

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

**Projects Approved by USDA/CSREES for FY 2003-2004
By Department and Research Center**



DEPARTMENTS:

AGRICULTURAL RESEARCH CENTER

- 0356 Jointed Goatgrass: A Threat to U.S. Wheat Production, SG, Ristow, S.S.
- 0358 Grass Seed Cropping Systems for a Sustainable Agriculture, SG, Cavalieri, R.P., Johnston, W.J.
- 0379 Aquaculture, Washington, SG, Ristow, S.S.
- 0393 Jointed Goatgrass: A Threat to U.S. Wheat Production, SG, Ristow, S.S.
- 0394 Grass Seed Cropping Systems for a Sustainable Agriculture, SG, Cavalieri, R.P.
- 0433 Aquaculture, Idaho Washington, SG, Ristow, S.S.
- 0434 Grass Seed Cropping Systems for a Sustainable Agriculture, SG, Cavalieri, R.P.
- 0436 Jointed Goatgrass: A Threat to U.S. Wheat Production, SG, Ristow, S.S.
- 0556 Jointed Goatgrass: A Threat to U.S. Wheat Production, SG, Ristow, S.S.

- 0557 Aquaculture, Idaho Washington, SG, Ristow, S.S.
- 0558 Grass Seed Cropping Systems for a Sustainable Agriculture, SG, Cavalieri, R.P.
- 7996 Multistate Research Coordination, Western Region, H, W-106, Cavalieri, R.P., Ristow, S.S.
- 9916 Administration of Agricultural Research - Washington State, H, Cavalieri, R.P., Ristow, S.S.

AGRICULTURAL AND RESOURCE ECONOMICS

- 0160 Agricultural Water Management Technologies, Institutions and Policies Affecting Economic Viability and Environmental Quality, H, W-190, Huffaker, R.G.
- 0218 Empirical Likelihood, Maximum Entropy, Estimation Equations, and other Computer Intensive Methods for Agricultural Economics, H, Mittelhammer, R.C., Wahl, T.I.
- 0227 Rural Communities and Public Lands in the West: Impacts and Alternatives, H, W-192, Holland, D.W.
- 0269 Dryland Grain Growers' Income Risk Management and Its Environmental Impacts, H, Wang, H.H.

H = Hatch, S = State, MS = McIntosh-Stennis, AH = Animal Health, SG = Special Grant, OG = Other Grant, CG = Competitive Grant, * = USDA/ARS

0275	Agricultural Production, Processing, Trade, and Environmental Quality, H, Shumway, C.R., Duval, Y.	0456	Improving the International Competitiveness of the Washington/Oregon and Michigan Asparagus Industries, SG, Folwell, R.J.
0278	Selecting Operational Parameters Which Both Impact and Monitor Agribusiness Performance, H, Duft, K.D.	0535	The Future Role of Agricultural Cooperatives in the Industrialized Food System, H, Chaddad, F.R., Cook, M.L., Iliopoulos, C.
0299	Fisheries Management and Marketing of Marine and Aquaculture Seafood, H, Matulich, S.C.	0539	Economics, Information, and Institutional Design for Natural Resources and the Environment, H, Yoder, J.
0317	Wine Grape Economic Research, S, Folwell, R.J.	0540	Collective Reputation: Firm Incentives and Empirical Analysis, H, McCluskey, J.J.
0343	Policy and Competitive Changes in Agricultural Transportation in Washington, H, Casavant, K.L.	0544	The Impacts of Policies Affecting Resources, H, Chouinard, H.H.
0347	Research Design and Managing Risk in Agricultural Conservation and Pest Management System, H, Young, D.L.	0547	Improving the International Competitiveness of the Washington/Oregon Asparagus Industries, H, Folwell, R.J.
0378	Improving the International Competitiveness of the Washington/Oregon and Michigan Asparagus Industries, SG, Folwell, R.J., Tang, J., Fellman, J.K., Powers, J.R.	0549	Analyzing the Competitive Position of the Washington Wine Grape Industry, H, Folwell, R.J.
0383	Public Policy and the Washington Economy: A General Equilibrium Approach to Economic Policy Analysis, H, Holland, D.W.	0570	Marketing, Trade, and Management of Fisheries and Aquaculture Resources, H, W-1004, Matulich, S.C.
0418	Improving the International Competitiveness of the Washington/Oregon and Michigan Asparagus Industries, SG, Folwell, R.J.	0806	Fruit and Vegetable Supply-Chain Management, Innovations, and Competitiveness, H, S-222, Schotzko, R.T.
0448	Benefits and Costs of Natural Resource Policies Affecting Public and Private Lands, H, W-1133, McCluskey, J.J., Wandschneider, P.R.	0998	Rural Economic Development: Alternatives in the New Competitive Environment, H, NE-1011, Holland, D.W.

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ANIMAL SCIENCES

- 0154 Environmental and Economic Impacts of Nutrient Management on Dairy Forage Systems, H, NE-132, Harrison, J.H.
- 0167 Enhancement of Dietary Energy Use for Maintenance, Growth, and Lactation by Beef Cattle, H, Johnson, K.A.
- 0181 Genetic Variation in Growth, Carcass Composition, Quality and Fatty Acid Composition of Wagyu Cattle, H, Gaskins, C.T., Busboom, J.R., O'Fallon, J.L.
- 0304 Altering Ruminant Fermentation with Plant Extract, H, Nelson, M.L.
- 0328 Investigation of Direct Fed Microbial (DFM) Products Based on Aspergillus Fermentation Extract, H, Calza, R.E.
- 0374 Nutrient Management: Feeding for Reduced Excretion of Nutrients by Ruminants, H, Kincaid, R.L.
- 0389 Genetic Aspects of Innate Immunity in Rainbow Trout, S, Ristow, S.S.
- 0432 Pre- and Post-Harvest Manipulation of Palatability, Appearance and Lipid Composition of Red Meat, H, Busboom, J.R.
- 0446 A Candidate Gene Approach for Mapping of Quantitative Trait Loci for Marbling in Wagyu X Limousin Crosses, H, Jiang, Z.
- 0536 Development of Ex Situ Bovine Spermatogenesis, H, McLean, D.J.
- 0538 Development of Ex Situ Bovine Spermatogenesis, S, McLean, D.J.

- 0567 Endocrine Control of Rainbow Trout Skeletal Muscle Growth and Development, H, Rodgers, B.D.
- 0568 National Animal Genome Research Program, H, NRSP-8, Jiang, Z.
- 0569 Nutrient Management of Dairy Systems, H, Harrison, J.H.
- 0706 Germ Cell and Embryo Development and Manipulation for the Improvement of Livestock, H, W-171, Wright, R.W.
- 0709 Mastitis Resistance to Enhance Dairy Food Safety, H, NE-1009, Fox, L.K., Davis, W.C.,*
- 0764 Enhancing the Global Competitiveness of U.S. Red Meat, H, W-1177, Busboom, J.R.
- 0862 Metabolic Relationships in Supply of Nutrients for Lactating Cows, H, NC-1009, McNamara, J.P.
- 0913 Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation, H, NC-131, Dodson, M.V.
- 0957 Reproductive Performance in Domestic Ruminants, H, W-112, Reeves, J.J.
- 4956 Sterilization Vaccine for Cattle, CG, Reeves, J.J.
- 6957 Sterilization Vaccine for Cattle, CG, Reeves, J.J., Bertrand, K.P.

APPAREL, MERCHANDISING AND INTERIOR DESIGN

- 0399 Community Economic Development by Merchandising, Producing, and Distributing Textiles and Sewn Products, H, W-194, Salusso, C.J.

BIOLOGICAL SYSTEMS
ENGINEERING

		0447	Micro-Irrigation: Management Practices to Sustain Water Quality and Agricultural Productivity, H, W-128, Fraisse, C.
0271	Preservation of Foods by Oscillating Magnetic Fields, H, Barbosa-Canovas, G.V., Swanson, B.G.	0450	The Science and Engineering for a Biobased Industry and Economy, H, S-1007, Chen, S.
0319	Field- and Catchment-Scale Hydrologic Modeling Using GIS and Simulation Models, H, Wu, J.Q.	0454	Advanced Water Management Practices to Sustain Irrigated Agriculture in Eastern Washington, H, Fraisse, C., Perry, E., Riga, E., Pierce, F.J., Davenport, J.R., Whiting, M., Alva, A.A.* , Stockle, C.O., Shock, C.C.*
0320	Coupled Heat and Moisture Transfer Finite Element Analysis in Food Products, H, Pitts, M.J.	0467	Improvement of Thermal and Alternative Processes for Food, H, NC-136, Barbosa-Canovas, G.V., Powers, J.R., Cavalieri, R.P., Swanson, B.G., Tang, J.
0341	Mechanical Dynamics in Agricultural Production, Harvesting and Postharvest Systems, H, Hyde, G.M., Thornton, R.E., Fellman, J.K., Cavalieri, R.P.	0553	Development and Application of Water and Nutrient Models for the Analysis of Agricultural Systems, H, Stockle, C.O.
0352	A Watershed Scale Study on No-Till Farming System for Reducing Sediment Delivery, H, Chen, S.	0554	Enhanced Anaerobic Digestion of Animal Manure with Nutrient Recovery, H, Chen, S.
0357	Use of Simulation Modeling and Other Computer-Based Tools for Decision Support in the Management of Agricultural Systems, H, Stockle, C.O.	0562	Research and Development for Biomass Processing and Bioproduct Production, S, Chen, S.
0364	Water and Nitrogen Use Efficiency of Potato Under Sprinkler and Drip Irrigation, S, Fraisse, C., Pierce, F.J.	0573	Physical Properties of Food Powders, H, Barbosa-Canovas, G.V.
0371	Studies of Using Microwave and Radio Frequency Energy in Food Safety, Phytosanitary and Quarantine Applications, H, Tang, J., Cavalieri, R.P., Pitts, M.J., Rasco, B.A., Clark, S., Kang, D.H., Li, B.*	0990	Technology and Principles for Assessing and Retaining Postharvest Quality of Fruits and Vegetables, H, NE-1008, Tang, J., Fellman, J.K.
0412	Development and Application of Harvesting and Processing Technologies for Production of Value Added Fruit and Vegetable Products, H, Clary, C.	3227	Non-Chemical Pest Control in Fruits and Nuts Using Electromagnetic Energy, OG, Tang, J., Hansen, J.D.* , Mitcham, E., Shellie, K.*

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- 3352 Improving Water Quality for Salmon Restoration through Integrated Research Education and Extension Efforts, NRI, Chen, S., Stockle, C.O., Leib, B.G.
- 4222 Integrated Nutrient Management Modeling for Dairy Production Systems Featuring Dynamics and Optimization, CG, Chen, S., Stockle, C.O., Harrison, J. H.
- 4378 Microstructures and Properties of High/Low Acyl Mixed Gellan Gels, CG, Tang, J., Swanson, B.G.
- 4674 Planning Workshop-Emerging Food Processing Technologies: From Lab Bench to the Table, OG, Barbosa-Canovas, G.V.
- 7319 Modeling Hydrology and Erosion under Winter Climatic Conditions of the Pacific Northwest: Modifying WEPP, NRI, Wu, J.Q.
- 7990 Measurement and Control of Fruit and Vegetable Impact Sensitivity, CG, Hyde, G.M.

CENTER FOR PRECISION AGRICULTURAL SYSTEMS

- 0333 Precision Agricultural Systems, S, Pierce, F.J., Davis, D.C.
- 0529 Estimates of Fruit Maturity, Crop Load and Yield by Reflectance Measurements, S, Perry, E.
- 0551 Advancing Precision Agricultural Systems Through Automation, Sensing, Control, and Information Systems, H, Pierce, F.J., Perry, E., Brunner, J.F., Clary, C., Davenport, J.R., Fraisse, C., Grove, G.G., Jones, V.P., Stevens, R.G., Pitts, M.J., Tarara, J.M.*, Whiting, M.

CENTER FOR SUSTAINING AGRICULTURE AND NATURAL RESOURCES

- 0414 A Proposed Study to Determine Agricultural Drainage Practices Which Minimize Detrimental Effects on Salmonids, S, Feise, C.
- 6194 Organic Cropping Research and Education for the Northwest, SG, Granatstein, D.M., Miles, C.A.

COLLEGE OF SCIENCES

- 0419 Postdoctoral Fellowship: Carbon Dioxide Induced Changes in Below Ground C and N Cycling in Grasslands, NRI, Gill, R.A.*

COMMUNITY AND RURAL SOCIOLOGY

- 0127 Local Dimensions of the Globalization of Food and Agricultural Marketing Systems, H, Jussaume, R.A.
- 0230 Sustaining Local Food Systems in A Globalizing Environment: Forces, Responses, Impacts, H, NE-1012, Ostrom, M.
- 0403 Systems Analyses of the Relationships of Agriculture and Food Systems to Community Health, H, NC-1001, Jussaume, R.A.
- 0445 Population Change in Rural Communities, H, W-1001, Kirschner, A.R.
- 0585 Socio-Economic and Environmental Benefits of Agricultural Research and Extension, S, Zuiches, J.J.

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- 0942 How Visual Design and Layout Influences Answers to Self-Administered Paper and Internet Questionnaires, H, Dillman, D.A.
- 0981 Changing Social Dynamics in Washington's Rural Areas, H, Kirschner, A.R.
- 3230 Enhancing the Viability of Local Agri-Food Systems, CG, Jussaume, R.A., Schotzko, R.T.
- 4179 Understanding, Evaluating, and Improving Direct Marketing Systems for Small Farms, OG, Ostrom, M., Holland, D.W., Foltz, J.C., Lev, L.C., DePhelps, C.R., Zenz, L.K.
- 0250 Cropping Systems Research for Low-Precipitation Dryland in Eastern Washington, H, Schillinger, W.F., Young, D.L., Kennedy, A.C.*, Paulitz, T.*, Sharratt, B.S.*, Wuest, S.B.*, Williams, J.D.*, Wysocki, D.J.*
- 0251 Breeding of Value-Added Barley by Incorporation of Protein-Engineered Beta-Glucanases, S, von Wettstein, D.H., Ullrich, S.E.
- 0256 Soil Conditions, Crop Productivity and Ground Water Quality in Some Western Washington Soils, H, Kuo, S., Harsh, J.B., Bezdicek, D.F., Miltner, E.D.
- 0257 Developing Site Specific Approaches for Crop Nutrient Management in Irrigated Ag Systems, H, Davenport, J.R., Stevens, R.G.
- 0267 Sorption and Transport in Poraus Media at Different Scales, H, Flury, M.
- 0277 Biochemical Basis of Wheat and Wild Oat Seed Quality, H, Fuerst, E.P., Gallagher, R.S., Morris, C.F.*
- 0281 Alternate Crops for Irrigated Central Washington, H, Hang, A.N., Fransen, S.C., Kenny, S.T.
- 0282 Germplasm and Cultivar Development of Hop, H, Kenny, S.T., Grove, G.G., James, D.G.
- 0297 Management of Riparian Weeds in Western Washington, H, Miller, T.W.
- 0306 PM-10 Particulate Emission Prediction and Control from Ag Land in the PNW Columbia Plateau, SG, Schillinger, W.F., Young, D.L., Claiborn, C.S., Busacca, A.J., Pan, W.L., Lamb, B.K., Veseth, R., Frazier, B.E., Esser, A.D.

CROP AND SOIL SCIENCES

- 0152 Characterization of Flow and Transport Processes in Soils at Different Scales, H, W-188, Flury, M., Wu, J.Q.
- 0175 Adaptation Studies of Cereal Varieties and Selections, H, Burns, J.W.
- 0182 Impact of No Till on Soil Quality Physical, Chemical, and Microbial Properties, H, Bezdicek, D.F., Albrecht, S., Huggins, D.*
- 0196 Molecular Markers for Barley Disease Resistance Genes in Barley, H, Kleinhofs, A., von Wettstein, D.H., Steffenson, B.
- 0232 Breeding and Genetics of Winter Wheat, H, Jones, S.S., Murray, T.D., Carter, B.P., Chen, X.M.*, Morris, C.F.*, Campbell, K.G.*

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0308	Characteristics of Calcareous Sands Used for Turfgrass Root Zones, H, Miltner, E.D., Stahnke, G.K., Cogger, C.G., Kuo, S., Johnston, W.J.	0373	Carbon and Nitrogen Cycling and Management in Alternative Cropping Systems, H, Pan, W.L., Frazier, B.E., Kidwell, K.K., Stevens, R.G., Young, F.L.* , McKean, W.
0309	Spectral Reflectance and Spatial Analysis of Plant Stress Indicators in Vitis, H, Davenport, J.R., Perry, E.	0376	Integrated Management of Winter Annual Grass Weeds in Eastern Washington Dryland Crop Systems, H, Yenish, J.P., Huggins, D.*, Burns, J.W., Young, F.L.*
0323	Remote Sensing for Land Management, H, Frazier, B.E., Busacca, A.J., Pan, W.L., Carter, B.P.	0382	PM-10 Particulate Emission Prediction and Control from Agricultural Lands in the Pacific Northwest, SG, Schillinger, W.F.
0332	Evaluation and Management of Turfgrass Species and Cultivars, H, Johnston, W.J., Stahnke, G.K., Miltner, E.D., Johnson, R.C.*, Pan, W.L., Bragg, D. R.*	0384	STEEP: Solutions to Environmental and Economic Problems, SG, Bezdicek, D.F.
0334	Improving Spring Wheat Varieties for the Pacific Northwest, H, Kidwell, K.K., Carter, B.P., Burns, J.W., Chen, X.M.*, Paulitz, T.*, Morris, C.F.*, Campbell, K.G.*, Steber, C.*, Dubcovsky, J., Bosque-Perez, N.	0385	Sorption and Transport of CS in Soils, H, Harsh, J.B., Flury, M.
0350	Weed Control Research in Irrigated Vegetable and Specialty Crops, S, Boydston, R.A.*, Parker, R.	0397	Risk Assessment of Increased Soilborne Disease Pressure in Glyphosate Tolerant Wheat Production, NRI, Kidwell, K.K.
0351	STEEP: Solutions to Environmental and Economic Problems, SG, Bezdicek, D.F.	0398	An Integrated Physical and Expression Map for Barley for Triticeae Improvement, NRI, Kleinhofs, A.
0353	Soil Quality Changes with No-Till Management Adoption for Wind Erosion Control, S, Kennedy, A.C.*	0400	Biology, Ecology, and Integrated Management of Weeds in Potato Rotation Cropping Systems, H, Yenish, J.P.
0359	Improving Wheat Quality in the State of Washington, H, Carter, B.P.	0406	Characterizing Weed Population Variability for Improved Weed Management Decision Support Systems to Reduce Herbicide Use, H, NC-202, Parker, R.
0363	Nutrient Management for Improved Crop Yield and Quality for Dryland Cropping Systems of Eastern Washington, H, Koenig, R.T.	0410	A Comparative Analysis of the Sustainability of Farming Systems, H, Reganold, J.P., Andrews, P.K., Hinman, H.R.

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0413	International Cooperation for Agriculture Research in Central Asia and The Caucasus, SG, Lumpkin, T.A., Andrews, P.K., Hinman, H.R.	0578	PM-10 Particulate Emission Prediction and Control from Agricultural Lands in the PNW, SG, Schillinger, W.F.
0421	PM-10 Particulate Emission Prediction and Control from Agricultural Lands in the Pacific Northwest Columbia Plateau, SG, 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, H, Koenig, R.T.
0422	Ecologically-Based Management of Annual Weeds in Dryland Grain Production Systems of Eastern Washington, H, Gallagher, R.S.	0581	The Chemical and Physical Nature of Particulate Matter Affecting Air, Water, and Soil Quality, H, NC-1022, Harsh, J.B.
0435	STEEP: Solutions to Environmental and Economic Problems, SG, Bezdicek, D.F.	0584	Integrated Management of Winter Annual Grass Weeds in Eastern Washington Dryland Crop Systems, H, Yenish, J.P., Huggins, D.*, Burns, J.W., Young, F.L.*
0449	Molecular Characterization and Manipulation of the Wheat Genome for Crop Improvement, H, Gill, K.S., Kidwell, K.K., Kleinhofs, A., Jones, S.S., Campbell, K.G.*, Steber, C.*	0598	Eolian Soils, Global Change, and Washington Agriculture, H, Busacca, A.J., Frazier, B.E., Gaylord, D.L., Meinert, L.D.
0520	Developing Tissue Nutrient Standards for Irrigated Wine Grapes in Central Washington, S, Davenport, J.R.	0664	Seed Biology, Technology, and Ecology, H, W-168, Warner, R.L.
0546	International Cooperation for Agriculture Research in Central Asia and The Caucasus, SG, Pan, W.L.	0688	Developing Crops and Cropping Systems for Moisture-Limiting Environments, H, Chevalier, M.M., Ullrich, S.E.
0552	PM-10 Particulate Emission Prediction and Control from Ag Land in the PNW, SG, Schillinger, W.F.	0689	Forage Quality and Management of Alfalfa and Grass in the Columbia Basin, H, Fransen, S.C., Woodward, T.*, Stevens, R.G.
0559	STEEP: Water Quality in the Pacific Northwest, SG, Bezdicek, D.F.	0690	Chemistry and Bioavailability of Waste Constituents in Soils, H, W-170, Kuo, S.
0577	International Cooperation for Agriculture Research in Central Asia and The Caucasus, SG, Pan, W.L., Campbell, K.G.*	0715	Integrated Weed Management in Dryland Cropping Systems in Washington, S, Young, F.L.*
		0722	Organic Amendments and Cover Crops in Sustainable Agricultural Systems, H, Cogger, C.G., Bary, A.I., Miller, T.W., Granatstein, D.M., Muehleisen, D.P.*

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0747	Nutrient Management in Washington Tree Fruit Orchards, H, Peryea, F.J.	4449	Molecular Characterization of a Major Gene-Rich Region of Wheat, CG, Gill, K.S.
0805	Weed Research in Irrigated Agronomic, Horticultural, and Specialty Crops in Washington, S, Parker, R.	6197	Molecular Genetics of the Barley Stem Rust Resistance Gene Families, CG, Kleinhofs, A.
0900	Soil Survey and Classification, H, Busacca, A.J., Frazier, B.E., Gessler, P.	6703	Sustainability of Three Apple Production Systems, CG, Reganold, J.P., Andrews, P.K.
1006	Breeding and Genetics of Barley, H, Ullrich, S.E., Kleinhofs, A., von Wettstein, D.H., Kidwell, K.K., Burns, J.W., Chen, X.M.*, Cook, R.J., Baik, B.K.	6724	The Benefits and Costs of Using Organic Waste Streams in Small Scale Agriculture, SG, Cogger, C.G., Ostrom, M., Bary, A.I., Carkner, R.W., Bristow, P.R., Miles, C.A., Stone, A.G., Sullivan, D.M., Hemphill, D.
1134	Plant Genetic Resource Conservation and Utilization, H, W-006, Jones, S.S., Hannan, R.M.*, Johnson, R.C.*, Clement, S.L.*, Dugan, F.M.*, Welsh, M.*, Cavaliere, R.P., Bradley, V.*, Coyne, C.J.*, Greene, S.L.*, Hellier, B.*	7198	Cloning and Characterization of the Barley Stem Rust Resistance Genes RPG4 and RPGQ, NRI, Kleinhofs, A.
1790	Breeding Dry Pea, Lentil and Chickpea Germplasm for Stress Tolerance, Disease Resistance and Quality, S, Muehlbauer, F.J.*, McPhee, K.E.*, Chen, W.*	7232	Life and Death in Plants: Studies on Perennial Wheat as a Sustainable Alternative Cropping System, SG, Jones, S.S., Murray, T.D.
1851	Enhancing Winter Wheat for Coldhardiness, S, Skinner, D.*, Allan, R.E.*	7703	Sustainability of Three Apple Production Systems: Organic, Conventional, and Integrated, NRI, Reganold, J.P., Andrews, P.K.
3151	Production of Recombinant Procollagen in Transgenic Barley Grain, CG, von Wettstein, D.H.	8251	Leucocyanidin Reductase and Condensing Enzyme in Proanthocyanidin Synthesis, CG, von Wettstein, D.H.
3373	Low Temperature, Low Pressure Straw Pulping For Production of Linerboard, Corrugator Medium, Newsprint and Fertilizer, NRI, Pan, W.L.	8449	Molecular Characterization of a Major Gene-Rich Region of Wheat, NRI, Gill, K.S.
3422	Various Strategies to Achieve Ecological and Economic Goals in the Transition Phase of Eastern Washington Organic Dryland Grain Production, OG, Gallagher, R.S., Bezdicek, D.F., Hinman, H.R.		

ENTOMOLOGY

0121	Biological Control in Pest Management Systems of Plants, H, W-1185, Piper, G.L.
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0122	A National Agricultural Program to Clear Pest Control Agents for Minor Uses, H, NRSP-4, Walsh, D.B.	0381	Development of Integrated Management Systems for High Value Specialty Crops in Central Washington, H, James, D.G., Kenny, S.T., Eastwell, K.C., Walsh, D.B., Snyder, W.E., Barbour, J.
0206	Development of Crop Protection Chemicals, S, Walsh, D.B., Eastwell, K.C., James, D.G.	0386	Secondary Pests of Deciduous Pome Fruits, H, Beers, E.H., Brunner, J.F., Dunley, J.E., Jones, V.P.
0270	Biology and Control of Arthropod Pests of Berry Crops, H, Tanigoshi, L.K., Moore, P.P., Antonelli, A.L.	0391	Biology and Management of Mealybugs in Washington Wine Grape Vineyards, S, James, D.G.
0315	Biology and Integrated Management of Insect and Mite Pests of Wine Grapes, S, James, D.G., Walsh, D.B.	0392	Biology and Management of Mealybugs in Washington Wine Grape Vineyards, S, Walsh, D.B.
0327	Ecological and Toxicological Approaches to Estimate Effects of Pesticides to Nontarget Organisms, H, Stark, J.D., Banks, J.E., Wennergren, U.	0405	Potential of Insect Growth Regulators for Controlling Insect Pests of the Pacific Northwest, H, Brown, J.J.
0337	Aphids: Ecology, Systematics, Biocontrol, H, Pike, K.S., Footitt, R.G.*, Pappu, H., Schreiber, A.A.*, Thomas, P.E.*, Stary, P.*, Unruh, T.*	0415	Utilizing Complex Communities of Natural Enemies in Biocontrol, H, Snyder, W.E.
0339	Development of Integrated Arthropod Management Systems for Irrigated Crops in Central Washington, S, James, D.G., Kenny, S.T., Parker, R., Felsot, A.S.	0416	Molecular Genetics of Honey Bee Subspecies and Selection and Breeding of New World Populations, H, Sheppard, W.S.
0349	Managing Agrochemical Behavior under Drip Irrigation Systems, H, Felsot, A.S., James, D.G.	0426	Evaluations of Airborne Herbicide Residues on Wine Grape Production, S, Hebert, V., Felsot, A.S.
0366	Understanding the Movement Patterns and Demography of Pests and Their Natural Enemies in Deciduous Fruit IPM Programs, H, Jones, V.P., Brunner, J.F., Unruh, T.*, Horton, D.,*	0430	Enhancement of Dalmatian Toadflax Biological Control in Washington, H, Piper, G.L.
0372	Mechanisms and Mitigation of Agrochemical Impacts on Human and Environmental Health, H, W-045, Hebert, V.	0431	Biologically-Intensive Management of Arthropod Pests of Pear, H, Dunley, J.E., Brunner, J.F., Jones, V.P., Beers, E.H.
		0440	Characterization of Cellular Proliferation in a Polyembryonic Parasitoid Wasp, H, Corley, L.S.

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- 0455 Biological Diversity Studies of Arthropod Taxa, H, Zack, R.S.
- 0457 Understanding Transport and Fate of Pesticide Management Chemicals in Air: Integrated Field Monitoring with Laboratory Reactivity Studies, H, Hebert, V., Felsot, A.S., Brunner, J.F., Miller, G.C.
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