Stacked Rotations and Other Management Strategies for Weed, Disease and Insect Control in Direct Seed Systems - Dr. Dwayne Beck, Agronomist / Manager, Dakota Lakes Research Farm, South Dakota State University, Pierre, SD. Dr. Beck’s research focuses on development of no-till systems for dryland and irrigated cropland in central South Dakota. His research emphasis is on crop rotation to minimize weed, disease, and insect problems while increasing potential profitability. The Dakota Lakes Research Farm consists of 850 acres of land of which 280 acres is irrigated. An additional 380 acres of land is rented for research purposes. The entire operation is managed using no-till techniques. The Farm Website (www.dakotalakes.com) provides in-depth access to the research results.

Soil Organic Carbon: Benefits of Direct Seeding to Productivity and the Environment - Dr. Don Reicosky, USDA-ARS Soil Scientist, N. Central Soil Conservation Research Lab., Morris, MN. Dr. Reicosky has been involved in research for the past 38 years. He has authored more than 120 publications in scientific journals and given more than 230 presentations both nationally and internationally. His primary responsibility has been to conduct basic research on tillage and residue management, plant water stress, and crop water use efficiency to result in a better understanding of soil and plant management factors affecting tillage and residue management, crop water use, soil water quality, and to show practical application of the results. A major recent research focus in the past decade has been on tillage and residue management as related to soil quality and global change.

Put Your Marketing on Autopilot and Free Up Your Time to Manage Your Farm - Benjamin Riensche, Direct Seed Grower and former Wall Street Analyst, Jesup, Iowa. Ben is a partner in a father-son crop farming operation in Northeast Iowa and Southern Minnesota. The farm is all under no-tilled or minimum till and has grown from 1,800 to 7,000 acres since 1993. He holds a BS degree in Ag Business and an MBA in finance and international business. He has had wide experience in the financial industry, including: working as a credit analyst at the Bankers Trust Co. of Des Moines and Wells Fargo; Assoc. Dir. of Corporate Finance with the United Bank of Switzerland in their Wall Street, Chicago and Basel, Switzerland offices, working with Fortune 500 clients; and being chosen for an Eisenhower Fellowship to Hungary to assist in their agriculture’s transition to a market-based system – and continues to serve on their International Advisory Board. Ben was chosen by Top Producer magazine as their “Top Producer of the Year” in 2001 and now pens a monthly column for the magazine called “The Profit Doctor.”

Principles and Management Strategies for Higher Disturbance Direct Seed Systems - Kevin Anderson, Direct Seed Grower, Developer of the Anderson Opener as President/Owner of Anderson Machine Inc., and Co-Owner of Horsch Anderson USA, Andover, SD. He farms over 5000 acres under direct seeding in northeast South Dakota. Primary rotation crop have been corn, wheat, soybeans. Kevin has been building and marketing the Anderson Openers for planting systems worldwide through Anderson Machine Inc. since 1986. Production of the complete planting system through Horsch Anderson USA was initiated in 1999.

Economic Strategies for Managing Risk in the Transition to Direct Seed Systems in the Pacific Northwest - Dr. Doug Young, WSU Agricultural Economist, Pullman, WA. Dr. Young obtained a Ph. D in agricultural economics at Oregon State University. He is currently Professor of Agricultural Economics at Washington State University where he has been employed since 1976. His recent research areas include the economics of soil, water and air quality, risk management, and the economics of pest management. He has been a leader in researching the economics of direct seed cropping systems in the Inland Pacific Northwest.
**Principles and Management Strategies for Lower Disturbance Direct Seed Systems - Dr. John Baker**, Agricultural Engineer, Developer of the Cross Slot Opener, and CEO of Baker No-Tillage Ltd., Feilding, New Zealand. Dr. Baker holds a PhD in agricultural engineering, a MS degree in soil science and a BS degree in agricultural science. He spent 30 years researching no-till systems at Massey University, including 10 years as Director of the Massey University Agricultural Machinery Research Centre. In 1995, he and two fellow university staff resigned to form Baker No-Tillage Ltd and CINTRE (the team’s research wing). He has published over 80 scientific papers, and authored or co-authored 5 books related to no-till technologies. For 27 years, he has operated his own farm, now leased to CINTRE. The farm has operated on a 100% no-tillage double- (and at times triple-) cropping basis the last 20 years, making it one of the oldest continuous no-till farms in New Zealand. He invented the “Baker Boot” and led the team that developed the Cross Slot™ no-tillage technologies, which have won several national awards in New Zealand.

**Effects of the Residue Wheel and Other Residue Management Strategies on Direct Seed Drill Performance - Dr. Mark Siemens**, Agricultural Engineer, USDA-Agricultural Research Service Columbia Plateau Conservation Research Center. Pendleton, OR. Dr. Siemens has been with the ARS since 1999 and his research focuses on agricultural machine design and soil conservation systems for sustainable production. For the last three years, he has concentrated his efforts on studying residue management strategies for direct seed systems. He is a co-inventor of a U.S. patented attachment for hoe-type no-till drills, a device which has been shown to improve seeding performance.

**Weed Management Strategies for Clearfield Wheat Systems Across PNW Precipitation Zones - Dr. Dan Ball**, Weed Scientist, Oregon State University Columbia Basin Agricultural Research Center, Pendleton, OR. Dr. Dan Ball has been with OSU at Pendleton, Oregon for over 11 years, with research and Extension responsibilities in weed science. His research has focused on the impact of crop production practices on weeds in cereal grains, weed management in dryland cropping systems, and more recently with weed management in grass seed production east of the Cascades. He is a native of Kansas and received a B.S. degree in Crop Protection from Kansas State University. He received a Ph.D. degree in Weed Science in 1987 from the University of Wyoming. He has authored or coauthored over 20 refereed articles and Extension bulletins, and over 30 abstracts and special reports pertaining to weed management issues in the Pacific Northwest.

**Evaluation of Glyphosate Formulations for Burndown in Direct Seed Systems - Dr. Joe Yenish**, Extension Weed Scientist, Washington State University, Pullman, WA. Dr. Yenish has been with WSU since 1996. His responsibilities include weed management in dryland cropping systems of eastern Washington, with an emphasis on direct cropping systems. Prior to coming to WSU, he worked extensively on tillage effects on weed management. Dr. Yenish was raised on a family farm in southern Minnesota. He received a B.S. in Agronomy, 1981, North Dakota State University; M.S. in Agronomy, 1990, University of Wisconsin-Madison; and Ph.D. in Crop Science, 1994, North Carolina State University.

**Alternatives to Glyphosate as Part of a Resistance Management Strategy in Direct Seed Systems - Dr. Donn Thill**, Weed Scientist, University of Idaho, Moscow, ID. Dr. Thill, a native of Uniontown, WA, received his BS and MS degrees in agronomy from Washington State University and a PhD in crop science from Oregon State University. He is currently Professor of weed science and Chair of Crop and Weed Science Division in the Department of Plant, Soil, and Entomological Science in the College of Agriculture and Life Sciences at the University of Idaho, where he has worked for 22 years. He teaches courses in weed biology, herbicide fate and mode of action, and pesticides in the environment. His research includes weed management in direct seed systems, herbicide resistant weeds and crops, post-harvest residue management in Kentucky bluegrass, and weed management in small grain cereals.
Building Direct Seed Partnerships with Landlords: Developing Strategies to Work with Individual Landlords - Determining What is Important to Them - Steve Riggers. Steve and his brother Nathan operate the 4,200-acre Riggers Brothers Farms in an 18- to 24-inch precipitation zone in the Craigmont / Nezperce area of North Central Idaho. Much of their farm is cash rented. They began direct seeding winter wheat in 1982. Since the mid-1990’s, they have direct seeded all crops including canola and pulses, and have also been able to eliminate burning as a residue management tool. Their main crops are canola, winter wheat, hard red and white spring wheat, malting and feed barley, dry peas and lentils and Kentucky bluegrass seed. They currently use a Flexi-coil 5000 air drill. The air cart is also used with a 50 foot broadcast boom to top dress fertilizer in the spring. Combines are equipped with high speed, fine cut choppers, and a heavy harrow is used in the fall and occasionally in the spring. Steve has served on boards of various agriculture organizations, including the Pacific Northwest Direct Seed Association.

Building Direct Seed Partnerships with Landlords: Approaches for Discussing Lease Adjustments with Landlords for Direct Seeding and More Intensive Cropping - Mark Sheffels. Mark farms about 6500 acres in two location: 4 miles west of Wilbur in a 12-inch precipitation zone and 4 miles south of Highway 2 between Davenport and Reardan in a 15-inch precipitation zone. He has been direct seeding all of his farmland with a Flexi-Coil 5000 hoe air drill with Andersen openers for the past 7 years. His primary crops are wheat and barley. The farm leases fourteen percent of its acreage from three landlords outside of the family. Mark was co-chair of the National Legislation Committee for the Washington Association of Wheat Growers from 1999 through 2001. He is also on the Board of Directors of the Washington Association of Wheat Growers and Pacific Northwest Direct Seed Association.

Lower Rainfall Grower Experiences with Direct Seed Cropping Systems - Neal Brown. Neal farms 2,500 acres in a 12- to 14-inch precipitation zone east of Bickleton. A 2-pass minimum tillage farming system has been utilized on his farm for over 20 years and he has been transitioning into continuous direct seeding for the past 5 years. His major crops are spring wheat and barley. He direct seeds with a 33' Concord air seeder with Anderson Openers on 10" spacings. Neal has served as a supervisor for the Klickitat Conservation District for 15 years.

Intermediate Rainfall Grower Experiences with Direct Seed Cropping Systems - Daniel B. McKinley. Dan is the general manager of Broughton Land Company, in the Dayton, WA area. Dan received his B.S. in Agronomy and Soils from Washington State University in 1979. He started his career with the Puregro Company in Waitsburg as a crop consultant. In 1982, he began a 19-year career as plant manager with the McGregor Company in Dayton. He then took the current position with Broughton Land Company, one of his former clients. Dan is a Certified Professional Agronomist and a Certified Crop Advisor. The Western Crop Protection Association awarded Dan the Crop Advisor Stewardship award for the state of Washington in 1996. He is a graduate of Class 21 of the Washington Ag and Forestry Foundation.

Higher Rainfall Grower Experiences with Direct Seed Cropping Systems - Kent Rad. Kent farms 2,200 acres in a 20- to 25-inch precipitation zone near Cottonwood, ID and surrounding area. He has been developing his direct seeding system for the past 10 years and some of his farm has been under continuous direct seeding for 5 years. His major crops are wheat, Kentucky bluegrass, barley, canola and alfalfa. Minor crops include flax, lentils and peas. Kent direct seeds with a John Deere 750 single-disc drill on 7.5-inch spacing.

Irrigated Grower Experiences with Direct Seed Cropping Systems - Kurt Melville. Kurt is a 2nd generation direct seeder who farms in a 13- to 22-inch precipitation zone and his cropland is predominantly irrigated with wheel lines or hand lines. He farms 650 acres and also is involved in farming an additional 1,500 acres of irrigated cropland with his father Tim and brother Kevin. Kurt has been developing his direct seed system for the past 12 years, though some of his cropland has been direct seeded for over 20 years. Kurt’s major crops are winter and spring wheat and barley, and wrinkled seed peas. Minor crops include alfalfa, mustard, canola, timothy hay, white Dutch clover, and hard red and hard white spring wheat. He direct seeds with a 30’ Concord air drill with Anderson openers and a 13’ Yielder drill with NP openers. A heavy harrow is used 1-3 times in the fall after 100+bu/acre cereal crops. Kurt received a BS degree in Ag education from UI in 1997.