

2007  
**Publications of Agricultural Research Center Scientists  
By Department and Project  
Agricultural Research Center Washington State University**

**Animal Sciences:**

**0181 Genetic Variation in Growth, Carcass Composition, Quality and Fatty Acid Composition of Wagyu, Angus, and Wagyu-Angus Cross Cattle.**

Williams, G. A., T. L. Ott, J. J. Michal, C. T. Gaskins, R. W. Wright, T. F. Daniels, and Z. Jiang. 2007. Development of a Novel Model for Mapping Cryptorchidism in Sheep and Initial Evidence for Association of INSL3 with the Defect. *Animal Genetics*. 38:189-191.

O'Fallon, J., J. R. Busboom, M. L. Nelson, and C. T. Gaskins. 2007. A Direct Method of Fatty Acid Methyl Ester (FAME) Synthesis: Application to Wet Meat Tissues, Oils, and Feedstuffs. *Journal of Animal Science*. 85:1511-1521.

**0374 Nutrient Management: Feeding for Reduced Excretion of Nutrients by Ruminants.**

O'Rourke, E. M., J. Michal, R. L. Kincaid, and J. H. Harrison. 2007. Use of Fecal Samples as a Tool to Monitor Phosphorus Excretion in Lactating Dairy Cows. *The Professional Animal Scientist*. 23:536-540.

Kincaid, R. L., and M. Socha. 2007. Effect of Cobalt Supplementation during Late Gestation and Early Lactation on Milk and Serum Measures. *Journey Dairy Science*. 90:1880-1888.

**0432 Pre- and Post-Harvest Manipulation of Palatability, Appearance, and Lipid Composition of Red Meat.**

Xiao, Q., T. A. Wibowo, X. L. Wu, J. J. Michal, J. J. Reeves, J. R. Busboom, G. H. Thorgaard, and Z. Jiang. 2007. A Simplified QTL Mapping Approach for Screening and Mapping of Novel AFLP Markers Associated with Beef Marbling. *Journal of Biotechnology*. 127:177-187.

**0536 Development of Ex Situ Bovine Spermatogenesis.**

Schmidt, J. A., J. de Avila, and D. J. McLean. 2007. Analysis of Gene Expression in Bovine Testis Tissue Prior to Ectopic Testis Tissue Xenografting and During the Grafting Period. *Biology of Reproduction*. 76:1071-1080.

**0567 Endocrine Control of Rainbow Trout Skeletal Muscle Growth and Development.**

Garikipati, D., E. Roalson, S. A. Ghar, and B. D. Rodgers. 2007. Characterization of Rainbow Trout Myostatin-2 Genes (rtMSTN-2a and -2b): Genomic Organization, Differential Expression, and Pseudogenization. *Endocrinology*. 148:2106-2115.

Rodgers, B. D., E. Roalson, G. M. Weber, S. B. Roberts, and F. W. Goetz. 2007. A Proposed Nomenclature Consensus for the Myostatin Gene Family. *American Journal of Physiology: Endocrinology and Metabolism*. 292:371-372.

Helterline, D. L., D. Garikipati, D. L. Stenkamp, and B. D. Rodgers. 2007. Embryonic and Tissue-Specific Regulation of Myostatin-1 and -2 Gene Expression in Zebrafish. *General and Comparative Endocrinology*. 151:90-97.

**0568 National Animal Genome Research Program.**

Jiang, Z., Z. Wang, T. Kunej, G. A. Williams, J. J. Michal, X. L. Wu, and N. S. Magnuson. 2007. A Novel Type of Sequence Variation - Multiple Nucleotide Length Polymorphisms Discovered in the Bovine Genome. *Genetics*. 76:403-407.

Williams, G. A., T. L. Ott, J. J. Michal, C. T. Gaskins, R. W. Wright, T. F. Daniels, and Z. Jiang. 2007. Development of a Novel Model for Mapping Cryptorchidism in Sheep and Initial Evidence for Association of INSL3 with the Defect. *Animal Genetics*. 38:189-191.

Wibowo, T. A., J. J. Michal, and Z. Jiang. 2007. The Corticotropin Releasing Hormone is a Promising Candidate Gene for Marbling and Subcutaneous Fat Depth in Beef Cattle. *Genome*. 50:939-945.

Jiang, Z., and M. F. Rothschild. 2007. Swine Genome Science Comes of Age. *International Journal of Biological Sciences*. 3:129-131.

Rothschild, M. F., Z. Hu, and Z. Jiang. 2007. Advances in QTL Mapping in Pigs. *International Journal of Biological Sciences*. 3:192-197.

Jiang, Z., S. S. Pappu, and M. F. Rothschild. 2007. Hitting the Jackpot Twice: Identifying and Patenting Gene Tests Related to Muscle Lipid Accumulation for Meat Quality in Animals and Type 2 Diabetes/Obesity in Humans. *Recent Patents on DNA and Gene Sequences*. 1:100-111.

Kunej, T., Z. Wang, J. J. Michal, T. F. Daniels, N. S. Magnuson, and Z. Jiang, 2007. Functional UQCRC1 Polymorphisms Affect Promoter Activity and Body Lipid Accumulation. *Obesity*. 15:2896-2901.

Chen, J., X. J. Yang, D. Xia, J. P. Chen, J. Wegner, Z. Jiang, and R. Q. Zhao. 2007. Sterol Regulatory Element Binding Transcription Factor 1 Expression and Genetic Polymorphism Significantly Affect Intramuscular Fat Deposition in the Longissimus Muscle of Erhualian and Sutai Pigs. *Journal of Animal Science*. 86:57-63.

**0627 Associations of the Basal Mitochondrial Transcription Machinery Genes with Marbling in Beef Cattle**

Jiang, Z., S. S. Pappu, and M. F. Rothschild. 2007. Hitting the Jackpot Twice: Identifying and Patenting Gene Tests Related to Muscle Lipid Accumulation for Meat Quality in Animals and Type 2 Diabetes/Obesity in Humans. *Recent Patents on DNA and Gene Sequences*. 1:100-111.

Kunej, T., Z. Wang, J. J. Michal, T. F. Daniels, N. S. Magnuson, and Z. Jiang. 2007. Functional UQCRC1 Polymorphisms Affect Promoter Activity and Body Lipid Accumulation. *Obesity*. 15:2896-2901.

**0672 Genetic and Functional Genomic Approaches to Improve Production and Quality of Pork.**

Jiang, Z., and M. F. Rothschild. 2007. Swine Genome Science Comes of Age. *International Journal of Biological Sciences*. 3:129-131.

Rothschild, M. F., Z. Hu, and Z. Jiang. 2007. Advances in QTL Mapping in Pigs. *International Journal of Biological Sciences*. 3:192-197.

Chen, J., X. J. Yang, D. Xia, J. P. Chen, J. Wegner, Z. Jiang, and R. Q. Zhao. 2007. Sterol Regulatory Element Binding Transcription Factor 1 Expression and Genetic Polymorphism Significantly Affect Intramuscular Fat Deposition in the Longissimus Muscle of Erhualian and Sutai Pigs. *Journal of Animal Science*. 86:57-63.

**0709 Mastitis Resistance to Enhance Dairy Food Safety.**

Fox, L. 2007. Long-Term *Staphylococcal Enterotoxin C1* Exposure Induces Soluble Factor-Mediated Immunosuppression by Bovine CD4 and CD8 T Cells. *Infection and Immunity*. 75:260-269.

**0764 Enhancing the Global Competitiveness of U.S. Meats.**

O'Fallon, J., J. R. Busboom, M. L. Nelson, and C. T. Gaskins. 2007. A Direct Method of Fatty Acid Methyl Ester (FAME) Synthesis: Application to Wet Meat Tissues, Oils, and Feedstuffs. *Journal of Animal Science*. 85:1511-1521.

Xiao, Q., T. A. Wibowo, X. L. Wu, J. J. Michal, J. J. Reeves, J. R. Busboom, G. H. Thorgaard, and Z. Jiang. 2007. A Simplified QTL Mapping Approach for Screening and Mapping of Novel AFLP Markers Associated with Beef Marbling. *Journal of Biotechnology*. 127:177-187.

**0858 Investigation of Food Animal Disease Problems in the State of Washington.**

Panther, K. E., L. F. James, T. L. Wierenga, C. C. Gay, E. S. Motteram, S. T. Lee, D. R. Gardner, J. A. Pfister, M. H. Ralphs, and B. L. Stegelmeier. 2007. Research on Lupine-Induced 'Crooked Calf Disease' at the Poisonous Plant Research Laboratory: Past, Present, and Future. *Poisonous Plants: Global Research and Solutions*. 58-65.

Gay, C. C., A. Tibary, K. E. Panther, K. L. Mealey, J. M. Gay, S. W. Hjartarson, E. Motteram, T. Wierenga, and L. F. James. 2007. Lupine-Induced Crooked Calf Diseases: Plasma Disposition of Lupine Alkaloids Following Repeated Challenge in Cattle that have given Birth to Affected Calves or Those that have Borne Normal Calves. *Poisonous Plants: Global Research and Solutions*. 151-155.

Gay, C. C., K. E. Panther, E. Motteram, J. M. Gay, H. Hantz, T. Wierenga, and T. Platt. 2007. Risk Factors for Lupine-Induced Crooked Calf Disorder in East-Central Washington State. *Poisonous Plants: Global Research and Solutions*. 156-164.

Ralphs, M. H., K. E. Panther, C. Gay, E. Motteram, and S. T. Lee. 2007. Cattle Grazing Velvet Lupine (*Lupinus leucophyllus*): Influence of Associated Forages, Alkaloid Levels and Population Cycles. *Poisonous Plants: Global Research and Solutions*. 401-406.

Pfister, J. A., S. T. Lee, K. E. Panther, E. S. Motteram, and C. C. Gay. 2007. Effects of Experience and Lactation on Lupine Consumption by Cattle. *Poisonous Plants: Global Research and Solutions*. 407-410.

Gay, C. C., K. E. Panther, E. S. Motteram, J. M. Gay, T. Wierenga, and T. Platt. 2007. Effect of Shade on Alkaloid Content of *Lupinus leucophyllus*. *Poisonous Plants: Global Research and Solutions*. 411-413.

Gay, C. C., E. S. Motteram, K. E. Panther, and T. Wierenga. 2007. Year-to-Year Variation in Alkaloid Concentration in *Lupinus leucophyllus* growing on the Scablands of Central Washington. *Poisonous Plants: Global Research and Solutions*. 414-419.

Lee, S. T., D. Cook, K. E. Panther, D. R. Gardner, M. H. Ralphs, E. S. Motteram, J. A. Pfister, and C. C. Gay. 2007. Lupine Induced "Crooked Calf Disease" in Washington and Oregon: Identification of the Alkaloid Profiles in *Lupinus sulfureus*, *Lupinus leucophyllus*, and *Lupinus sericeus*. *Journal of Agricultural and Food Chemistry*. 55:10649-10655.

**0862 Metabolic Relationships in Supply of Nutrients for Lactating Cows. (NC-1040)**

Sumner, J. S., and J. P. McNamara. 2007. Expression of Key Genes Controlling Lipolysis in Adipose Tissue of Holstein Dairy Cattle during the Dry Period and Lactation. *Journal of Dairy Science*. 90:5237-5246.

**0913 Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation.**

Fernyhough, M. E., E. Okine, G. Hausman, J. L. Vierck, and M. V. Dodson. 2007. Invited Review: PPAR Gamma and GLUT-4 Expression as Differentiation Markers for Preadipocyte Conversion to Become an Adipocyte. *Domestic Animal Endocrinology*. 33: 367-378.

**0957 Reproductive Performance in Domestic Ruminants.**

Conforti, V. A., D. M. de Avila, N. S. Cummings, K. J. Wells, H. Ulker, and J. J. Reeves. 2007. The Effectiveness of a CpG Motif-Based Adjuvant (CpG ODN 2006) for LHRH Immunization. *Vaccine*. 25:6537-6543.

**4956 Sterilization Vaccine for Cattle.**

Conforti, V. A., D. M. de Avila, N. S. Cummings, K. J. Wells, H. Ulker, and J. J. Reeves. 2007. The Effectiveness of a CpG Motif-Based Adjuvant (CpG ODN 2006) for LHRH Immunization. *Vaccine*. 25:6537-6543.

**7862 Adrenergic Regulation of Adipose Tissue Lipolysis in Transition Dairy Cattle.**

Sumner, J. S., and J. P. McNamara. 2007. Expression of Key Genes Controlling Lipolysis in Adipose Tissue of Holstein Dairy Cattle during the Dry Period and Lactation. *Journal of Dairy Science*. 90:5237-5246.

**Biological Systems Engineering:**

**0371 Novel Processes and Technologies for Food and Agricultural Commodities.**

Kong, F., J. Tang, B. Rasco, and C. Crapo. 2007. Kinetics of Salmon Quality Changes During Thermal Processing. *Journal of Food Engineering*. 83:510-520.

Kong, F., J. Tang, B. Rasco, and C. Crapo. 2007. Salt Effect on Heat Induced Physical and Chemical Changes of Salmon Fillet '*Oncorhynchus gorbuscha*'. *Food Chemistry*. 106:957-966.

Kong, F., J. Tang, B. Rasco, C. Crapo, and S. Smiley. 2007. Quality Changes of Salmon '*Oncorhynchus gorbuscha*' Muscle During Thermal Processing. *Journal Food Science*. 72:S103-111.

Pandit, R. B., J. Tang, F. Liu, and G. G. Mikhaylenko. 2007. A Computer Vision Method to Locate Cold Spots in Foods in Microwave Sterilization Processes. *Pattern Recognition*. 40:3667-3676.

Pandit, R. B., J. Tang, F. Liu, and M. J. Pitts. 2007. Development of a Novel Approach to Determine Heating Pattern using Computer Vision and Chemical Marker (M-2) Yield. *Journal of Food Engineering*. 78:522-528.

**0450 The Science and Engineering for a Biobased Industry and Economy.**

Chi, Z., Z. Wen, B. Hu, C. Frear, and S. Chen. 2007. Production of Omega-3 Polyunsaturated Fatty Acids from Cull Potato Using a High Density Algae Culture Process. *Applied Biochemistry and Biotechnology*. 137:805-815.

Hu, B., and S. Chen. 2007. Pretreatment of Methanogenic Granules for Immobilized Hydrogen Fermentation, *International Journal of Hydrogen Energy*. 32:3266-3273.

- Liao, W., Y. Liu, and S. Chen. 2007. A New Approach of Pellet Formation of a Filamentous Fungus-*Rhizopus oryzae*. *Bioresource Technology*. 98:3415-3423.
- Liao, W., Y. Liu, and S. Chen. 2007. Studying Pellet Formation of a Filamentous Fungus-*Rhizopus oryzae* to Enhance Organic Acid Production. *Applied Biochemistry and Biotechnology*. 137:689-701.
- Liao, W., Y. Liu, Z. Wen, C. Frear, and S. Chen. 2007. Studying the Effects of Reaction Conditions on Components of Dairy Manure and Cellulose Accumulation using Dilute Acid Treatment. *Bioresource Technology*. 98:1992-1999.
- Liu, C., and S. Chen. 2007. Utilization of Condensed Distillers Solubles as Nutrient Supplement for Production of Nisin and Lactic Acid from Whey. *Applied Biochemistry and Biotechnology*. 137:875-884.
- 0467 Improvement of Thermal and Alternative Processes for Foods.**
- Buranasompob, A., J. Tang, J. R. Powers, J. Reyes, S. Clark, and B. G. Swanson. 2007. Lipoxygenase Activity in Walnuts and Almonds. *LWT-Food Science Technology*. 40:893-899.
- Cembali, T., M. Mari, R. J. Folwell, and C. D. Clary. 2007. Economic Analysis of Improvements in Asparagus Harvesters with a Simulation Model. *Transactions of the American Society of Agricultural Biological Engineers*. 50:789-794.
- Chung, H.-J., S. Wang, and J. Tang. 2007. Influence of Heat Transfer in Tube Methods on Measured Thermal Inactivation Parameters for "*Escherichia coli*". *Journal of Food Protection*. 70:851-859.
- Clary, C. D., T. Ball, E. Ward, S. Fuchs, J. E. Durfey, R. P. Cavalieri, and R. J. Folwell. 2007. Performance and Economic Analysis of a Selective Asparagus Harvester. *Applied Engineering in Agriculture*. 23:571-577.
- Clary, C. D., E. Mejia-Meza, S. Wang, and V. E. Petrucci. 2007. Improving Grape Quality using Microwave Vacuum Drying Associated with Temperature Control. *Journal of Food Science*. 72:E023-E028.
- Harte, F., S. Clark, and G. V. Barbosa-Canovas. 2007. Yield Stress for Initial Firmness Determination on Yogurt. *Journal of Food Engineering*. 80:990-995.
- Harte, F. M., S. R. Gurram, L. O. Luedecke, B. G. Swanson, and G. V. Barbosa-Canovas. 2007. Effect of High Hydrostatic Pressure and Whey Proteins on the Disruption of Casein Micelle Isolates. *Journal of Dairy Research*. 74:452-458.
- Juliano, P., S. Clark, T. Koutchma, M. Ouattara, J. W. Mathews, C. P. Dunne, and G. V. Barbosa-Canovas. 2007. Consumer and Trained Panel Evaluation of High Pressure Thermally Treated Scrambled Egg Patties. *Journal of Food Quality*. 30:57-80.
- Kong, F., J. Tang, B. Rasco, and C. Crapo. 2007. Kinetics of Salmon Quality Changes During Thermal Processing. *Journal of Food Engineering*. 83:510-520.
- Kong, F., J. Tang, B. Rasco, C. Crapo, and S. Smiley. 2007. Quality Changes of Salmon "*Oncorhynchus gorbuscha*") Muscle during Thermal Processing. *Journal of Food Science*. 72:S103-111.
- Nindo, C. I., J. R. Powers, and J. Tang. 2007. Influence of Refractance Window Evaporation on Quality of Juices from Small Fruits. *LWT-Food Science Technology*. 40:1000-1007.

- Nindo, C. I., and J. Tang. 2007. Refractance Window Technology: A Novel Contact Drying Method. *Dry Technology*. 25:37-48.
- Nindo, C. I., J. Tang, J. R. Powers, and P. S. Takhar. 2007. Rheological Properties of Blueberry Puree for Processing Applications. *LWT-Food Science and Technology*. 40: 292-299.
- Olivas, G. I., D. S. Mattinson, and G. V. Barbosa-Canovas. 2007. Alginate Coatings for Preservation of Minimally Processed 'Gala' Apples. *Postharvest Biology and Technology*. 45:89-96.
- Pandit, R. B., J. Tang, F. Liu, and G. Mikhaleenko. 2007. A Computer Vision Method to Locate Cold Spots in Foods in Microwave Sterilization Processes. *Pattern Recognition*. 40:3667-3678.
- Pandit, R. B., J. Tang, F. Liu, and M. Pitts. 2007. Development of a Novel Approach to Determine Heating Pattern using Computer Vision and Chemical Marker (M-2). *Journal of Food Engineering*. 78:522-528.
- Penna, A. L. B., S. R. Gurram, and G. V. Barbosa-Canovas. 2007. High Hydrostatic Pressure Processing on Microstructure of Probiotic Low-Fat Yogurt. *Food Research International*. 40:510-519.
- San Martin, M. F., D. R. Sepulveda, B. Altunakar, M. M. Gongora-Nieto, B. G. Swanson, and G. V. Barbosa-Canovas. 2007. Evaluation of Selected Mathematical Models to Predict the Inactivation of "*Listeria innocua*" by Pulsed Electric Fields. *LWT-Food Science Technology*. 40:1271-1279.
- San Martin-Gonzalez, M. F., J. J. Rodriguez, S. Gurram, S. Clark, B. G. Swanson, and G. V. Barbosa-Canovas. 2007. Yield, Composition, and Rheological Characteristics of Cheddar Cheese Made with High Pressure Processed Milk. *LWT-Food Science Technology*. 40:697-705.
- Setiady, D., C. Clary, F. Younce, and B. A. Rasco. 2007. Optimizing Drying Conditions for Microwave-Vacuum (MIVAC) Drying of Russet Potatoes ("*Solanum tuberosum*"). *Drying Technology*. 25:1483-1489.
- Sun, T., J. R. Powers, and J. Tang. 2007. Effect of Enzymatic Macerate Treatment on Rutin Content, Antioxidant Activity, Yield, and Physical Properties of Asparagus Juice. *Journal of Food Science*. 72:S267-S271.
- Sun, T., J. R. Powers, and J. Tang. 2007. Enzyme-Catalyzed Change of Antioxidants Content and Antioxidant Activity of Asparagus Juice. *Journal of Agricultural and Food Chemistry*. 55: 56-60.
- Sun, T., J. R. Powers, and J. Tang. 2007. Loss of Rutin and Antioxidant Activity of Asparagus Juice Caused by a Pectolytic Enzyme Preparation from *Aspergillus niger*. *Food Chemistry*. 105:173-178.
- Sun, T., J. Tang, and J. R. Powers. 2007. Antioxidant Activity and Quality of Asparagus Affected by Microwave-Circulated Water Combination and Conventional Sterilization. *Food Chemistry*. 100:813-819.
- 0553 Development and Application of Models for the Analysis of Agricultural Systems in the State of Washington.**
- Badini, O., C. O. Stockle, J. W. Jones, R. Nelson, A. Kodio, and K. Moussa. 2007. A Simulation-Based Analysis of Productivity and Soil Carbon in Response to Time-Controlled Rotational Grazing in the West African Sahel Region. *Agricultural Systems*. 94:87-96.
- Bechini, L., and C. O. Stockle. 2007. Integration of a Cropping Systems Simulation Model and a Relational Database for Simple Farm-Scale Analyses. *Agronomy Journal*. 99:1226-1237.

- Benli, B., M. Pala, C. O. Stockle, and T. Oweis. 2007. Assessment of Winter Wheat Production under Early Sowing with Supplemental Irrigation in a Cold Highland Environment using CropSyst Simulation Model. *Agricultural Water Management*. 93:45-53.
- Kemanian, A.R., C. O. Stockle, and D. R. Huggins. 2007. Estimating Grain and Straw Nitrogen Concentration in Grain Crops Based on Aboveground Nitrogen Concentration and Harvest Index. *Agronomy Journal*. 99:158-165.
- Kemanian, A. R., C. O. Stockle, D. R. Huggins, and L. M. Viega. 2007. A Simple Method to Estimate Harvest Index in Grain Crops. *Field Crops Research*. 103:208-216.
- Oyarzun, R. A., C. O. Stockle, and M. D. Whiting. 2007. A Simple Approach to Modeling Radiation Interception by Fruit-Tree Orchards. *Agricultural and Forest Meteorology*. 142:12-24.
- Rivington, M., K. B. Matthews, G. Bellocchi, K. Buchan, C. O. Stockle, and M. Donatelli. 2007. An Integrated Assessment Approach to Conduct Analyses of Climate Change Impacts on Whole-Farm Systems. *Environmental Modeling and Software*. 22:202-210.
- 0554 Optimize Anaerobic Digestion System for Dairy Manure Treatment.**
- Hu, B., and S. Chen. 2007. Pretreatment of Methanogenic Granules for Immobilized Hydrogen Fermentation. *International Journal of Hydrogen Energy*. 32:3266-3273.
- Wen, Z., C. Frear, and S. Chen. 2007. Anaerobic Digestion of Liquid Dairy Manure using a Sequential Continuous-Stirred-Tank-Reactors System. *Journal of Chemical Technology and Biotechnology*. 82:758-766.
- 0630 Animal Waste Treatment, Management, and Utilization for Protection of Air and Water Qualities.**
- Chowdhury, N., J. A. Lalman, R. Seth, and P. Ndegwa. 2007. Biohydrogen Production by Mesophilic Anaerobic Fermentation of Glucose in the Presence of Linoleic Acid. *Journal of Environmental Engineering*. 133:1145-1152.
- Ndegwa, P. M., L. Wang, and V. K. Vaddella. 2007. Potential Strategies for Process Control and Monitoring of Stabilization of Dairy Wastewaters in Batch Aerobic Treatment Systems. *Process Biochemistry*. 42:1272-1278.
- Ndegwa, P. M., L. Wang, and V. K. Vaddella. 2007. Stabilization of Dairy Wastewater using Limited-Aeration Treatments in Batch Reactors. *Biosystems Engineering*. 97:379-385.
- 0990 Assuring Fruit and Vegetable Product Quality and Safety through the Handling and Marketing Chain.**
- Nindo, C. I., and J. Tang. 2007. Refractance Window Dehydration Technology: A Novel Contact Drying Method. *Drying Technology*. 25:37-48.
- Nindo, C. I., J. Tang, and J. R. Powers. 2007. Influence of Refractance Window Evaporation on Quality of Juices from Small Fruits. *LWT-Food Science and Technology*. 40:1000-1007.
- Sun, T., J. R. Powers, and J. Tang. 2007. Effect of Enzymatic Macerate Treatment on Rutin Content, Antioxidant Activity, Yield, and Physical Properties of Asparagus Juice. *Journal of Food Science*. 72:S267-S271.
- Sun, T., J. R. Powers, and J. Tang. 2007. Evaluation of the Antioxidant Activity of Asparagus, Broccoli, and their Juices. *Food Chemistry*. 105:101-106.

Sun, T., J. R. Powers, and J. Tang. 2007. Loss of Rutin and Antioxidant Activity of Asparagus Juice Caused by a Pectolytic Enzyme Preparation from *Aspergillus niger*. *Food Chemistry*. 105:173-178.

Sun, T., J. Tang, and J. R. Powers. 2007. Antioxidant Activity and Quality of Asparagus Affected by Microwave-Circulated Water Combination and Conventional Sterilization. *Food Chemistry*. 100:813-819.

**5378 Radio Frequency Energy as an Alternative to Methyl Bromide Fumigation for Controlling Pests in Stone Fruits and Nuts.**

Buranasompob, A., J. Tang, J. R. Powers, J. Reyes, S. Clark, and B. G. Swanson. 2007. Lipoxygenase Activity in Walnuts and Almonds. *LWT - Food Science and Technology*. 40:893-899.

Wang, S., M. Monzon, J. A. Johnson, E. J. Mitcham, and J. Tang. 2007. Industrial-Scale Radio Frequency Treatments for Insect Control in Walnuts I: Heating Uniformity and Energy Efficiency. *Postharvest Biology and Technology*. 45:240-246.

Wang, S., M. Monzon, J. A. Johnson, E. J. Mitcham, and J. Tang. 2007. Industrial-Scale Radio Frequency Treatments for Insect Control in Walnuts II: Insect Mortality and Product Quality. *Postharvest Biology and Technology*. 45:247-253.

**Center for Precision Agriculture Systems:**

**0551 Advancing Precision Agricultural Systems Through Automation, Sensing, Control, and Information Systems.**

Perry, E. M. and J. R. Davenport. 2007. Spectral and Spatial Differences in Response of Vegetation Indices to Nitrogen Treatments on Apple. *Computers and Electronics in Agriculture*. 59:56-65.

**Community and Rural Sociology:**

**0127 Local Agri-Food Systems in a Globalizing Context.**

Glenna, L., and R. A. Jussaume. 2007. Characteristics of Organic Farmers in Washington State Who Are Willing to Use GMOs. *Renewable Agriculture and Food Systems*. 22:118-124.

**0656 The Consequences of Visual Layout of Questionnaires for the Conduct of Mixed-Mode Surveys.**

Dillman, D. A., and J. D. Smyth. 2007. Design Effects in the Transition from Telephone to Web Surveys. *American Journal of Preventive Medicine*. 5:409-424.

Christian, L. M., D. A. Dillman, and J. D. Smyth. 2007. Helping Respondents Get it Right the First Time: The Influence of Words, Symbols, and Graphics in Web Surveys. *Public Opinion Quarterly*. 71:113-125.

Dillman, D. A., V. Lesser, R. Mason, J. Carlson, F. Willits, R. Robertson, and B. Burke. 2007. Personalization of Mail Surveys for General Public and Populations with Group Identity: Results from Nine Studies. *Rural Sociology*. 72:632-646.

Stern, M. J., D. A. Dillman, and J. D. Smyth. 2007. Visual Design, Order Effects, and Respondent Characteristics in a Self-Administered Survey. *Survey Research Methods*. 1:1-18.

**Crop and Soil Sciences:**

**0128 Management of Grain Quality and Security for World Markets.**

Han, I., B. G. Swanson, and B. Baik. 2007. Protein Digestibility of Selected Legumes Treated with Ultrasound and High Hydrostatic Pressure During Soaking. *Cereal Chemistry*. 84:518-521.

**0152 Characterizing Mass and Energy Transport at Different Scales.**

Zhuang, J., J. F. McCarthy, J. S. Tyner, E. Perfect, and M. Flury, 2007. In-situ Colloid Mobilization in Hanford Sediments under Unsaturated Transient Flow Conditions: Effect of Irrigation Pattern. *Environmental Science Technology*. 41:3199-3204.

**0196 Genetic and Molecular Analysis of the Stem Rust Resistance Genes Rpg1 and Rpg5: Mechanisms of Resistance and Signaling Pathways.**

Nirmala, J., S. Dahl, B. Steffenson, G. C. Kannangara, D. H. Vonwettstein, X. Chen, and A. Kleinhofs. 2007. Proteolysis of the Barley Receptor-Like Protein Kinase RPG1 is required for Rpg1 Mediated Stem Rust Resistance. *Proceedings of the National Academy of Sciences of the United States of America*. 104:10276-10281.

**0250 Cropping Systems Research for Low-Precipitation Dryland in Eastern Washington.**

Jones, S. S., S. R. Lyon, K. A. Balow, M. Gollnick, K. M. Murphy, T. D. Murray, X. Chen, C. Morris, K. Campbell, J. W. Burns, W. F. Schillinger, P. Reisenauer, and B. Goates. 2007. Registration of Bauermeister Wheat. *Crop Science*. 47:430-431.

Jones, S. S., S. R. Lyon, K. A. Balow, M. Gollnick, K. M. Murphy, T. D. Murray, X. Chen, K. Campbell, J. W. Burns, W. F. Schillinger, P. Reisenauer, and B. Goates. 2007. Registration of MDM Wheat. *Journal of Plant Registrations*. 1:104-106.

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