

**Agricultural Research Center  
College of Agricultural, Human, and Natural Resource Sciences  
Washington State University**

**Projects Approved by USDA/CSREES for FY 2006-2007  
By Department and Research Center**

**DEPARTMENTS:**

**Agricultural Research Center**

- 0556 Jointed Goatgrass: A Threat to U.S. Wheat Production, Ristow, S.S.
- 0557 Aquaculture, Idaho Washington, Ristow, S.S.
- 0558 Grass Seed Cropping Systems for a Sustainable Agriculture, Cavalieri, R.P.
- 0587 Jointed Goatgrass: A Threat to U.S. Wheat Production, Ristow, S.S.
- 0592 Aquaculture, Idaho and Washington, Ristow, S.S.
- 0600 Grass Seed Cropping Systems for a Sustainable Agriculture, ID, OR, and WA., Cavalieri, R.P.
- 0623 Aquaculture, Idaho and Washington, Ristow, S.S.
- 0625 Grass Seed Cropping Systems for a Sustainable Agriculture, ID, OR, and WA, Cavalieri, R.P.
- 0626 Jointed Goatgrass: A Threat to U.S. Wheat Production, Ristow, S.S.
- 0628 Development of Alternative Controls For Burrowing Shrimp, Ristow, S.S.
- 0642 Grass Seed Cropping Systems for a Sustainable Agriculture, Cavalieri, R.P.
- 0648 Aquaculture, Idaho and Washington, Ristow, S.S.
- 0651 Wine Grape Foundation Block, WA, Cavalieri, R.P.

0654 *Aegilops cylindrica* (Jointed Goatgrass) WA, Ristow, S.S.

0655 Development of Alternative Controls For Burrowing Shrimp, McCracken, V.A., Bollens, S.M., Patten, K.D.

7996 Multistate Research Coordination, Western Region, W-106, Cavalieri, R.P., Ristow, S.S.

9916 Administration of Agricultural Research Washington State, Cavalieri, R.P., McCracken, V.A.

**Animal Sciences**

0154 Whole Farm Dairy and Beef Systems for Environmental Quality, NE-1024, Harrison, J.H.

0167 Enhancement of Dietary Energy Use for Maintenance, Growth, and Lactation by Beef Cattle, Johnson, K.A.

0181 Genetic Variation in Growth, Carcass Composition, Quality and Fatty Acid Composition of Wagyu Angus and Wagyu-Angus Cross Cattle, Gaskins, C.T., Busboom, J.R., O'Fallon, J.V.

0304 Altering Ruminant Fermentation with Plant Extract, Nelson, M.L.

0374 Nutrient Management: Feeding for Reduced Excretion of Nutrients by Ruminants, Kincaid, R.L.

0432 Pre-and Post-Harvest Manipulation of Palatability, Appearance and Lipid Composition of Red Meat, Busboom, J.R., Nelson, M.L.

- 0536 Development of Ex Situ Bovine Spermatogenesis, McLean, D.J.
- 0567 Endocrine Control of Rainbow Trout Skeletal Muscle Growth and Development, Rodgers, B.D.
- 0568 National Animal Genome Research Program, NRSP-8, Jiang, Z., Neibergs, H.
- 0569 Nutrient Management of Dairy Systems, Harrison, J.H.
- 0627 Associations of the Basal Mitochondrial Transcription Machinery Genes with Marbling in Beef Cattle, Jiang, Z.
- 0658 Applied Animal Behavior and Welfare, NC-1029, Newberry, R.C
- 0668 Process Validation for the Production of Microbiologically Safe Meat Products, Mann, J.E.
- 0672 Genetic and Functional Genomic Approaches to Improve Production and Quality of Pork, NC-1037, Jiang, Z.
- 0706 Germ Cell and Embryo Development and Manipulation for the Improvement of Livestock, W-1171, Wright, R.W.
- 0709 Mastitis Resistance to Enhance Dairy Food Safety, NE-1009, Fox, L.K., Davis, W.C.
- 0764 Enhancing the Global Competitiveness of U.S. Red Meat, W-1177, Busboom, J.R.
- 0858 Investigation of Food Animal Disease Problems in the State of Washington, Fox, L.K., Hancock, D.D., Gay, J.M.
- 0862 Metabolic Relationships in Supply of Nutrients for Lactating Cows, NC-1009, McNamara, J.P.
- 0913 Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation, NC-1131, Dodson, M.V.
- 0957 Reproductive Performance in Domestic Ruminants, W-1112, Reeves, J.J., McLean, D.J., Jiang, Z.
- 4956 Sterilization Vaccine for Cattle, Reeves, J.J.
- 7862 Adrenergic Regulation of Adipose Tissue Lipolysis in Transition Dairy Cattle, McNamara, J.P.
- 8167 Emission Measurements of Ammonia, Methane, Nitrous Oxide and Particulates from Beef Production, Johnson, K.A., Westberg, H.H., Lamb, B. K., Kincaid, R.L., Harrison, J.H., Mount, G.H.
- Biological Systems Engineering**
- 0319 Snow Redistribution and Water Storage At a Watershed Scale: Field Investigation and WEPP Simulation, Wu, J.Q.
- 0371 Novel Processes and Technologies for Food and Agricultural Commodities, Tang, J., Cavalieri, R.P., Pitts, M.J., Rasco, B.A., Clark, S., Kang, D.H., Powers, J.R.
- 0450 The Science and Engineering for a Biobased Industry and Economy, S-1007, Chen, S.
- 0467 Improvement of Thermal and Alternative Processes for Food, NC-1023, Barbosa-Canovas, G.V., Powers, J.R., Tang, J., Clary, C.
- 0553 Development and Application of Models for the Analysis of Agricultural Systems in the State of Washington, Stockle, C.O.
- 0554 Optimize Anaerobic Digestion System for Dairy Manure Treatment, Chen, S.
- 0562 Research and Development for Biomass Processing and Bioproduct Production, Chen, S.
- 0573 Flowability Characteristics of Selected Food Powders, Barbosa-Canovas, G.V., Pitts, M.J., Cavalieri, R.P.

0630 Animal Waste Treatment, Management, and Utilization for Protection of Air and Water Qualities, Ndegwa, P.M. Chen, S., Beutel, M., Harrison, J. H., Koenig, R.T.

0664 Development of Useful and User Friendly Irrigation Management Tools for Improved Profitability and Water Quality, Peters, R.T., English, M.J., Neibling, H., Snyder, R., Hill, R.W.

0990 Assuring Fruit and Vegetable Product Quality and Safety through the Handling and Marketing Chain, NE-1008, Tang, J., Fellman, J.K., Pitts, M.J.

4674 Planning Workshop-Emerging Food Processing Technologies: from Lab Bench to the Table, Barbosa-Canovas, G.V.

5378 Radio Frequency Energy as an Alternative to Methyl Bromide Fumigation for Controlling Pests in Stone Fruits and Nuts, Tang, J., Wang, S., Mitcham, E. J., Armstong, J.W., Johnson, J.A.

6373 Improved Quarantine Treatments for Tropical Fruit Using Thermal Energy, Tang, J., Wang, S., Mitcham, E., Armstrong, J.

7319 Modeling Hydrology and Erosion under Winter Climatic Conditions of the Pacific Northwest: Modifying WEPP, Wu, J. Q.

8553 Measuring and Modeling Gaseous Losses of Nitrogen from Irrigated Crops in Central Washington, Stockle, C.O., Lamb, B. K., Mount, G.H., Kemanian, A. K.

#### [Center for Precision Agricultural Systems](#)

0551 Advancing Precision Agricultural Systems through Automation, Sensing, Control, and Information Systems, Pierce, F.J., Perry, E., Brunner, J.F., Clary, C., Davenport, J.R., Grove, G.G., Jones, V.P., Stevens, R.G., Pitts, M.J., Tarara, J.M.\*, Whiting, M.

#### [Center for Sustainable Agriculture and Natural Resources](#)

0414 A Proposed Study to Determine Agricultural Drainage Practices which Minimize Detrimental Effects on Salmonids, Feise, C.

0588 Organic Cropping Research for the Northwest, Granatstein, D.M., Miles, C.A., Feise, C.

0619 Organic Cropping Research for the Northwest, Granatstein, D.M., Miles, C.A.

0644 Organic Cropping Research for the Northwest, Granatstein, D.M., Miles, C.A.

0660 Research and Education Support for the Renewal of an Agriculture of the Middle, NC-1036, Feise, C.F.

#### [College of Veterinary Medicine](#)

0261 Enteric Diseases of Swine and Cattle: Prevention, Control and Food Safety, NC-1007, Besser, T.E., Gay, J.M., Hancock, D.D., Call, D.R., Cobbold, R.

#### [Community and Rural Sociology](#)

0127 Local Agri-Food Systems in a Globalizing Context, Jussaume, R.A.

0230 Sustaining Local Food Systems in A Globalizing Environment: Forces, Responses, Impacts, NE-1012, Ostrom, M., Jussaume, R.A.

0403 Local Food Choices, Eating Patterns, and Population Health, NC-1033, Jussaume, R.A.

0445 Population Change in Rural Communities, W-1001, Kirschner, A.R.

0576 Socioeconomic and Environmental Impacts of Agricultural Research and Extension, Zuiches, J.J.

0585 Socio-Economic and Environmental Benefits of Agricultural Research and Extension, Zuiches, J.J.

- 0656 The Consequences of Visual Layout of Questionnaires for the Conduct of Mixed-Mode Surveys, Dillman, D.A.
- 0671 Gender, Diversity, and Alternative Agrifood Systems in the Pacific Northwest, Goldberger, J.R.
- 0942 How Visual Design and Layout Influences Answers to Self-Administered Paper and Internet Questionnaires, Dillman, D.A.
- 0981 Changing Social Dynamics in Washington's Rural Areas, Kirschner, A.R.
- Crop and Soil Sciences**
- 0128 Management of Grain Quality and Security for World Markets, NC-213, Baik, B.K.
- 0152 Characterizing Mass and Energy Transport at Different Scales, W-1188, Flury, M., Wu, J.Q.
- 0175 Adaptation Studies of Cereal Varieties and Selections, Burns, J.W.
- 0196 Genetic and Molecular Analysis of the Stem Rust Resistance Genes Rpg1 and Rpg5: Mechanisms of Resistance and Signaling Pathways, Kleinhofs, A., von Wettstein, D.H., Steffenson, B.
- 0232 Breeding and Genetics of Winter Wheat, Jones, S.S., Murray, T.D., Baik, B.K., Chen, X.M.\*, Morris, C.F.\*, Campbell, K.G.\*
- 0250 Cropping Systems Research for Low-Precipitation Dryland in Eastern Washington, Schillinger, W.F., Young, D.L., Kennedy, A.C.\*, Paulitz, T.\*, Sharratt, B.S.\*, Wuest, S.B.\*
- 0251 Breeding of Value-Added Barley by Incorporation of Protein-Engineered Beta-Glucanases and Beta-Xylanases, von Wettstein, D.H.
- 0256 Soil Conditions, Crop Productivity and Groundwater Quality in Some Western Washington Soils, Kuo, S., Peryea, F.J., Miltner, E.D.
- 0257 Understanding and Managing Variability of Soil and Plant Nutrients in Irrigated Perennial Crop Systems, Davenport, J.R., Stevens, R.G., Keller, M., Olmstead, M., Peryea, F.J., Pierce, F.J.
- 0267 Colloid Mobilization and Transport through the Vadose Zone, Flury, M.
- 0277 Biochemical Basis of Wheat and Wild Oat Seed Quality, Fuerst, E.P., Gallagher, R.S., Morris, C.F.\*
- 0281 Alternate Crops for Irrigated Central Washington, Hang, A.N., Fransen, S.C., Baik, B.K.
- 0297 Effects of Herbicide Application Timing and Technique on Bohemian Knotweed (*Polygonum Bohemicum*) Shoot Growth and Rhizome Viability, Miller, T.W.
- 0308 Turfgrass Fertilizer and Pesticide Impacts on Surface Water Quality, Miltner, E.D., Stahnke, G.K., Cogger, C.G., Johnston, W.J.
- 0323 Remote Sensing and Geographic Information Systems for Land Management, Frazier, B.E., Rossi, R.E.
- 0332 Evaluation and Management of Turfgrass Species and Cultivars for Turf and Seed Production, Johnston, W.J., Stahnke, G.K., Miltner, E.D., Johnson, R.C.\*, Pan, W.L., McKean, W.T., Lewis, M., Edwards, L.
- 0334 Improving Spring Wheat Varieties for the Pacific Northwest, Kidwell, K.K., Burns, J.W., Chen, X.M.\*, Baik, B.K.
- 0350 Weed Control Research in Irrigated Vegetable and Speciality Crops, Boydston, R.A.\*, Parker, R.
- 0353 Soil Quality Changes with No-Till Management Adoption for Wind Erosion Control, Kennedy, A.C.\*
- 0359 Improving Wheat Quality in the State of Washington, Baik, B.K.

- 0373 Carbon and Nitrogen Cycling and Management in Alternative Cropping Systems, Pan, W.L., Frazier, B.E., Kidwell, K.K., Stevens, R.G., Young, F.L.\*, Johnston, W.J., McGuire, A., McKean, W., Yenish, J.P., Koenig, R.T., Stannard, M.E.
- 0385 Sorption and Availability of Metals and Radionuclides in Soils, Harsh, J.B., Flury, M.
- 0398 An Integrated Physical and Expression Map for Barley for Triticeae Improvement, Kleinhofs, A.
- 0410 A Comparative Analysis of the Sustainability of Farming Systems, Reganold, J.P., Andrews, P.K., Hinman, H.R.
- 0422 Ecologically-Based Management of Annual Weeds in Dryland Grain Production Systems of Eastern Washington, Burke, I.
- 0449 Molecular Characterization and Manipulation of the Wheat Genome for Crop Improvement, Gill, K.S., Chen, X.M.\*, Kleinhofs, A., Jones, S.S., Campbell, K.G.\*, Steber, C.\*
- 0520 Developing Tissue Nutrient Standards for Irrigated Wine Grapes in Central Washington, Davenport, J.R.
- 0546 International Cooperation for Agriculture Research in Central Asia and The Caucasus, Pan, W.L.
- 0552 PM-10 Particulate Emission Prediction and Control from Ag Land in the PNW, Schillinger, W.F.
- 0559 STEEP: Water Quality in the Pacific Northwest, Bezdicsek, D.F.
- 0560 Exotic Germplasm Conversion and Breeding Common Bean for Resistance to Abiotic and Biotic Stresses and to Enhance Nutritional Value, W-1150, Hang, A.N., Swanson, B.G.
- 0577 International Cooperation for Agriculture Research in Central Asia and The Caucasus, Pan, W.L., Campbell, K.G.\*
- 0578 PM-10 Particulate Emission Prediction and Control from Ag Lands in the PNW, Schillinger, W.F.
- 0579 The Strategic Use of Nitrogen Source, Placement and Timing to Optimize Dryland Wheat Production in Use Efficiency and End-Use Quality, Koenig, R.T.
- 0581 The Chemical and Physical Nature of Particulate Matter Affecting Air, Water, and Soil Quality, NC-1022, Harsh, J.B.
- 0583 Breeding and Genetics of Hop, Kenny, S.T., Eastwell, K.C., Grove, G.G., James, D.G.
- 0584 Integrated Management of Winter Annual Grass Weeds in Eastern Washington Dryland Crop Systems, Yenish, J.P., Huggins, D.\*, Burns, J.W., Young, F.L.\*
- 0591 STEEP: Water Quality in the Pacific Northwest, Koenig, R.T.
- 0598 Eolian Soils, Global Change, and Washington Agriculture, Brown, D.J., Frazier, B.E., Gaylord, D.R.
- 0614 STEEP: Water Quality in the Pacific Northwest, Koenig, R.T.
- 0617 International Cooperation for Agricultural Research in Central Asia and the Caucasus, Pan, W.L., Campbell, K.G.\*
- 0618 PM-10 Particulate Emission Prediction and Control from Agricultural Lands in the Pacific Northwest, Schillinger, W.F.
- 0629 Life and Death in Plants: Studies on Perennial Wheat as a Sustainable Alternative Cropping System, Jones, S.S., Murray, T.D.

- 0643 PM-10 Particulate Emission Prediction and Control from Agricultural Lands in the Pacific Northwest, Schillinger, W.F.
- 0645 Developing Wheat Varieties for Organic Agricultural Systems, Jones, S.S., Baik, B.K., Carpenter-Boggs, L., Goates, B.J.
- 0649 STEEP: Water Quality in the Pacific Northwest, Koenig, R.T.
- 0653 Life and Death in Plants: Studies on Perennial Wheat as a Sustainable Alternative Cropping System, Jones, S.S., Murray, T.D.
- 0657 International Cooperation for Agriculture Research in Central Asia and The Caucasus, Pan, W.L., Campbell, K.G.\*
- 0665 Agricultural Literacy, W-1006, Swan, M.K.
- 0689 Forage Management and Quality of Perennial Grasses as Stored Forage or Biofuel, Fransen, S.C., Collins, H.P., Hudson, T.\*, Vandmark, G.\*
- 0690 Chemistry, Bioavailability, and Toxicity of Constituents in Residuals and Residual-Treated Soils, W-1170, Kuo, S., Harsh, J.B., Miltner, E.D.
- 0715 Integrated Weed Management in Dryland Cropping Systems in Washington, Young, F.L.\*
- 0719 Supplemental Support for Assessing the End-Use Quality of Washington Wheat Breeding Samples, Morris, C.F.\*, McCurdy, A.R.
- 0722 Organic Amendments and Cover Crops in Sustainable Agricultural Systems and Urban Landscapes, Cogger, C.G., Bary, A.I., Koenig, R.T., Granatstein, D.M., Hummel, R.L.
- 0747 Soil and Mineral Element Problems in Washington Tree Fruit Orchards, Peryea, F.J.
- 0805 Weed Research in Irrigated Agronomic, Horticultural, and Specialty Crops in Washington, Parker, R.
- 0900 Soil Survey and Classification, Frazier, B.E., Rossi, R.E.
- 1006 Breeding and Genetics of Barley, Ullrich, S.E., Kleinhofs, A., von Wettstein, D.H., Burns, J.W., Baik, B.K., Chen, X.M.\*, Paulitz, T.\*, Kidwell, K.K.
- 1134 Plant Genetic Resource Conservation and Utilization, W-006, Jones, S.S., Coyne, C.J.\*, Johnson, R.C.\*, Clement, S.L.\*, Dugan, F.M. \*, Welsh, M.\*, Cavalieri, R.P., Bradley, V.\*, Greene, S. L.\*, Hellier, B.\*
- 1790 Breeding Dry Pea, Lentil and Chickpea Germplasm for Stress Tolerance, Disease Resistance and Quality, Muehlbauer, F.J.\*, McPhee, K.E.\*, Chen, W.\*
- 1851 Enhancing Winter Wheat For Coldhardiness; Studies to Increase Winter Hardiness, Skinner, D.\*, Allan, R.E.\*
- 3373 Low Temperature, Low Pressure Straw Pulping For Production of Linerboard, Corrugater Medium, Newsprint and Fertilizer, Pan, W.L.
- 3422 Various Strategies to Achieve Ecological and Economic Goals in the Transition Phase of Eastern Washington Organic Dryland Grain Production, Koenig, R.T.
- 4449 Molecular Characterization of a Major Gene-Rich Region of Wheat, Gill, K.S.
- 5422 Environmental Regulation of Seed Phenolics and Their Implication for Seed Band Persistence and Plant Fitness in *Avena fatua*, Fuerst, E.P., Kennedy, A.C.\*, Alldredge, J.R.
- 6297 Functional Analysis of the Barley Stem Rust Resistance Genes RPG1, RPG4, and RPGQ, Kleinhofs, A., Steffenson, B.

- 6724 The Benefits and Costs of Using Organic Waste Streams in Small Scale Agriculture, Cogger, C.G.
- 7232 Life and Death in Plants: Studies on Perennial Wheat as a Sustainable Alternative Cropping System, Jones, S.S.
- 7333 Mapping and Cloning High Temperature Adult Plant Stripe Rust Resistant Genes in Wheat, Kidwell, K.K., Campbell, K.G. \*, Santra, D.K., Chen, X.M.\*, Dubcovsky, J.
- 7703 Sustainability of Three Apple Production Systems: Organic, Convention, and Integrated, Reganold, J.P., Andrews, P.K.

### Entomology

- 0121 Biological Control in Pest Management Systems of Plants, W-1185, Piper, G.L.
- 0122 High Value Specialty Crop Pest Management, NRSP-4, Walsh, D.B.
- 0327 The Delay in Population Growth: A New Approach for Estimating Toxicity of Pesticides to Populations of Pest and Beneficial Organisms, Stark, J.D.
- 0337 Aphids: Ecology, Systematics, Biocontrol, Pike, K.S., Beers, E.H., Footitt, R.G., Tanigoshi, L.K., Miller, R., Pappu, H.R., Raworth, D., Stary, P., Unruh, T. \*, Von Dohlen, C.
- 0366 Improving IPM through Application of Applied Insect Ecology, Jones, V.P., Brunner, J.F., Unruh, T. \*, Horton, D. \*
- 0372 Agrochemical Impacts on Human and Environmental Health: Mechanisms and Mitigation, W-1045, Hebert, V., Felsot, A.S.
- 0381 Development of Integrated Management Systems for High-Value Specialty Crops in Central Washington, James, D.G., Kenny, S.T., Eastwell, K.C., Walsh, D.B., Snyder, W.E., Barbour, J.

- 0405 Potential of Insect Growth Regulators in the Pacific Northwest, Brown, J.J.
- 0415 Utilizing Complex Communities of Natural Enemies in Biocontrol, Snyder, W.E.
- 0430 Biological Control of Invasive Toadflaxes in Washington, Piper, G.L.
- 0431 Biologically Intensive Management of Arthropod Pests of Pear, Dunley, J.E., Brunner, J.F., Jones, V.P., Beers, E.H.
- 0455 Biological Diversity Studies of Arthropod Taxa, Zack, R.S.
- 0457 Understanding Transport and Fate of Pesticide Management Chemicals in Air, Hebert, V.
- 0458 From Genotype to Phenotype: Investigations of the Role of Gene Pathways in the Evolution of Phenotypic Plasticity, Corley, L.S.
- 0524 Biology and Integrated Management of Insect and Mite Pests of Wine Grapes, James, D.G.
- 0534 Innovative Management of Cutworms in Washington Vineyards, Walsh, D.B.
- 0543 Integrated Management of Arthropod Pests of Small Fruit Crops, Tanigoshi, L.K.
- 0604 Molecular Genetics of Honey Bee Subspecies and Selection and Breeding of New World Populations, Sheppard, W.S.
- 0631 The Genetic Basis for Phenotypic Plasticity in Insects, Corley, L.S.
- 0662 Reduction of Pesticide Use in Orchards through Management of Spray Application Technology, Felsot, A.S.
- 0676 Integrated Management of Arthropod Pests of Washington Pome Fruits, Brunner, J.F., Beers, E.H., Dunley, J.E., Alldredge, J.R.

- 1090 Management of Direct Insect Pests of Apple in Washington Tree Fruit Orchards, Brunner, J.F., Beers, E.H., Dunley, J.E., Jones, V.P., Landolt, P.J.\* , Gut, L.J., Judd, G.J.
- 3417 Natural Enemy Biodiversity and the Biological Control of Aphids, Snyder, W.E.
- 3499 Alternative Prey and Biocontrol by Generalist Predators, Snyder, W.E.
- 5505 Development of an IPM Program Against Wood Boring Insect Pests in Poplar Plantings, Brown, J.J.
- 7328 The Grand Fir Twig Borer, *Argyresthia* sp., a New Pest of Christmas Trees in the Pacific Northwest, Stark, J.C.
- Food Science and Human Nutrition**
- 0103 Goal Setting for Dietary Self-Management and Related Psychosocial Factors among Patients with Type 2 Diabetes Mellitus, Armstrong Shultz, J., Massey, L.K., Evans, M.A., Butkus, S., Cobett, C
- 0118 Vitamin B-6 Supplementation and Immune Function, Shultz, T.D.
- 0276 Parent and Household Influences on Calcium Intake among Preadolescents, W-1003, Edlefsen, M.S.
- 0286 Effect of Calcium-Containing Dairy and Nondairy Foods on Fat Accretion in Menopausal Women, Beerman, K.A.
- 0288 Microbiological and Chemical Factors Affecting Calcium Lactate Crystal Formation in Cheddar Cheese, Clark, S., Powers, J.R., Swanson, B.G., Yuksel, G.
- 0305 Improving the Safety and Quality of Food, Rasco, B.A.
- 0331 Dietary Astaxanthin in Inflammatory Disease: A Rheumatoid Arthritis Model in Dogs and Cats, Chew, B.P.
- 0369 Development of a New Rapid Method for the Estimation of *Escherichia coli* in Foods, Kang, D.H.
- 0370 Nutrition and Kidney Stones, Massey, L.K.
- 0522 Microbiology and Chemistry of Washington Wines, Edwards, C.G.
- 0531 Factors Influencing Wine and Wine Grape Quality in Washington, Harbertson, J.F.
- 0537 Factors Affecting the Quality of Washington Wine and Wine Grapes (*Vitis vinifera*), Harbertson, J.F., Edwards, C.G., Hendrix, W.G., Fellman, J.K., Keller, M., Tarara, J.M.\*
- 0607 *Lactobacillus helveticus* Enzyme Activity on Casein, Powers, J.R., Shultz, T.D., Clark, S.
- 0608 Sensory Evaluation and Chemical Analysis of Selected Wines and Foods, Ross, C.F.
- 0612 Viticultural and Winemaking Practices that Shape the Color Stability, Astringency and Total Phenolic Content of Washington Wines, Harbertson, J.F., Ross, C.F., Fellman, J.K., Keller, M.
- 0613 Determination of Tannin, Total Phenolics, Anthocyanins, and Polymeric Pigment Levels in Wines Produced in Washington, Harbertson, J.F.
- 0615 Assessment of Astringency in Washington State Wines Using Sensory and Chemical Methods, Harbertson, J.F., Ross, C.F.
- 0634 Effect of c9, t11-18:2 (Conjugated Linoleic Acid (CLA)) and Consumption of High Fat Dairy Products on Gene Expression in the Human Mammary Epithelial Cell, McGuire, M.K.
- 0666 An Integrated Approach to Prevention of Obesity in High Risk Families (from WDC5), W-1005, Armstrong Shultz, J.

- 0667 Role of Dietary Lutein in Enhancing Immune Response and Decreasing Oxidative Damage in Elderly Women, Chew, B.P., Park, J.S.
- 0675 Impact of Fining on the Sensory and Chemical Properties of White Wine, Ross, C.F.
- 0846 Enological and Viticultural Practices on Fermentation Microbiology, Chemistry, and Quality of Wines, Edwards, C.G., Tarara, J.M. \*, Fellman, J.K., Keller, M., Paznokas, J.L.
- 0905 Nutrient Bioavailability - Phytonutrients and Beyond, W-1002, Shultz, T.D.
- Horticulture and Landscape Architecture**
- 0038 Breeding Superior Strawberry Cultivars for the Pacific Northwest, Moore, P.P., Walters, T.W., Kempler, C., Finn, C.E.
- 0168 Gene Transfer for Potato Variety Development, Brown, C.R.\*, Hamm, P., Johnson, D., Love, S., Navarre, D.\*, Novy, N., Pavek, M.J., Riga, E., Vales, I.
- 0217 Cultural and Cultivar Studies for Alternative Crop Production in a Maritime Climate, Moulton, G.A.
- 0260 Developing New Apple Cultivars for Washington State, Barritt, B.H., Pusey, L.\*
- 0285 Environmental/Cultural Factors on Water Stress Resistance/Growth/Cold Hardiness of Landscape Plants, Hummel, R.L.
- 0298 Bioregulation of Vegetative Growth and Fruit Development in Apple, Pear, and Sweet Cherry for Maximum Production Efficiency and Fruit Quality, Elfving, D.C., McFerson, J., Whiting, M., Seavert, C., Fallahi, E., Curry, E.\*, Xiao, C.L., Whiting, M., Xiao, C.L.
- 0321 Calcium/Calmodulin-Mediated Signaling in Plants, Poovaiah, B.W.
- 0326 Enhance Market Quality by Improving Fruit Finish in Apple, Schrader, L.E.
- 0375 Vegetable Cropping System, Miles, C.A., Inglis, D.A., duToit, L.J, Koenig, R.T., Granatstein, D.M., Myers, J., Stone, A.G.
- 0377 Production Horticultural and Integrated Management Systems of Grapes, Tarara, J.M. \*, Keller, M., Olmstead, M., Harbertson, J.F.
- 0412 Development and Application of Harvesting and Processing Technologies for Production of Value Added Fruit and Vegetable Products, Clary, C., Cavalieri, R.P., Durfey, J.E., Fellman, J.K., Edwards, C.G., Pierce, F.J., Spayd, S.E., Willemsen, K., Tang, J.
- 0420 Integrating Whole-Tree Physiological, Horticultural, and Genetic Research in *Prunus* Tree Fruits, Whiting, M., Elfving, D.C., Grove, G.G., Howell, W.E., McFerson, J., Nunez-Elisea, R.
- 0427 Evaluation of Apple Cultivars for Hard Cider Production, Moulton, G.A.
- 0428 Grapes Yield Components and Quality, Keller, M., Bondada, B., Olmstead, M.A., Tarara, J.M.\*
- 0452 Rootstock and Interstem Effects on Pome and Stone Fruit Trees, NC-140, Whiting, M.
- 0461 Optimizing Tuber Set and Size Distribution for Seed, Fresh and Processing Markets, Knowles, N.R.
- 0519 Wine and Juice Grape Physiology and Production Systems, Keller, M., Tarara, J.M. \*, Bondada, B., Rogiers, S.Y.
- 0593 Mechanical Harvesting of Asparagus, Clary, C., Durfey, J.E., Cavalieri, R.P.
- 0596 Multi-State Evaluation of Winegrape Cultivars and Clones, NE-1020, Keller, M., Davenport, J.R.
- 0599 Development of Sustainable Viticulture Practices in the Pacific Northwest, Olmstead, M.A.

- 0622 Wine Grape Foundation Block, WA, Keller, M., Rayapati, N., Eastwell, K.C.
- 0624 Potato Cultivar Evaluation and Commercial Potato Seed Lot Trial, Pavek, M.J., Hiller, L.K., Trent, M.A.
- 0633 Berry Crop Water and Nutrient Management for Optimal Yield, and to Avoid Soil-Borne Disease and Nitrate Leaching, Walters, T.W.
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- 0637 Potato Variety Development and Improvement in the Northwest, Knowles, N.R., Pavek, M.J., Vales, M.I., Stark, J.C.
- 0640 Breeding Superior Raspberry Cultivars for the Pacific Northwest, Moore, P.P., Finn, C.E., Kempler, C., Martin, R.R.
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- 5324 Functional Analysis of a Novel Calcium and Calmodulin-regulated Receptor-Like Kinase in Plant Cold Tolerance, Poovaiah, B.W.
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- 0171 International Marketing Program for Agricultural Commodities and Trade, Wahl, T.I.
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0388 Management of *Phytophthora* Diseases on Christmas Trees and Identification of Trees with Superior Needle Retention, Chastagner, G.A.

0460 Improving Disease Management of Soilborne Diseases of Peas, Porter, L.D.\*

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- 0823 Control of Cereal Rusts of Wheat and Barley, Chen, X.M.\*
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- Department of Statistics**
- 0254 Evaluation of Methods Used to Analyze Resource Selection Data, Alldredge, J.R.
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- 0160 Interfacing Technological, Economic, and Institutional Principles for Managing Inter-Sector Mobilization of Water, W-1190, Huffaker, R.G., Yoder, J., Chouinard, H.H.
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- 0453 Nanotechnology of Lignocellulosics, Laborie, M.G.
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- 0437 Training Environment Stewards: Integrating Water Quality and Quantity Education from Mountain to Ocean, Gaolach, B.W.
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- 0424 Strategies for Ecological Pest Management in Cranberries, Patten, K.D.
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