinato, D.H. Kang, and B.A. Rasco. 2005. Rapid Discrimination of Different *Alicyclobacillus Sp.* Isolates in Apple Juice by Fourier Transform Infrared Spectroscopy. *International Journal of Food Microbiology*. 105:369-376.
- Lin, M., M. Mousavi, M. Al-Holy, A.G. Cavinato, and B.A. Rasco. 2005. Rapid Near Infrared Spectroscopic Method for the Detection of Spoilage in Rainbow Trout (*Oncorhynchus mykiss*) Fillet. *Journal of Food Science*. 71:18-23.
- Luechapattanaorn, K., Y. Wang, J. Wang, J. Tang, L.M. Hallberg, and C.P. Dunne. 2005. Sterilization of Scrambled Eggs in Military Polymeric Trays by Radio Frequency Energy. *Journal of Food Science*. 70:288-294.
- Liu, Y., Z. Wen, W. Liao, C. Lui, and S. Chen. 2005. Optimization of L-(+)-Lactic Acid Production Process from Cull Potato by *Rhizopus oryzae*. *Engineering in Life Sciences*. 5:343-349.
- McCluskey, J.J., K.M. Grimsrud, H. Ouchi, and T.I. Wahl. 2005. After the BSE Discoveries: Japanese Consumers Food Safety Perceptions and Willingness to Pay for Tested Beef. *Australian Journal of Agricultural and Resource Economics*. 49:197-209.
- McCluskey, J.J. and M.L. Loureiro. 2005. Reputation and Production Standards. *Journal of Agricultural and Resource Economics*. 30:1-11.
- McCluskey, J.J., T.I. Wahl, Q. Li, and P.R. Wandschneider. 2005. U.S. Grass-Fed Beef: Marketing Health Benefits. *Journal of Food Distribution Research*. 36:1-8.
- Nindo, C.I., J. Tang, J.R. Powers, and P. Singh. 2005. Viscosity of Blueberry and Raspberry Juices for Processing Applications. *Journal of Food Engineering*. 69:343-350.
- Reyes-De-Corcurera, J.I., R.P. Cavalieri, J.R. Powers, J.M. Tang, and D.H. Kang. 2005. Enzyme-Electropolymer-Based Amperometric Biosensors: An Innovative Platform for Time-Temperature Integrators. *Journal of Agricultural and Food Chemistry*. 53:8866-8873.
- Sepulveda, D.R., M.M. Gongora-Nieto, M.F. San-Martin, and G.V. Barbosa-Canovas. 2005. Determination of the Influence of Treatment Temperature on the Inactivation of *Listeria innocua* by Pulsed Electric Fields. *Lebensmittel-Wissenschaft und Technologie Journal*. 38:167-172.
- Sun, T., J. Tang, and J. Powers. 2005. Effect of Commercial Pectolytic Enzyme Treatments on the Phenolic Composition and Antioxidant Activity of Asparagus Juice. *Journal of Agricultural and Food Chemistry*. 53:42-48.
- Swinnen, J.F.M., J.J. McCluskey, and N. Francken. 2005. Food Safety, the Media, and the Information Market. *Agricultural Economics*. 32:175-188.
- Wang, S., J.A. Johnson, J. Tang, and X. Yin. 2005. Heating Condition Effects on Thermal Resistance of Fifth-Instar Navel Orangeworm (*Lepidoptera: Pyralidae*). *Journal of Stored Products Research*. 41:469-478.
- Wang, S., J. Yue, J. Tang, and B. Chen. 2005. Mathematical Modeling of Heating Uniformity for In-Shell Walnuts Subjected to Radio Frequency Treatments with Intermittent Stirrings. *Postharvest Biology and Technology*. 35:97-107.
- Wang, S., M. Monzon, Y. Gazit, J. Tang, E.J. Mitcham, and J.W. Armstrong. 2005. Temperature Dependent Dielectric Properties of Subtropics and Tropical Fruits and Associated Insect Pests. *Transcript of American Society of Agricultural Engineers*. 48:1873-1881.

Winfree, J.A. and J.J. McCluskey. 2005. Collective Reputation and Quality. *American Journal of Agricultural Economics*. 87:207-214.

Ghosh, J., D. Holland, T. Heckeley, S. Devadoss, and L. Stodick. 2005. A General Equilibrium Analysis of the Economic Impact of the Canadian Softwood Lumber Tariff on the Washington Economy. *Northwest Journal of Business and Economics/2005*. 1-15.

Liu, Y., Z. Wen, W. Liao, C. Lui, and S. Chen. 2005. Optimization of L-(+)-Lactic Acid Production Process from Cull Potato by *Rhizopus oryzae*. *Engineering in Life Sciences*. 5:343-349.

Nindo, C.I., J. Tang, J.R. Powers, and P. Singh. 2005. Viscosity of Blueberry and Raspberry Juices for Processing Applications. *Journal of Food Engineering*. 69:343-350.

**0541 INTERNATIONAL MARKETING PROGRAM FOR AGRICULTURAL COMMODITIES AND TRADE (IMPACT) CENTER**

McCluskey, J.J., K.M. Grimsrud, H. Ouchi, and T.I. Wahl. 2005. After the BSE Discoveries: Japanese Consumers Food Safety Perceptions and Willingness to Pay for Tested Beef. *Australian Journal of Agricultural and Resource Economics*. 49:197-209.

McCluskey, J.J., T.I. Wahl, Q. Li, and P.R. Wandschneider. 2005. U.S. Grass-Fed Beef: Marketing Health Benefits. *Journal of Food Distribution Research*. 36:1-8.

**Institute of Biological Chemistry:**

**0197 THE FLEXIBILITY OF THE LIGHT REACTIONS OF PHOTOSYNTHESIS**

Avenson, T.J., J.A. Cruz, A. Kanazawa, and D.M. Kramer. 2005. Regulating the Proton Budget of Higher Plant Photosynthesis. *Proceedings of the National Academy of Science*. 102:9709-9713.

Avenson, T.J., A. Kanazawa, J.A. Cruz, K. Takizawa, W.E. Ettinger, and D.M. Kramer. 2005. Integrating the Proton Circuit into Photosynthesis: Progress and Challenges. *Plant Cell Environment*. 28:97-109.

Cape, J.L., M.K. Bowman, and D.M. Kramer. 2005. Reaction Intermediates of Quinol Oxidation in a Photoactivatable System that Mimics Electron Transfer in the Cytochrome BC1 Complex. *Journal of the American Chemical Society*. 127:4208-4215.

Cape, J.L., J.R. Strahan, M.J. Lenaeus, B.A. Yuknis, T.T. Le, J.N. Shepherd, M.K. Bowman, and D.M. Kramer. 2005. The Respiratory Substrate Rhodoquinol Induces Q-Cycle Bypass Reactions in the Yeast Cytochrome BC1 Complex. *The Journal of Biological Chemistry*. 280:34654-34660.

Cruz, J.A., A. Kanazawa, N. Treff, and D.M. Kramer. 2005. Storage of Light-Driven Transthylakoid Proton Motive Force as an Electric Field  $\Delta\psi$  under Steady-State Conditions in Intact Cells of *Chlamydomonas reinhardtii*. *Photosynthesis Research*. 85:221-233.

Ivanov, B., K. Asada, D.M. Kramer, and G.E. Edwards. 2005. Characterization of Photosynthetic Electron Transport in Bundle Sheath Cells of Maize. I. Ascorbate Effectively Stimulates Cyclic Electron Flow Around PSI. *Planta*. 220:572-581.

**0202 UNRAVELING THE MOLECULAR INTERACTIONS AT LIGNIN INITIATION SITES AND IN HEARTWOOD FORMATION**

Youn, B., S.G.A. Moinuddin, L.B. Davin, N.G. Lewis, and C.H. Kang. 2005. Crystal Structures of Apo-Form, and Binary/Ternary Complexes of Podophyllum Secoisolariciresinol Dehydrogenase, an Enzyme Involved in Formation of Health-Protecting and Plant Defense Lignans. *Journal of Biological Chemistry*. 280:12917-12926.

#### **0253 LIPID BIOSYNTHESIS IN LEAVES AND SEEDS**

Koo, A.J.K., M. Fulda, J. Browse, and J.B. Ohlrogge. 2005. Identification of a Plastid Acyl-Acyl Carrier Protein Synthetase in Arabidopsis and Its Role in the Activation and Elongation of Exogenous Fatty Acids. *Plant Journal*. 44:620-632.

#### **0268 BIOCHEMISTRY OF PLANT TERPENOIDS**

Davis, E.M., K.L. Ringer, M.E. McConkey, and R. Croteau. 2005. Monoterpene Metabolism: Cloning, Expression and Characterization of Menthone Reductases from Peppermint. *Plant Physiology*. 137:873-881.

Ringer, K.L., E.M. Davis, and R. Croteau. 2005. Monoterpene Metabolism: Cloning, Expression and Characterization of (-)-Isopiperitenol/(-)-Carveol Dehydrogenase from Peppermint and Spearmint. *Plant Physiology*. 137:863-872.

Croteau, R., E.M. Davis, K.L. Ringer, and M.R. Wildung. 2005. Menthol Biosynthesis and Molecular Genetics. *Naturwissenschaften*. 92:562-577.

#### **0594 METABOLIC ENGINEERING OF FOLATE-ENRICHED PLANTS**

Sandoval, F.J. and S. Roje. 2005. An FMN Hydrolase Is Fused to a Riboflavin Kinase Homolog in Plants. *Journal of Biological Chemistry*. 280:38337-38345.

#### **0606 REGULATION OF THE EARLY STEPS OF ISOPRENOID BIOSYNTHESIS IN PLANT CHLOROPLASTS**

Lange, B.M. and M. Ghassemian. 2005. Comprehensive Post-Genomic Data Analysis Approaches Integrating Biochemical Pathway Maps. *Phytochemistry*. 66:413-451.

#### **0773 NUTRIENT EXCHANGE AND METABOLISM IN THE RHIZOBIUM-LEGUME SYMBIOSIS**

Grzemeski, W., J.P. Akowski, and M.L. Kahn. 2005. Altering Bacterial Metabolism in a Nitrogen Fixing Symbiosis Using Conditional and Impaired Mutations in *Sinorhizobium meliloti* Citrate Synthase. *Molecular Plant Microbe Interactions*. 18:134-141.

Parra-Colmenares, A. and M.L. Kahn. 2005. Determination of Nitrogen Fixation Effectiveness in Selected *Medicago truncatula* Isolates by Measuring Nitrogen Isotope Incorporation into Pheophytin. *Plant and Soil*. 270:159-168.

Schroeder, B.K., B.L. House, M.W. Mortimer, S.N. Yurgel, S.C. Maloney, K.L. Ward, and M.L. Kahn. 2005. Developing a Functional Genomics Platform for *Sinorhizobium meliloti*: Construction of an ORFeome. *Applied and Environmental Microbiology*. 71:5858-64.

Yurgel, S.N. and M.L. Kahn. 2005. *Sinorhizobium meliloti* dctA Mutants with Partial Ability to Transport Dicarboxylic Acids. *Journal of Bacteriology*. 187:1161-72.

#### **0967 DITERPENE BIOSYNTHESIS IN TAXOL PRODUCTION AND CONIFER DEFENSE**

Jennewein, S., H. Park, J.M. DeJong, R.M. Long, A.P. Bollon, and R.B. Croteau. 2005. Coexpression in Yeast of Taxus Cytochrome P450 Reductase with Cytochrome P450 Oxygenases Involved in Taxol Biosynthesis. *Biotechnology Bioengineering*. 89:588-598.

**1791 POLYPEPTIDE SIGNALING FOR PLANT DEFENSE, GROWTH, AND DEVELOPMENT**

Scheer, J., G. Pearce, and C.A. Ryan. 2005. LeRALF, a Plant Peptide that Regulates Root Growth and Development, Specifically Binds to 25 kD and 120 kD Cell Surface Membrane Proteins of *Lycopersicon peruvianum*. *Planta*. 221:667-674.

Narvaez-Vasquez, J., G. Pearce, and C.A. Ryan. 2005. The Plant Cell Wall Matrix Harbors a Precursor of Defense Signaling Peptides. *Proceedings of the National Academy of Science*. 36:12974-12977.

**2134 BIOCHEMISTRY OF OILSEEDS: NEW STRATEGIES FOR IMPROVING OILS**

Lu, C., M. Fulda, J.G. Wallis, and J. Browse. 2005. A High-Throughput Screen for Genes from Castor that Boost Hydroxy Fatty Acid Accumulation in Seed Oils of Transgenic Arabidopsis. *Plant Journal*. 45:847-856.

**6589 mRNA TARGETING TO THE CORTICAL REGION IN PLANTS: THE ROLE OF THE RNA BINDING PROTEIN Rp 120**

Crofts, A.J., H. Washida, T.W. Okita, M. Ogawa, T. Kumamaru, and H. Satoh. 2005. The Role of mRNA and Protein Sorting in Seed Storage Protein Synthesis, Transport and Deposition. *Biochemistry and Cell Biology*. 83:728-737.

**Natural Resource Sciences:**

**0226 ASSESSING THE VALUE OF CUTTHROAT TROUT (A SPECIES AT RISK) TO GRIZZLY BEARS IN YELLOWSTONE NATIONAL PARK**

Robbins, C.T., L.A. Felicetti, and M. Sponheimer. 2005. The Effect of Dietary Protein Quality on Nitrogen Discrimination in Birds and Mammals. *Oecologia*. 144:534-540.

Tollefson, T.N., C. Matt, J. Meehan, and C.T. Robbins. 2005. Quantifying Spatiotemporal Overlap of Alaskan Brown Bears and People. *Journal of Wildlife Management*. 69:810-817.

**0396 NATURAL RESOURCE/FORST BASED COMMUNITIES IN A TIME OF GLOBAL CHANGE: ADAPTATION TO EXOGENOUS FORCES**

Mittelhammer, R.C., K.A. Blatner, E. Weiner, and M.S. Carroll. 2005. Effects of Changing Technology on Washington's Sawmill Industry in the Pre-Spotted Owl Period. *Forest Products Journal*. 55:105-112.

Carroll, M.S., P.J. Cohn, D. Seesholtz, and L. Higgins. 2005. Interface Fire as a Galvanizing and Fragmenting Influences on Affected Communities: The Case of the Rodeo-Chediski Fire. *Society and Natural Resources*. 18:301-320.

Forte-Gardner, O., F.L. Young, D.A. Dillman, and M.S. Carroll. 2005. Impacting Growers' Use and Adoption of Conservation Cropping Systems through Research and Field Design. *Renewable Agriculture and Food Systems*. 19:199-209.

Weisshaupt, B.R., M.S. Carroll, P. Jakes, and K.A. Blatner. 2005. Acceptability of Smoke from Prescribed Forest Burning in the Northern Inland West: A Focus Group Approach. *Journal of Forestry*. 103:189-193.

**0411 EFFECTS OF IRRIGATION  
AGRICULTURE AND WHITE-TAILED  
DEER ON COUGAR PREDATION OF  
MULE DEER: A TEST OF THE  
APPARENT COMPETITION  
HYPOTHESIS**

Katnik, D.D. and R.B. Wielgus. 2005. Landscape Proportions Versus Monte Carlo Simulated Home Ranges for Estimating Resource Availability. *Journal of Wildlife Management*. 69:20-32.

**0417 THE EFFECTS OF NUTRITION AND  
HABITAT QUALITY ON DECLINING  
WILDLIFE POPULATIONS**

Searle, K.R., N.T. Hobbs, and L.A. Shipley. 2005. When to Leave, When to Stay? Patch Departure Decisions by Herbivores at Multiple Scales. *Oikos*. 111:417-424.

Searle, K.R., T. Vandervelde, N.T. Hobbs, and L.A. Shipley. 2005. Gain Functions for Large Herbivores in Patches: Tests of Alternative Models. *Journal of Animal Ecology*. 74:181-189.

**0561 ANALYSIS OF THE INLAND-  
NORTHWEST WOOD PRODUCTS  
INDUSTRY**

Mittelhammer, R.C., K.A. Blatner, E. Weiner, and M.S. Carroll. 2005. Effects of Changing Technology on Washington's Sawmill Industry in the Pre-Spotted Owl Period. *Forest Products Journal*. 55:105-112.

Blatner, K.A., R. Fight, N. Vance, M. Savage, and R.C. Chapman. 2005. A Model to Estimate Noble Fir Bough Weight. *Western Journal of Applied Forestry*. 20:44-49.

**Plant Pathology:**

**0300 POPULATION BIOLOGY OF PLANT  
PATHOGENIC FUNGI**

Dugan, F.M., S.L. Lupien, M. Hernandez-Bello, T.L. Peever, and W. Chen. 2005. Fungi Resident in Chickpea Debris and Their Suppression of Growth and Reproduction of *Didymella rabiei* under Laboratory Conditions. *Journal of Phytopathology*. 153:431-439.

Peever, T.L., L. Carpenter-Boggs, L.M. Carris, L.W. Timmer, and A. Bhatia. 2005. Citrus Black Rot Is Caused by Phylogenetically Distinct Lineages of *Alternaria alternata*. *Phytopathology*. 95:512-518

**0545 MOLECULAR AND BIOLOGICAL  
APPROACHES TO STUDYING  
EMERGING VIRUS THREATS**

Pappu, H.R., S.D. Wyatt, and K. Druffel. 2005. Dahlia Mosaic Virus in US Dahlias: Incidence and Molecular Detection. *HortScience*. 40:697-699.

Rosales, M., H.R. Pappu, L. Lopez, R. Mora, and A. Aljaro. 2005. Iris Yellow Spot Virus in Onion in Chile. *Plant Disease*. 89:1245.

**0669 CONTROLLING EYESPOT IN WINTER  
WHEAT WITH DISEASE RESISTANCE**

Li, H.J., M. Arterburn, S.S. Jones, and T.D. Murray. 2005. Resistance to Eyespot of Wheat, Caused by *Tapesia yallundae*, Derived from *Thinopyrum intermedium* Homoeologous Group 4 Chromosomes. *Theoretical and Applied Genetics*. 111:932-940.

**0678 DISEASE WARNING SYSTEMS FOR  
POTATO AND MINT**

Nitzan, N., T.F. Cummings, and D.A. Johnson. 2005. Effect of Seed-Tuber Generation, Soilborne Inoculum, and Azoxystrobin Application on Development of Potato Black Dot Caused by *Colletotrichum coccodes*. *Plant Diseases*. 89:1181-1185.

Porter, L.D., N. Dugupta, and D.A. Johnson. 2005. Effects of Tuber Depth and Soil Moisture on Infection of Potato Tubers in Soil by *Phytophthora Infestans*. *Plant Diseases*. 89:146-152.

### 0823 CONTROL OF RUSTS OF WHEAT AND BARLEY

Blount, A.R., S. Rizvi, R.D. Barnett, X.M. Chen, T.S. Schubert, W.H. Dankers, T.M. Momol, and W.N. Dixon. 2005. First Report of Stripe Rust, *Puccinia striiformis* Westend. f. sp. *tritici* on Wheat (*Triticum aestivum* L.) in North Florida. Online. *Plant Health Progress*. <http://www.plantmanagementnetwork.org/pub/php/brief/2005/stripe/>.

Campbell, K.G., R.E. Allan, J. Anderson, J.A. Pritchett, L.M. Little, C.F. Morris, R.F. Line, X.M. Chen, M.K. Walker-Simmons, B.P. Carter, J.W. Burns, S.S. Jones, and P.E. Reisenauer. 2005. Registration of 'Finch' Winter Club Wheat. *Crop Science*. 45:1656-1657.

Campbell, K.G., R.E. Allan, J. Anderson, J.A. Pritchett, L.M. Little, C.F. Morris, R.F. Line, X.M. Chen, M.K. Walker-Simmons, B.P. Carter, J.W. Burns, S.S. Jones, and P.E. Reisenauer. 2005. Registration of 'Chukar' Winter Club Wheat. *Crop Science*. 45:1657-1659.

Chen, X.M. 2005. Epidemiology of Barley Stripe Rust and Races of *Puccinia striiformis* f. sp. *Hordei*: the First Decade in the United States. *Cereal Rusts and Powdery Mildews Bulletin*. Online. [www.crpmb.org/2004/1029chen](http://www.crpmb.org/2004/1029chen).

Chen, X.M. 2005. Epidemiology and Control of Stripe Rust on Wheat. *Canadian Journal of Plant Pathology*. 27:314-337.

Chen, X.M. and L. Penman. 2005. Stripe Rust Epidemic and Races of *Puccinia striiformis* in the United States in 2004. *Phytopathology*. 95:S19.

Chen, X.M. and D.A. Wood. 2005. Control of Stripe Rust of Winter Wheat with Foliar Fungicides, 2004. *Foods and Nutrition Tests*. 60:27.

Chen, X.M. and D.A. Wood. 2005. Control of Stripe Rust of Spring Wheat with Foliar Fungicides, 2004. *Foods and Nutrition Tests*. 60:21.

Chen, X.M. and D.A. Wood. 2005. Control of Stripe Rust of Spring Barley with Foliar Fungicides, 2004. *Foods and Nutrition Tests*. 60:20.

Ling, P. and X.M. Chen. 2005. Construction of a Hexaploid Wheat (*Triticum aestivum* L.) Bacterial Artificial Chromosome Library for Cloning Genes for Stripe Rust Resistance. *Genome*. 48:1028-1036.

Pahalawatta, V. and X.M. Chen. 2005. Genetic Analysis and Molecular Mapping of Wheat Genes Conferring Resistance to the Wheat Stripe Rust and Barley Stripe Rust Pathogens. *Phytopathology*. 95:427-432.

Pahalawatta, V. and X.M. Chen. 2005. Inheritance and Molecular Mapping of Barley Genes Conferring Resistance to Wheat Stripe Rust. *Phytopathology*. 95:884-889.

Uauy, C., J.C. Brevis, X.M. Chen, I.A. Khan, L.F. Jackson, O. Chicaiza, A. Distelfeld, T. Fahima, and J. Dubcovsky. 2005. Novel High-Temperature Adult Plant (HTAP) Stripe Rust Resistance Gene Yr36 from *Triticum Turgidum* ssp. *dicoccoides* is Closely Linked to the Grain Protein Content Locus Gpc-B1. *Theoretical and Applied Genetics*. 112:97-105.

Vales, M.I., C.C. Schon, F. Capettini, X.M. Chen, A.E. Corey, D.E. Mather, C.C. Mundt, K.L. Richardson, J.S. Sandoval-Islas, H.F. Utz, and P.M. Hayes. 2005. Effect of Population Size on the Estimation of Barley Stripe Rust QTL. *Theoretical and Applied Genetics*. 111:1260-1270.

Yan, G.P. and X.M. Chen. 2005. Molecular Mapping of a Recessive Gene in Barley for Resistance to Stripe Rust. *Phytopathology*. 95:S115.

#### **0837 SYSTEMATICS AND BIOLOGY OF PHYTOPATHOGENIC FUNGI WITH EMPHASIS ON TILLETIALES**

Castlebury, L., L.M. Carris, and K. Vanky. 2005. Phylogenetic Analysis of *Tilletia* and Allied Genera in Order *Tilletiales* (*Ustilaginomycetes*; *Exobasidiomycetidae*) Estimated from Nuclear LSU and ITS rDNA Sequences. *Mycologia*. 97:888-900.

Peever, T.L., L. Carpenter-Boggs, L.M. Carris, L.W. Timmer, and A. Bhatia. 2005. Citrus Black Rot Is Caused by Phylogenetically Distinct Lineages of *Alternaria Alternata*. *Phytopathology*. 95:512-518.

#### **0947 METABOLITES OF BIOCONTROL AGENTS THAT SUPPRESS ROOT PATHOGENS OF WHEAT AND BARLEY**

Paulsen, I.T., C. Press, J. Ravel, D.Y. Kobayashi, G.S.A. Myers, D.V. Mavrodi, R.T. DeBoy, R. Seshadri, Q. Ren, R. Madupu, R.J. Dodson, A.S. Durkin, L.M. Brinkac, S.C. Daugherty, S.A. Sullivan, M.J. Rosovitz, M.L. Gwinn, L. Zhou, W.C. Nelson, J. Weidman, K. Watkins, K. Tran, H. Khouri, E.A. Pierson, L.S. Pierson, L.S. Thomashow, and J.E. Loper. 2005. Complete Genome Sequence of the Plant Commensal *Pseudomonas fluorescens* Pf-5: Insights into the Biological Control of Plant Disease. *Nature Biotechnology*. 23:873-878.

Khan, S.R., D.V. Mavrodi, G.J. Jog, H. Suga, L.S. Thomashow, and S.K. Farrand. 2005. Activation of the Phz Operon of *Pseudomonas fluorescens* 2-79 Requires the LuxR Homolog PhzR, N-(3-OH-hexanoyl)-L-Homoserine Lactone Produced by the LuxI Homologue PhzI, and a Cis-Acting Phz-Box. *Journal of Bacteriology*. 187:6517-6527.

Thomashow, L.S. and D.M. Weller. 2005. Sustainable Use of Microbial Genetic Resources in Agriculture: Biological Control Agents. *Agroscentia*. 9:317-320.

#### **1767 MYCOBIOTIC, REVISIONARY, AND MONOGRAPHIC STUDIES IN XYLARIACEAE AND RELATED FAMILIES**

Hellwig, V., Y.-M. Ju, J.D. Rogers, J. Fournier, and M. Stadler. 2005. Hypomiltin, a Novel Azaphilone from *Hypoxylon hypomiltum*, and Chemotypes in *Hypoxylon* sect. *Hypoxylon* as Inferred from Analytical HPLC Profiling. *Mycological Progress*. 4:39-54.

Hsieh, H.-M., Y.-M. Ju, and J.D. Rogers. 2005. Molecular Phylogeny of *Hypoxylon* and Closely Related Genera. *Mycologia*. 97:844-865.

Ju, Y.-M., J.D. Rogers, and H.-M. Hsieh. 2005. New *Hypoxylon* and *Nemania* Species from Costa Rica and Taiwan. *Mycologia*. 97:562-567.

Rogers, J.D., Y.-M. Ju, and J. Lehmann. 2005. Some *Xylaria* Species from Termite Nests. *Mycologia*. 97:914-923.

#### **School of Economic Sciences:**

#### **0218 EMPIRICAL LIKELIHOOD, ENTROPY, ESTIMATING EQUATIONS, AND OTHER COMPUTER INTENSIVE METHODS FOR AGRICULTURAL ECONOMICS RESEARCH: EXTENSION**

Mittelhammer, R.C., K.A. Blatner, E. Weiner, and M.S. Carroll. 2005. Effects of Changing Technology on Washington's Sawmill Industry in the Pre-Spotted Owl Period. *Forest Products Journal*. 55:105-112.

Mittelhammer, R.C. and G. Judge. 2005. Combining Estimators to Improve Structural Model Estimation under Quadratic Loss. *Journal of Econometrics*. 1-29.

**0539 ECONOMIC, INFORMATION, AND INSTITUTIONAL DESIGN FOR NATURAL RESOURCES AND THE ENVIRONMENT**

Rucker, R., W. Thurman, and J. Yoder. 2005. Estimating the Speed of Market Reaction to News: Market Events and Lumber Futures Prices. *American Journal of Agricultural Economics*. 87:482-500.

**0540 COLLECTIVE REPUTATION: FIRM INCENTIVES AND EMPIRICAL ANALYSIS**

McCluskey, J.J. and M.L. Loureiro. 2005. Reputation and Products with Unobservable Quality. *Journal of Agricultural and Resource Economics*. 30:1-11.

Winfree, J.A. and J.J. McCluskey. 2005. Collective Reputation and Quality. *American Journal of Agricultural Economics*. 87:207-214.

**0544 THE IMPACTS OF POLICIES AFFECTING RESOURCES**

Chouinard, H.H. 2005. Auctions With and Without the Right of First Refusal and National Park Concession Contracts. *American Journal of Agricultural Economics*. 87:1083-1088.

**0609 COMMODITY MARKETS: FOOD SAFETY, INVASIVE SPECIES, AND ECONOMETRICS**

Marsh, T.L. 2005. Economic Substitution for U.S. Wheat Food Use by Class. *Australian Journal of Agricultural and Resource Economics*. 49:283-301.

**0998 RURAL COMMUNITIES, RURAL LABOR MARKETS, AND PUBLIC POLICY**

Yeo, J.H., S.K. Ahn, and D.W. Holland. 2005. Labor Market Behavior in Washington: A Cointegration Approach. *The Annals of Regional Science*. 39:317-335.

**Wood Materials and Engineering Lab:**

**0453 NANOTECHNOLOGY OF LIGNOCELLULOSICS**

Wang, J., M.P. Wolcott, and M.P. Laborie. 2005. Modeling the Cure Kinetics of Phenol-Formaldehyde Resins. *Thermochemica Acta*. 439:68.

**WSU RESEARCH AND EXTENSION CENTERS:**

**Irrigated Agriculture Research and Extension Center:**

**0168 GENE TRANSFER FOR POTATO VARIETY DEVELOPMENT**

Brown, C.R. 2005. Antioxidants in Potato. *American Journal of Potato Research*. 82:163-172.

Brown, C.R., D. Culley, C.P. Yang, R. Durst, and R. Wrolstad. 2005. Variation of Anthocyanin and Carotenoid Contents and Associated Antioxidant Values in Potato Breeding Lines. *Journal of American Society for Horticultural Science*. 130:174-180.

**0185 GENETIC VARIABILITY IN THE CYST AND ROOT-KNOT NEMATODES**

Riga, E., J. Potter, and C. Hooper. 2005. *In Vitro* Effect Marigold Exudates on Plant Parasitic Nematodes. *Phytoprotection*. 86:31-35.

**0257 UNDERSTANDING AND MANAGING VARIABILITY OF SOIL AND PLANT NUTRIENTS IN IRRIGATED PERENNIAL CROP SYSTEMS**

Davenport, J.R., E.M. Perry, N.S. Lang, and R.G. Stevens. 2005. Leaf Spectral Reflectance for Non-Destructive Measurement of Plant Nutrient Status. *HortTechnology*. 15:31-35.

Vanden Heuvel, J.E., and J.R. Davenport. 2005. Effect of Light, Temperature, Defoliation, and Fruiting on Carbon Assimilation and Partitioning in Potted Cranberry. *HortScience*. 40:1699-1704.

#### **0281 ALTERNATE CROPS FOR IRRIGATED CENTRAL WASHINGTON**

Hang, A.N., M.J. Silbernagel, P.N. Miklas, and G.L. Hosfield. 2005. Registration of 'Fiero' Dark Red Kidney Dry Bean. *Crop Science*. 45:799-800.

Hang, A.N., M.J. Silbernagel, P.N. Miklas, and G.L. Hosfield. 2005. Registration of 'Blush' Light Red Kidney Dry Bean. *Crop Science*. 45:799.

Hosfield, G.L. and A.N. Hang. 2005. Registration of 'Claret' Small Red Bean. *Crop Science*. 45: 1663.

#### **0290 DEVELOPING MANAGEMENT STRATEGIES FOR PLANT VIRUSES AND VIRUS-LIKE AGENTS THAT INFECT PERENNIAL VEGETATIVELY-PROPAGATED CROP PLANTS IN THE U.S.**

H.R. Etebarian, P.L. Sholberg, K.C. Eastwell, and R.J. Saylor. 2005. Biological Control of Apple Blue Mold with *Pseudomonas fluorescens* Marked with a Green Fluorescent Protein. *Canadian Journal of Microbiology*. 51:591-598.

Martin, R.R., K.C. Eastwell, A. Wagner, S. Lamprecht, and I.E. Tzanetakis. 2005. Survey for Viruses of Grapevine in Oregon and Washington. *Plant Disease*. 89:763-766.

#### **0337 APHIDS: ECOLOGY, SYSTEMATICS, BIOCONTROL**

Koss, A.M., A.S. Jensen, A. Schreiber, K.S. Pike, and W.E. Snyder. 2005. A Comparison of Predator and Pest Communities in Washington Potato Fields Treated with Broad-Spectrum, Selective or Organic Insecticides. *Environmental Entomology*. 34:87-95.

Noma, T., M.J. Brewer, K.S. Pike, and S.D. Gaimari. 2005. Hymenopteran Parasitoids and Dipteran Predators of *Diuraphis noxia* (Homoptera: Aphididae) in the Westcentral Great Plains: Species Records and Geographic Range. *Biocontrol*. 50:97-111.

#### **0377 PRODUCTION, HORTICULTURAL, AND INTEGRATED MANAGEMENT SYSTEMS OF GRAPES**

Tarara, J.M., J.E. Perez Pena, and M. Keller. 2005. Using Whole-Vine Photosynthesis to Understand the Effects of Water Stress on Premium Wine Grapes. *Acta Horticulturae*. 689:301-307.

Keller, M., L.J. Mills, J.M. Tarara, and J.C. Ferguson. 2005. Effects of Budbreak Temperature on Seasonal Shoot and Fruit Growth in Grapevines. *Acta Horticulturae*. 689:183-188.

#### **0381 DEVELOPMENT OF INTEGRATED MANAGEMENT SYSTEMS FOR HIGH VALUE SPECIALTY CROPS IN CENTRAL WASHINGTON**

James, D.G. 2005. Further Evaluation of Synthetic Herbivore-Induced Plant Volatiles as Attractants for Beneficial Insects. *Journal of Chemical Ecology*. 31:493-507.

James, D.G. and T.R. Grasswitz. 2005. Field Attraction of Parasitic Wasps, *Metaphycus* spp. and *Anagrus* spp. to Synthetic Herbivore-Induced Plant Volatiles. *Biocontrol*. 50:871-880.

Wright, L.C., W.W. Cone, and D.G. James. 2005. Sources of Spring and Fall Hop Aphid, *Phorodon Humuli* (Schrank) (Homoptera: Aphididae) Migrants in South Central Washington. *Journal of the Entomological Society of British Columbia*. 102:21-26.

#### **0420 INTEGRATING WHOLE-TREE PHYSIOLOGICAL, HORTICULTURAL, AND GENETIC RESEARCH IN PRUNUS TREE FRUITS**

lezzoni, A. and M. Whiting. 2005. Next Wave of Clonal Rootstocks. Compact Fruit Tree. 38:18-19.

Whiting, M.D. 2005. Rootstocks for Sweet Cherry: Descriptions and Global Trends. Compact Fruit Tree. 38:15-17.

Whiting, M.D. and D. Ophardt. 2005. Comparing Novel Sweet Cherry Crop Load Management Strategies. HortScience. 40:1271-1275.

Whiting, M.D., G.A. Lang, and D. Ophardt. 2005. Rootstock and Training System Affect Sweet Cherry Growth, Yield and Fruit Quality. HortScience. 40:582-586.

#### **0423 EPIDEMIOLOGY AND MANAGEMENT OF POWDERY MILDEW OF WINE GRAPES**

Grove, G.G. and J.L. Lunden. 2005. Use of Petroleum Derived Spray Oils in Washington Grapevine Powdery Mildew Management Programs. Plant Health Progress doi:10.1094/PHP-2005-0317-01-RS.

Walsh, D.B. and G.G. Grove. 2005. Repellency and Repulsiveness of Selected Agrichemicals to the Two-Spotted Spider Mite (*Tetranychus urticae*) on Grape Foliage. Online. Plant Health Progress doi: 10.1094/PHP-2005-1228-01-RS.

#### **0428 GRAPE YIELD COMPONENTS AND QUALITY**

Keller, M., L.J. Mills, J.M. Tarara, and J. Ferguson. 2005. Effects of Budbreak Temperature on Seasonal Shoot and Fruit Growth in Grapevines. Acta Horticulturae. 689:183-188.

#### **0519 WINE AND JUICE GRAPE PHYSIOLOGY AND PRODUCTION SYSTEMS**

Keller, M. 2005. Deficit Irrigation and Vine Mineral Nutrition. American Journal of Enology and Viticulture. 56:267-283.

Keller, M., L.J. Mills, J.M. Tarara, and J. Ferguson. 2005. Effects of Budbreak Temperature on Seasonal Shoot and Fruit Growth in Grapevines. Acta Horticulturae. 689:183-188.

Keller, M., L.J. Mills, R.L. Wample, and S.E. Spayd. 2005. Cluster Thinning Effects on Three Deficit-Irrigated *Vitis Vinifera* Cultivars. American Journal of Enology and Viticulture. 56:91-103.

#### **0521 MANAGEMENT OF VIRUSES IN WASHINGTON'S VINEYARDS**

Martin, R.R., K.C. Eastwell, A. Wagner, S. Lamprecht, and I.E. Tzanetakis. 2005. Survey for Viruses for Grapevine in Oregon and Washington. Plant Disease. 89:763-766.

#### **0523 IMPROVED DETECTION, FORECASTING, AND MANAGEMENT OF POWDERY MILDEW OF WINE GRAPES**

Grove, G.G. and J.L. Lunden. 2005. Use of Petroleum Derived Spray Oils in Washington Grapevine Powdery Mildew Management Programs. Plant Health Progress doi:10.1094/PHP-2005-0317-01-RS.

Walsh, D.B. and G.G. Grove. 2005. Repellency and Repulsiveness of Selected Agrichemicals to the Two-Spotted Spider Mite (*Tetranychus urticae*) on Grape Foliage. Online. Plant Health Progress doi: 10.1094/PHP-2005-1228-01-RS.

#### **0524 BIOLOGY AND INTEGRATED MANAGEMENT OF INSECT AND MITE PESTS OF WINE GRAPES**

James, D.G. 2005. Further Evaluation of Synthetic Herbivore-Induced Plant Volatiles as Attractants for Beneficial Insects. Journal of Chemical Ecology. 31:493-507.

James, D.G. and T.R. Grasswitz. 2005. Field Attraction of Parasitic Wasps, *Metaphycus spp.* and *Anagrus spp.* to Synthetic Herbivore-Induced Plant Volatiles. *Biocontrol*. 50:871-880.

**0560 EXOTIC GERMLASM CONVERSION AND BREEDING COMMON BEAN FOR RESISTANCE TO ABIOTIC AND BIOTIC STRESSES AND TO ENHANCE NUTRITIONAL VALUE**

Hang, A.N., M.J. Silbernagel, P.N. Miklas, and G.L. Hosfield. 2005. Registration of 'Fiero' Dark Red Kidney Dry Bean. *Crop Science*. 45:799-800.

Hang, A.N., M.J. Silbernagel, P.N. Miklas, and G.L. Hosfield. 2005. Registration of 'Blush' Light Red Kidney Dry Bean. *Crop Science*. 45:799.

Hosfield, G.L. and A.N. Hang. 2005. Registration of 'Claret' Small Red Bean. *Crop Science*. 45: 1663.

**0564 MANAGING PLANT MICROBE INTERACTIONS IN SOIL TO PROMOTE SUSTAINABLE AGRICULTURE**

Collins, H.P., R.L. Cochran, R.A. Boydston, A. Alva, P. Hamm, and E. Riga. 2005. Soil Microbial Responses to Soil Fumigation and Mustard (*Brassica hirta*) Cover Crop in Potato Production. *Biology and Fertility of Soils*.  
<http://dx.doi.org/10.1007/s00374-005-0022-0>.

**0583 BREEDING AND GENETICS OF HOP**

Kenny, S.T. 2005. Photosynthetic Measurements in Hop (*Humulus*). *Acta Horticulturae*. 668:241-247.

**0795 ETIOLOGY, EPIDEMIOLOGY, AND CONTROL OF POWDERY MILDEW OF STONE FRUITS**

Grove, G.G. and J.L. Lunden. 2005. Use of Petroleum Derived Spray Oils in Washington Grapevine Powdery Mildew Management Programs. *Plant Health Progress*. doi: 10.1094/PHP-2005-0317-01-RS.

Walsh, D.B. and G.G. Grove. 2005. Repellency and Repulsiveness of Selected Agrichemicals to the Two-Spotted Spider Mite (*Tetranychus urticae*) on Grape Foliage. Online. *Plant Health Progress*. doi: 10.1094/PHP-2005-1228-01-RS.

**Northwestern Washington Research and Extension Center:**

**0336 INTEGRATED DISEASE CONTROL PROGRAMS FOR FRESH MARKET AND PROCESSING VEGETABLE CROPS IN WASHINGTON**

Okubara, P.A., K.E. Keller, M.T. McClendon, D.A. Inglis, K.E. McPhee, and C.J. Coyne. 2005. Y15\_999Fw, A Dominant SCAR Marker Linked to the Fusarium Wilt Race 1 (Fw) Resistance Gene in Pea. *Pisum Genetics*. 37:32-35.

**0595 INTEGRATED DISEASE MANAGEMENT OF SMALL-SEEDED VEGETABLE SEED CROPS IN WASHINGTON STATE**

du Toit, L.J. and P. Hernandez-Perez. 2005. Efficacy of Hot Water and Chlorine for Eradication of *Cladosporium variabile*, *Stemphylium botryosum*, and *Verticillium dahliae* from Spinach Seed. *Plant Disease*. 89:1305-1312.

du Toit, L.J., F.L. Crowe, M.L. Derie, R.B. Simmons, and G.Q. Pelter. 2005. Bacterial Blight of Carrot Seed Crops in the Pacific Northwest. *Plant Disease*. 89:896-907.

du Toit, L.J., M.L. Derie, and P. Hernandez-Perez. 2005. *Verticillium* Wilt in Spinach Seed Production. *Plant Disease*. 89:4-11.

Glawe, D.A., G.Q. Pelter, and L.J. du Toit. 2005. First Report of Powdery Mildew of Carrot and Parsley caused by *Erysiphe heraclei* in the Pacific Northwest. Online. *Plant Health Progress* doi:10.1094/PHP-2005-0114-01-HN.

Koike, S.T., M.E. Matheron, and L.J. du Toit. 2005. First Report of Leaf Spot of Spinach, caused by *Stemphylium botryosum*, in Arizona. *Plant Disease*. 89:1209.

### [Puyallup Research and Extension Center:](#)

#### **0154 WHOLE FARM DAIRY AND BEEF SYSTEMS FOR ENVIRONMENTAL QUALITY**

Kincaid, R.L., D.K. Garikipati, T.D. Nennich, and J.H. Harrison. 2005. Effect of Grain Source and Exogenous Phytase on Phosphorus Digestibility in Dairy Cows. *Journal of Dairy Science*. 88:2893-2902.

Nennich, T.D., J.H. Harrison, L.M. VanWieringen, D. Meyer, A.J. Heinrichs, W.P. Weiss, N.R. St. Pierre, R.L. Kincaid, D.L. Davidson, and E. Block. 2005. Prediction of Manure and Nutrient Excretion from Dairy Cattle. *Journal of Dairy Science*. 88:3721-3733.

VanWieringen L.M., J.H. Harrison, T. Nennich, D.L. Davidson, L. Morgan, S. Chen, M. Bueler, and F. Hoisington. 2005. Manure Management Effects on Grass Production, Nutritive Content, and Soil Nitrogen for a Grass Silage Based Dairy Farm. *Journal of Environmental Quality*. 34:164-173.

#### **0230 SUSTAINING LOCAL FOOD SYSTEMS IN A GLOBALIZING ENVIRONMENT: FORCES, RESPONSES, IMPACTS.**

Ostrom, M. and D. Jackson-Smith. 2005. Defining a Purpose: Diverse Farm Constituencies and Publicly Funded Agricultural Research and Extension. *Journal of Sustainable Agriculture*. 27:57-76.

#### **0256 SOIL CONDITIONS, CROP PRODUCTIVITY, AND GROUNDWATER QUALITY IN SOME WESTERN WASHINGTON SOILS**

Kuo, S., B. Huang, and R. Bembenek. 2005. Effect of Long-Term Phosphorus Fertilization and Winter Cover Cropping on Soil Phosphorus Transformation in Less Eathered Soil. *Biology and Fertility of Soils*. 41:116-123.

#### **0307 FORESTED RIPARIAN BUFFERS: SPECIES, FUNCTION, AND MANAGEMENT FOR AGRICULTURE**

Henri, C. and J. Johnson. 2005. Riparian Forest Buffer Income Opportunities: A Hybrid Poplar Case Study. *Journal of Soil and Water Conservation*. 60:159-163.

#### **0308 TURFGRASS FERTILIZER AND PESTICIDE IMPACTS ON SURFACE WATER QUALITY**

Miltner, E.D., G.K. Stahnke, G.J. Rinehart, and P.A. Backman. 2005. Seeding of Creeping Bluegrass (*Poa annua L.f Reptans*) into Existing Golf Course Putting Greens. *HortScience*. 40:457-459.

Miltner, E.D., G.K. Stahnke, and G.J. Rinehart. 2005. Mowing Height, Nitrogen Rate, and Organic and Synthetic Fertilizer Effects on Perennial Ryegrass Quality and Pest Occurrence. *International Turfgrass Society Research Journal*. 10:982-988.

Rinehart, G.J., E.D. Miltner, and G.K. Stahnke. 2005. Nitrogen Rate and Mowing Height Effects on Turfgrass Quality and Thatch Development of Colonial, Velvet, and Dryland Bentgrasses. *International Turfgrass Society Research Journal*. 10:422-427.

### 0313 SYSTEMATICS AND BIOLOGY OF ECONOMICALLY IMPORTANT FUNGI IN THE PACIFIC NORTHWEST

Glawe, D.A., F.M. Dugan, Y. Liu, and J.D. Rogers. 2005. First Record and Characterization of a Powdery Mildew on a Member of the *Juncaginaceae*: *Leveillula taurica* on *Triglochin maritima*. *Mycological Progress*. 4:291-298.

Glawe, D.A. and G.A. Laursen. 2005. First Report of Powdery Mildew on *Caragana arborescens* and *Caragana grandiflora* in Alaska caused by *Microsphaera (Erysiphe) Palczewskii*. Online. *Plant Health Progress* doi:10.1094/PHP-2005-1017-01-BR.

Glawe, D.A. and G.G. Grove. 2005. First Report of Powdery Mildew of *Scabiosa columbaria* (Dove Pincushions) caused by *Erysiphe knautiae* in North America. Online. *Plant Health Progress* doi:10.1094/PHP-2005-1024-01-BR.

Glawe, D.A., G.Q. Pelter, and L.J. du Toit. 2005. First Report of Powdery Mildew of Carrot and Parsley caused by *Erysiphe heraclei* in the Pacific Northwest. Online. *Plant Health Progress* doi:10.1094/PHP-2005-0114-01-HN.

Hartney, S., D.A. Glawe, F. Dugan, and J. Ammirati. 2005. First Report of Powdery Mildew on *Corylus avellana* caused by *Phyllactinia guttata* in Washington State. Online. *Plant Health Progress* doi:10.1094/PHP-2005-1121-01-BR.

### 0327 THE DELAY IN POPULATION GROWTH: A NEW APPROACH FOR ESTIMATING TOXICITY OF PESTICIDES TO POPULATIONS OF PEST AND BENEFICIAL ORGANISMS

Adams, B.M., H.T. Banks, J.E. Banks, and J.D. Stark. 2005. Population Dynamics Models of Plant-Insect Herbivore-Pesticide Interactions. *Mathematical Biosciences*. 196:39-64.

Stark, J.D. and R. Crawford. 2005. Short-Term Effects of the Neem Insecticide, Margosan-O, and Chlorpyrifos on a Spider (*Araneida: Linyphiidae*) Community Inhabiting Turf Grass. *Biopesticides International*. 1:71-81.

Stark, J.D. and R.I. Vargas. 2005. Toxicity and Hazard Assessment of Fipronil to *Daphnia pulex*. *Ecotoxicology and Environmental Safety*. 62:11-16.

Stark, J.D. 2005. How Closely do Acute Lethal Concentration Estimates Predict Effects of Toxicants on Populations? *Integrated Environmental Assessment and Management*. 1:109-113.

Vargas, R.I., J.D. Stark, B. Mackey, and R. Bull. 2005. Weathering Trials of Amulet<sup>TM</sup>, Cue-Lure, and Amulet<sup>TM</sup> Methyl Eugenol Attract and Kill Stations with Male Melon Flies and Oriental Fruit Flies (*Diptera: Tephritidae*) in Hawaii. *Journal of Economic Entomology*. 98:1551-1559.

### 0387 MANAGEMENT OF DISEASES ON ORNAMENTAL BULBS AND CUT FLOWERS

Chastagner, G.A. and K.L. Riley. 2005. Sensitivity of Pathogen Inocula to Chlorine Dioxide Gas. *Acta Horticulturae*. 673:355-359.

### 0388 MANAGEMENT OF CHRISTMAS TREE ROOT ROTTS AND IDENTIFICATION OF TREES WITH SUPERIOR POSTHARVEST CHARACTERISTICS

Nielsen, U.B. and G.A. Chastagner. 2005. Variation in Postharvest Quality among Nordmann Fir Provenances. *HortScience*. 40:553-557.

Nielsen, U.B. and G.A. Chastagner. Genetic Variation in Postharvest Needle Retention among Nordmann Fir Families and Grafted Clones. *Scandinavian Journal of Forest Research*. 20:304-312.

#### **0569 NUTRIENT MANAGEMENT OF DAIRY SYSTEMS**

Kincaid, R.L., D.K. Garikipati, T.D. Nennich, and J.H. Harrison. 2005. Effect of Grain Source and Exogenous Phytase on Phosphorus Digestibility in Dairy Cows. *Journal of Dairy Science*. 88:2893-2902.

Nennich, T.D. , J.H. Harrison, L.M. VanWieringen, D. Meyer, A.J. Heinrichs, W.P. Weiss, N.R. St. Pierre, R.L. Kincaid, D.L. Davidson, and E. Block. 2005. Prediction of Manure and Nutrient Excretion from Dairy Cattle. *Journal of Dairy Science*. 88:3721-3733.

VanWieringen, L.M., J.H. Harrison, T. Nennich, D.L. Davidson, L. Morgan, S. Chen, M. Bueler, and F. Hoisington. 2005. Manure Management Effects on Grass Production, Nutritive Content, and Soil Nitrogen for a Grass Silage Based Dairy Farm. *Journal of Environmental Quality*. 34:164-173.

#### **0640 BREEDING SUPERIOR RASPBERRY CULTIVARS FOR THE PACIFIC NORTHWEST**

Moore, P.P. 2005. 'Cascade Nectar' Red Raspberry. *HortScience*. 40:256-257.

#### **0690 CHEMISTRY, BIOAVAILABILITY, AND TOXICITY OF CONSTITUENTS IN RESIDUALS AND RESIDUAL-TREATED SOILS**

Huang, B., S. Kuo, and R. Bembenek. 2005. Availability to Lettuce of Arsenic and Lead from Trace Element Fertilizers in Soil. *Water, Air, and Soil Pollution*. 164:223-239.

#### **0722 ORGANIC AMENDMENTS AND COVER CROPS IN SUSTAINABLE AGRICULTURAL SYSTEMS**

Bary, A.I., C.G. Cogger, D.M. Sullivan, and E.A. Myhre. 2005. Characterization of Fresh Yard Trimmings for Agricultural Use. *Bioresource Technology*. 96:1499-1504.

Benito, M., A. Masaguer, A. Moliner, C.G. Cogger, and A.I. Bary. 2005. Comparison of a Gas Detection Tubes Test with the Traditional Alkaline Trap Method to Evaluate Compost Stability. *Biology and Fertility of Soils*. 41:447-450.

Cogger, C.G. 2005. Compost Amendment of Soils Degraded by Urban Development: What are the Benefits? *Compost Science and Utilization*. 13:253-251.

#### **6724 THE BENEFITS AND COSTS OF USING ORGANIC WASTE STREAMS IN SMALL SCALE AGRICULTURE**

Gale, E.S., D.M. Sullivan, D. Hemphill, C.G. Cogger, A.I. Bary, and E.A. Myhre. 2005. Predicting Nitrogen Availability from Organic Amendments: Laboratory, Field, and Computer Simulation. *Western Nutrient Management Conference*. 5:236-243.

#### **Tree Fruit Research and Extension Center:**

#### **0156 MULTIDISCIPLINARY EVALUATION OF NEW APPLE CULTIVARS**

Miller, S.S., R.W. McNew, B.H. Barritt, L. Berkett, S.K. Brown, J.A. Cline, J.M. Clements, W.P. Cowgill, R.M. Crassweller, M.E. Garcia, D.W. Greene, G.M. Greene, C.R. Hampson, I. Merwin, D.D. Miller, R.E. Moran, C.R. Rom, T.R. Roper, J.R. Schupp, and E. Stover. 2005. Effect of Cultivar and Site on Fruit Quality as Demonstrated by the NE-183 Regional Project on Apple Cultivars. *HortTechnology*. 15:886-895.

Crasweller, R., R. McNew, A. Azarenko, B. Barritt, R. Belding, L. Berkett, S. Brown, J. Clemens, J. Cline, W. Cowgill, D. Ferree, E. Garcia, D. Greene, G. Greene, C. Hampson, I. Merwin, D. Miller, S. Miller, R. Moran, J. Obermiller, D. Rosenberger, C. Rom, T. Roper, J. Schupp, and E. Stover. 2005. Performance of Apple Cultivars in the 1995 NE-183 Regional Project Planting: In Growth and Yield Characteristics. *Journal of American Pomological Society*. 59:18-27.

#### **0260 DEVELOPING NEW APPLE CULTIVARS FOR WASHINGTON STATE**

Barritt, B.H. 2005. The Tall Spindle-Evolution of a Practical Apple Orchard System. *Compact Fruit Tree*. 38:22-23.

Du Bruille, J. and B. Barritt. 2005. Global Apple Study-A Comparison of Production Practices and Costs of Production in Leading Apple-Producing Countries. *Compact Fruit Tree*. 38:6-11.

Miller, S.S., R.W. McNew, B.H. Barritt, L. Berkett, S.K. Brown, J.A. Cline, J.M. Clements, W.P. Cowgill, R.M. Crasweller, M.E. Garcia, D.W. Greene, G.M. Greene, C.R. Hampson, I. Merwin, D.D. Miller, R.E. Moran, C.R. Rom, T.R. Roper, J.R. Schupp, and E. Stover. 2005. Effect of Cultivar and Site on Fruit Quality as Demonstrated by the NE-183 Regional Project on Apple Cultivars. *HortTechnology*. 15:886-895.

#### **0298 BIOREGULATION OF VEGETATIVE GROWTH AND FRUIT DEVELOPMENT IN APPLE, PEAR AND SWEET CHERRY FOR MAXIMUM PRODUCTION EFFICIENCY AND FRUIT QUALITY**

Drake, S.R., J.D. Hansen, D.C. Elfving, J. Tang, and S. Wang. 2005. Hot Water to Control Codling Moth in Sweet Cherries: Efficacy and Quality. *Journal of Food Quality*. 28:361-376.

Drake, S.R., T.A. Eisele, D.C. Elfving, M.A. Drake, S.L. Drake, and D.B. Visser. 2005. Effects of the Bioregulators Aminoethoxyvinylglycine and Ethephon on Brix, Carbohydrate, Acid, and Mineral Concentrations in Scarletspur Delicious Apple Juice. *HortScience*. 40:1421-1424.

Drake, S.R., T.A. Eisele, M.A. Drake, D.C. Elfving, S.L. Drake, and D.B. Visser. 2005. The Influence of Aminoethoxyvinylglycine and Ethephon on Objective and Sensory Quality of Delicious Apples and Apple Juice at Harvest and After Storage. *HortScience*. 40:2102-2108.

Elfving, D.C. and D.B. Visser. 2005. New Bioregulator Techniques for Managing Tree Fruit Growth and Production. *Compact Fruit Tree*. 38:20-21.

Elfving, D.C. and D.B. Visser. 2005. Cyclanilide Induces Lateral Branching in Apple Trees. *HortScience*. 40:119-122.

Elfving, D.C., D.B. Visser, and G.A. Lang. 2005. Effects of Prohexadione-Calcium on Growth and Flowering of Bing Sweet Cherry. *Acta Horticulturae*. 667:439-446.

#### **0366 UNDERSTANDING THE MOVEMENT PATTERNS AND DEMOGRAPHY OF PESTS AND THEIR NATURAL ENEMIES IN DECIDUOUS FRUIT IPM PROGRAMS**

Jones, V.P., C.C. Eastburn, T.D. Wilburn, and J.F. Brunner. 2005. Instar Specific Phenology of *Pandemis pyrusana* and *Choristoneura rosaceana* in Washington Apple Orchards. *Journal of Economic Entomology*. 98:862-874.

Jones, V.P., M.D. Doerr, J.F. Brunner, C.C. Eastburn, T.D. Wilburn, and N.G. Wiman. 2005. A Synthesis of Temperature-Dependent Developmental Rate for Obliquebanded Leafroller, *Choristoneura Rosaceana*, *Lepidoptera: Tortricidae*. *Journal of Insect Science*. 5:24.

**0367 BIOLOGY, EPIDEMIOLOGY, AND CONTROL OF *SPHAEROPSIS* ROT IN APPLE AND *PHACIDIOPYCNIS* ROT IN PEAR**

Kim, Y.K., C.L. Xiao, and J.D. Rogers. 2005. Influence of Culture Media and Environmental Factors on Mycelial Growth and Pycnidial Production of *Sphaeropsis Pycnidialis*. *Mycologia*. 97:25-32.

Liu, Q. and C.L. Xiao. 2005. Influence of Nutrient and Environmental Factors on Conidial Germination of *Potrebniomyces Pyri*. *Phytopathology*. 95:572-580.

Xiao, C.L. and R.J. Boal. 2005. Distribution of *Potrebniomyces Pyri* in the U.S. Pacific Northwest and its Association with a Canker and Twig Dieback Disease of Pear Trees. *Plant Disease*. 89:920-925.

Xiao, C.L. and R.J. Boal. 2005. A New Canker and Twig Dieback Disease of Apple and Crabapple Trees caused by *Sphaeropsis Pycnidialis* in Washington State. *Plant Disease*. 89:1130.

Xiao, C.L., J.D. Rogers, Y.K. Kim, and Q. Liu. 2005. *Phacidiopycnis washingtonensis* - A New Species Associated with Pome Fruits from Washington State. *Mycologia*. 97:464-473.

**0386 SECONDARY PESTS OF DECIDUOUS POME FRUITS**

Beers, E.H., J.F. Brunner, J.E. Dunley, M. Doerr, and K.R. Granger. 2005. Role of Neonicotinyl Insecticides in Washington Apple IPM. Part II. Nontarget Effects on Integrated Mite Control. *Journal of Insect Science*. 5:15 pp.

Brunner, J.F., E.H. Beers, J.E. Dunley, M.D. Doerr, and K.R. Granger. 2005. Role of Neonicotinyl Insecticides in Washington Apple Integrated Pest Management. Part I. Control of *Lepidopteran Pests*. *Journal of Insect Science*. 5:10.

Fernandez, D.E., E.H. Beers, J.F. Brunner, M. Doerr, and J.E. Dunley. 2005. Effects of Seasonal Mineral Oil Applications on the Pest and Natural Enemy Complexes of Apple. *Journal of Economic Entomology*. 98:1630-1640.

Lowery, D.T., M.J. Smirle, R.G. Footitt, C.L. Zurowski, and E.H. Beers. 2005. Baseline Susceptibilities to Imidacloprid for Green Apple Aphid and Spirea Aphid (*Homoptera: Aphididae*) Collected from Apple in the Pacific Northwest. *Journal of Economic Entomology*. 98:188-194.

**0431 BIOLOGICALLY INTENSIVE MANAGEMENT OF ARTHROPOD PESTS OF PEAR**

Beers, E.H., J.F. Brunner, J.E. Dunley, M. Doerr, and K.R. Granger. 2005. Role of Neonicotinyl Insecticides in Washington Apple IPM. Part II. Nontarget effects on Integrated Mite Control. *Journal of Insect Science*. 5:15.

Brunner, J.F., E.H. Beers, J.E. Dunley, M.D. Doerr, and K.R. Granger. 2005. Role of Neonicotinyl Insecticides in Washington Apple Integrated Pest Management. Part I. Control of *Lepidopteran Pests*. *Journal of Insect Science*. 5:14.

Fernandez, D.E., E.H. Beers, J.F. Brunner, M. Doerr, and J.E. Dunley. 2005. Effects of Seasonal Mineral Oil Applications on the Pest and Natural Enemy Complexes of Apple. *Journal of Economic Entomology*. 98:1630-1640.

**0452 ROOTSTOCK AND INTERSTEM EFFECTS ON POME- AND STONE-FRUIT TREES**

Autio, W.R., T.L. Robinson, B.H. Barritt, J.A. Cline, R.M. Crassweller, C.G. Embree, D.C. Ferree, M.E. Garcia, G.M. Greene, E.E. Hoover, R.S. Johnson, K. Kosola, J. Masabni, M.L. Parker, R.L. Perry, G.L. Reighard, S.D. Seeley, and M. Warmund. 2005. Performance of Fuji and McIntosh Apple Trees after 5 Years as Affected by Several Dwarf Rootstocks in the 1999 NC-140 Apple Rootstock Trial. *Journal of the American Pomological Society*. 59:202-214.

Autio, W.R., T.L. Robinson, B.H. Barritt, J.A. Cline, R.M. Crassweller, C.G. Embree, D.C. Ferree, M.E. Garcia, G.M. Greene, E.E. Hoover, R.S. Johnson, K. Kosola, J. Masabni, M.L. Parker, R.L. Perry, G.L. Reighard, S.D. Seeley, and M. Warmund. 2005. Performance of Fuji and McIntosh Apple Trees After 5 Years as Affected by Several Semidwarf Rootstocks in the 1999 NC-140 Apple Rootstock Trial. *Journal of the American Pomological Society*. 59:192-201.

#### **0747 SOIL AND MINERAL ELEMENT PROBLEMS IN WASHINGTON TREE FRUIT ORCHARDS**

Neilsen, G.H., D. Neilsen, S. Dong, P. Toivonen, and F.J. Peryea. 2005. Application of CaCl<sub>2</sub> Sprays Earlier in the Season May Reduce Bitter Pit Incidence in 'Braeburn' Apple. *HortScience*. 40:1850-1853.

Peryea, F.J. 2005. Comparison of Commercial Boron Spray Products Applied at the Pink Flowering Stage on 'Fuji' Apple. *HortScience*. 40:1487-1492.

Peryea, F.J. 2005. Sample Washing Procedures Influence Mineral Element Concentrations in Zinc-Sprayed Apple Leaves. *Communications in Soil Science and Plant Analysis*. 36:2923-2931.

#### **1090 MANAGEMENT OF DIRECT INSECT PESTS OF APPLE IN WASHINGTON TREE FRUIT ORCHARDS**

Beers, E.H., J.F. Brunner, J.E. Dunley, M. Doerr, and K.R. Granger. 2005. Role of Neonicotinyl Insecticides in Washington Apple IPM. Part II. Nontarget Effects on Integrated Mite Control. *Journal of Insect Science*. 5:15.

Brunner, J.F., E.H. Beers, J.E. Dunley, M.D. Doerr, and K.R. Granger. 2005. Role of Neonicotinyl Insecticides in Washington Apple Integrated Pest Management. Part I. Control of *Lepidopteran* Pests. *Journal Insect Science*. 5:10.

Curkovic, T. and J.F. Brunner. 2005. Residual and Sublethal Effects of an Attracticide Formulation on *Choristoneura Rosaceana*, *Pandemis pyrusana kearfott*, and *Cydia pomonella* (L.) (*Lepidoptera: Tortricidae*). *Crop Protection*. 24:637-641.

Doerr, M.D., J.F. Brunner, and V.P. Jones. 2005. Predictive Phenology Model for *Lacanobia subjuncta* (*Lepidoptera: Noctuidae*). *Journal of Economic Entomology*. 98:2100-2106.

Tomaszewska, E., V.R. Hebert, and J. Brunner. 2005. Evaluation of Pheromone Release from Commercial Mating Disruption Dispensers. *Journal of Agricultural and Food Chemistry*. 53:2399-2405.

#### **4089 BUILDING A MULTI-TACTIC PHEROMONE-BASED PEST MANAGEMENT SYSTEM IN WESTERN ORCHARDS**

Curkovic, T. and J.F. Brunner. 2005. Residual and Sublethal Effects of an Attracticide Formulation on *Choristoneura rosaceana*, *Pandemis pyrusana kearfott*, and *Cydia pomonella* (L.) (*Lepidoptera: Tortricidae*). *Crop Protection*. 24:637-641.

Kim, D.S. and H. Riedl. 2005. Effect of Temperature on Development and Fecundity of the Predaceous Plant Bug *Deraeocoris Brevis* Reared on *Ephestia Kuehniella* Eggs. *BioControl*. 50:881-897.

- Knight, A.L., R. Hilton, and D.M. Light. 2005. Monitoring Codling Moth (*Lepidoptera: Tortricidae*) in Apple with Blends of Ethyl (E,Z)-2,4-Decadienoate and Codlemone. *Environmental Entomology*. 34:598-603.
- Knight, A.L., P. Van Buskirk, R. Hilton, B. Zoller, and D.M. Light. 2005. Monitoring Codling Moth (*Lepidoptera: Tortricidae*) in Four Pear Cultivars with the Pear Ester. *Acta Horticulturae*. 594:120-125.
- Miliczky, E.R. and D.R. Horton. 2005. Densities of Beneficial Arthropods Within Pear and Apple Orchards Affected by Distance from Adjacent Native Habitat and Association of Natural Enemies with Extra-Orchard Host Plants. *Biological Control*. 33:249-259.
- Pszczolkowski, M.A. and J.J. Brown. 2005. Single Experience Learning in Host Fruit Selection by *Lepidopteran* Larvae. *Physiology and Behavior*. 86:168-175.
- Stark, J.D. 2005. How Closely Do Acute Lethal Concentration Estimates Predict Effects of Toxicants on Populations? *Integrated Environmental Assessment and Management*. 1:109-113.
- Tomaszewska, E., V.R. Hebert, J.F. Brunner, V.P. Jones, M. Doerr, and R. Hilton. 2005. Evaluation of Pheromone Release from Commercial Mating Disruption Dispensers. *Journal of Agricultural and Food Chemistry*. 53:2399-2405.
- Van Steenwyk, R.A. and F.G. Zalom. 2005. Food Quality Protection Act (FQPA) and Pest Management Alternatives to Organophosphate (OP) Insecticides: An Introduction. *California Agriculture*. 59:7-10.
- Welter, S., C. Pickel, J.G. Millar, F. Cave, R.A. Van Steenwyk, and J.E. Dunley. 2005. Use of Pheromones for Management of Insect Pests in California Agriculture. *California Agriculture*. 59:16-22.