

Claudio O. Stockle
Resume

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Title: Professor/Biological Systems Engineer

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EDUCATIONAL RECORD:

Ph.D., Soils (Soil Physics. Minor: Agricultural Engineering), Washington State University, 1985.

M.S., Engineering (Agricultural), Washington State University, 1986

M.S., Soils (Soil Physics), Washington State University, 1983.

Five-year degree plus thesis (Agricultural Engineering), University of Chile, 1972.

LANGUAGE CAPABILITIES:

- English (Fluent)
- Spanish (Fluent)
- French (Functional)

MEMBERSHIP IN SCIENTIFIC AND HONORARY SOCIETIES:

- American Society of Agronomy
- American Society of Soil Science
- American Society of Agricultural Engineers
- European Society of Agronomy

PROFESSIONAL RECORD:

Nov 2001 – Present Chair, Biological Systems Engineering Department

July 2000 – Dec 2001	Director, State of Washington Water Research Center (0.75 FTE)
July 1999 – June 2000	Interim Director, State of Washington Water Research Center (0.5 FTE)
July 1998 - Present	Professor of Biological Systems Engineering, Washington State University, Pullman, WA. (60% research, 40% instruction).
Jul 1994 - 1998	Associate Professor of Biological Systems Engineering, Washington State University, Pullman, WA. (60% research, 40% instruction).
June - Dec. 1995	Visiting Professor. Istituto Sperimentale Agronomico, Modena, Italy; Institut National de la Recherche Agronomique, Toulouse, France; Universitat de Lleida, Catalonia, Spain. (Sabbatical leave).
Sep 1989 - June 1994	Assistant Professor of Biological Systems Engineering, Washington State University, Pullman, WA. (60% research, 40% instruction).
1988- 1989	Assistant Professor, Blackland Research Center, Texas Agricultural Experiment Station, Temple, TX.
1987	Research Scientist, Blackland Research Center, Texas Agricultural Experiment Station, Temple, TX.
1985- 1986	Research Associate, Agricultural Engineering Department, Washington State University, Pullman, WA.
1982 to 1985	Graduate Research and Teaching Assistant, Agronomy and Soils Department, Washington State University, Pullman, WA.
1978 to 1981	Associate Professor, Irrigation and Drainage, Department of Agricultural Engineering and Soils, University of Chile. (40% teaching, 50% research, and 10% extension).
1976 to 1981	Consulting Engineer (part-time). Participation in World Bank-funded regional irrigation and drainage projects in Chile and numerous projects at the farm level (e.g., water management, irrigation design, drainage systems, land survey and leveling).
1973 to 1977	Assistant Professor, Irrigation and Drainage, Department of Agricultural Engineering and Soils, University of Chile. (40% teaching, 50% research, and 10% extension).
1972	Catholic University of Chile. Member of an interdisciplinary team to evaluate solutions to drainage problems in the V Region of Chile.

SELECTED COMMITTEE AND SERVICE ACTIVITIES:

Professional Societies

- Local Host Committee, 1993 ASAE International Summer Meeting, Spokane, WA.
- Vice-chair of SW-213 Evapotranspiration Committee, June 1992 - June 1994. Chair of the committee, July 1994 - June 1995.
- Chair of Crop Water Requirements SW-213 Subcommittee, Dec 1989 - June 1995.
- Co-Chair of the International Conference on "Evapotranspiration / Irrigation Scheduling for Landscape, Turf, and Agriculture", sponsored by the American Society of Agricultural Engineers, the Irrigation Association, and the International Commission on Irrigation and Drainage. Nov 3-6 1996, San Antonio, TX. Active between 1993 - 1996.
- Organizer of the 2002 Research and Extension Regional Water Quality Conference. Vancouver, WA, Feb 20-21 2002.
- Session Chair, A-3 Division, 2002 Annual Meeting of the American Society of Agronomy.

Technical peer review:

- Evaluation of proposals for United States-Israel Binational Agricultural Research and Development Fund (BARD), USDA Small Business Innovation Research, USDA Competitive Grants, Spanish Commission For Science and Technology, USDA in-house research projects.
- Review for refereed journals. Numerous manuscripts reviewed for journals such as Agronomy Journal, Transactions of the ASAE, Agricultural Systems, Soil Sci. Soc. of Am. J., Acta Oecologica, Theoretical and Applied Climatology, J. Environmental Quality, Agricultural Water Management, Crop Science, American Journal of Alternative Agriculture, Agricultural and Forest Meteorology, Irrigation Science, and Journal of Irrigation and Drainage Engineering.
- Associate Editor, Transactions of the American Society of Agricultural Engineers, 1995 - 2001.

International:

- Editorial board of Agronomie (International journal in agricultural ecosystems and plant genetics, Elsevier). 1996 - 1997.
- Editorial board of the Italian Agronomy Journal. 1997 - Present.
- Editorial Board of Agricultura Técnica (Chile). 2003 – Present.
- Scientific Secretariat, International Symposium on Cropping Systems Modeling. European Society of Agronomy, Lleida, Spain, June 1999.
- Advisory Board, 2nd International Symposium on Modelling of Cropping Systems. European Society of Agronomy, Florence, Italy, July 2001.
- Board of Directors, International Consortium for Agricultural Systems Applications. Dec 2002-present.
- Member of the Food and Agriculture Organization (United Nations) expert panels on Crop Water Productivity. Nov 2002-present.

Committees and Service at Washington State University

- Member of the WSU Environmental Science and Regional Planning Program Advisory Board. (1999 – 2006).
- Member of the Faculty Senate (1996 - 1999).
- Review Committee of the Civil and Environmental Engineering graduate program, 1994-95.
- Graduate Studies Faculty.
- Executive committee, Latin America Interest Group, 1992-94. Member 1992-present.
- WSU/Chile Cooperative Agreement Planning Committee, member 1995 - present
- Undergraduate Studies Committee, Biological Systems Engineering, 1993 - 2000.
- Graduate Studies Committee, Biological Systems Engineering, 1993 - present.
- Leader of Soil and Water Engineering Faculty Group, 1996 - 2002.
- Director of the State of Washington Water Research Center, 1999-2001.
- Chair, Biological Systems Engineering Department, Nov 2001-present.

TEACHING ACTIVITIES:

Main interest is on teaching graduate and undergraduate courses in Agricultural Systems Modeling, Water-Soil-Environmental Engineering, and Engineering Analysis. International lecturer on Agricultural Systems Modeling.

Scheduled Teaching

University of Chile, Department of Agricultural Engineering and Soils

Year	Course No.	Subject	Credits
1973-80		Irrigation and Drainage	3
1976-80		Irrigation Methods Lab	1

Washington State University, Department of Biological Systems Engineering

Year	Course No.	Subject	Credits
Fall 89	AgE 590	Adv. Theory of Irrigation Water Requirement	3
Spring 90	AgE 596	Conservation Engineering (Partial participation)	3
Spring 90	AgE 600	Directed study (Pascal programming, 2 students)	1
Fall 90	AgE 562	System Analysis in Integrated Crop Management	3
Spring 91	AgE 592	Adv. Theory and Design of Irrigation Systems	3
Fall 91	AgE 590	Adv. Theory of Irrigation Water Requirement	3
Fall 91	AgE 110	Introduction to Ag. Eng. and Mechanization	1
Spring 92	AgE 552	Water Quality in Agricultural Systems	2
Fall 92	AgE 562	System Analysis in Integrated Crop Management	3
Spring 93	BSysE 352	Introduction to Soil and Water Engineering	3
Spring 93	BSysE 598	Graduate Seminar	1
Fall 93	BSysE 210	Biological Systems Analysis and Design	3

Fall 93	BSysE 590	Adv. Theory of Irrigation Water Requirement	3
Spring 94	BSysE 352	Introduction to Soil and Water Engineering	3
Spring 94	BSysE 598	Graduate Seminar	1
Spring 94	BSysE 310	Biol. Dyn. For Syst. Des. (Partial participation)	3
Fall 94	BSysE 562	System Analysis in Integrated Crop Management	3
Fall 94	BSysE 210	Biological Systems Analysis and Design	3
Fall 94	BSysE 110	Engineering for Living Systems	2
Spring 95	AgTM 315	Irrigation Systems and Water Management	3
Spring 95	BSysE 598	Graduate Seminar	1
Spring 96	AgTM 315	Irrigation Systems and Water Management	3
Spring 96	BSysE 598	Graduate Seminar	1
Fall 96	BSysE 210	Biological Systems Analysis and Design	3
Fall 96	BSysE 562	System Analysis in Integrated Crop Management	3
Spring 97	AgTM 315	Irrigation Systems and Water Management	3
Spring 97	BsysE 452	Eco-Environmental Engineering Design	3
Fall 97	BSysE 210	Biological Systems Analysis and Design	3
Spring 98	AgTM 315	Irrigation Systems and Water Management	3
Spring 98	BSysE 598	Graduate Seminar	1
Fall 98	BSysE 210	Biological Systems Analysis and Design	3
Fall 98	BSysE 562	System Analysis in Integrated Crop Management	3
Spring 99	AgTM 315	Irrigation Systems and Water Management	3
Fall 99	BSysE 210	Biological Systems Analysis and Design	3
Fall 00	BSysE 210	Biological Systems Analysis and Design	3
Fall 00	BSysE 552	Special Topics	2
Spring 01	BSysE 598	Graduate Seminar	1
Fall 01	BSysE 557	Hydrologic Modeling for Watershed Management	3
Fall 01	BSysE 552	Special Topics	2
Fall 02	BSysE 562	System Analysis in Integrated Crop Management	3
Fall 03	BSysE 598	Graduate Seminar	1
Fall 05	BSysE 598	Graduate Seminar	1
Fall 07	BSysE 551	Nutrient Cycling and Transport	3

Other Courses and Activities

- Visiting Professor, Universidad de Concepción, Chillán, Chile.
- Visiting Professor, Universitat de Lleida, Lleida, Spain.
- Cropping Systems Simulation Workshop. May 25-26, 1993. University of Concepción, Chillán, Chile.
- Principles and Applications of Cropping Systems Simulation Models. Two-week intensive graduate course, 1992, 1994, 1996, 1998, 2003, 2006. Universitat de Lleida, Lleida, Spain.
- Modeling Cropping Systems. Two-week, intensive graduate course. July 1995, Istituto Sperimentale Agronomico, Modena, Istituto Sperimentale per la Nutrizione Delle Piante, Rome, Univ. di Bologna, Bologna, Italy.

- Crop Growth Simulation. Two-week, intensive workshop. September 1997. Tech. Univ. of Lisbon, Portugal.
- Applications of Cropping Systems Simulation. One-week, intensive workshop. August 1997, Univ. of Chile, Santiago, Chile.
- Applications of Cropping Systems Simulation. One-week, intensive workshop. May 1998, Univ. of Concepcion, Chillan, Chile.
- Introduction to CropSyst. One-week intensive workshop. Dec. 1999, ICARDA, Syria.
- Computer Simulation Tools for the Analysis of Agricultural Systems. March 2000, Argentina.
- Decision Support Systems in Agriculture. January 2002, Zaragoza, Spain.
- Modeling Photosynthesis and Transpiration-Use Efficiency. Two-day Lecture Series. October 2005. University of Milan.
- Application of Models for Orchard Irrigation Management. One-week, intensive workshop. January 2006, Univ. of Concepcion, Chillan, Chile.
- Use and Application of CropSyst, a cropping systems simulation model. One-week intensive workshop, July 2007, University of Bonn, Germany.

RESEARCH ACTIVITIES:

- Development and application of computer-based analytical tools (crop simulation models, weather generators, watershed models, geographical information systems, and risk analysis software) to study the effect of soil, weather, land use, and management (e.g., water, nutrients, pesticides, salinity, residue, and tillage) on crop growth, crop productivity, and the environment (erosion and chemical pollution) at the field and watershed levels.
- Development and evaluation of operational methods to estimate crop water use (micrometeorological techniques, sap flow measurements, models).
- Evaluation of the performance of real-time, on-farm irrigation scheduling methods.
- Field and simulation studies of water and nitrogen management interactions.

Selected Funded Grants and Contracts

- Assessment of climate change impact on crop productivity (Jones/Stockle/Dyke). Resources for the Future. Funding: \$40,000 (1989).
- Evaluation of irrigation scheduling methods available to Washington Potato growers (Stockle). Washington State Potato Commission. Funding: \$16,243 (1990), \$19,000 (1991).
- Integration of GIS, computer simulation, and optimization for improved irrigation district management. Washington State Water Research Center (Stockle). Funding: \$11,750 (1990).
- Water Quality in the Pacific NW (Stockle). STEEP II. Funding: \$29,850 (1991), \$18,511 (1992), \$18,500 (1993), \$20,000 (1994), \$27,000 (1995).
- Water and nitrogen management of potatoes for maximum production and quality and minimum environmental damage (Stockle). Washington State Potato Commission. Funding \$30,000 (1992), \$20,000 (1993).

- Wind effects on canopy conductance and the mass and energy balance of plant communities (Stockle). USDA Competitive Grants. Funding: \$120,000 for three years (1993).
- Fate of N in wastewater disposal systems (Stockle/Pan/Hermanson). Washington Department of Ecology. Funding: \$20,000 (1997).
- A problem-solving tool for mitigating the impact on water quality of management practices in small rural watersheds (Stockle et al.). U.S. Geological Survey. Funding: \$170,000 for three years (1997).
- Rotation designs for direct seed cropping systems. STEEP III \$144,840 (1998).
- Evaluating water policy affecting fish habitat, hydrology, and irrigated agriculture in the Snake River Basin. U.S. Geological Survey. Funding: \$128,159 for two years (1998).
- An integrated systems approach to watershed restoration with community involvement applied to small rural watershed. EPA. Funding: \$106,310 for 3 years (1998).
- Integrated nutrient management modeling for dairy production systems featuring dynamics and optimization (Chen/Stockle/Harrison). USDA-NRI. Funding: \$340,000 for 3 years (1999).
- Impact of climate change in the Yakima Valley, WA. EPA (Subcontract with Pacific Northwest National Lab). Funding: \$90,000 for 3 years (2000).
- Skills enhancement and support to decision-makers in Jordan's water sector (Noel/Stockle). USAID. Funding: \$1,080,000 for 2 years (2000).
- Improving water quality for salmon restoration through integrated research, education, and extension (Chen/Leib/Stockle). USDA-CSREES. Funding: \$400,000 for 3 years (2000).
- Coordination of water quality extension and research programs in the Pacific Northwest (Stockle). USDA-CSREES (Subcontract with Univ. of Idaho). Funding: \$90,000 for 2 years (2000).
- Experiential learning in hydrological modeling for watershed management. (Wu/Stockle/Chen/Boll). USDA Higher Education Challenge Grant Program. Funding: \$99,534 for 2 years.
- Flex-cropping and chemical fallow potentials for dryland farming (Stockle/Wu/Flury). USDA CSREES PM-10. Funding: \$50,000 (2002), \$50,000 (2003), \$40,000 (2004).
- Water use of potato under sprinkler and subsurface drip irrigation (Fraisie/Stöckle/Pierce/Perry). USGS Washington Water Research Center. Funding: \$25,000 (2003)
- Phosphorus contamination of surface waters (Flury/Stöckle/Harsh/Harrison). USGS Washington Water Research Center. Funding: \$24,000 (2004).
- Climate friendly farming: Moving from source to sink (Feise and research team). Paul G. Allen Foundation. Total Funding: \$3,750,000. Total allocation for Stöckle: \$824,825 (2003).
- Site-specific N management for direct seed cropping systems (Huggins/Stöckle/Kok/Rossi). USDA STEEP Program. Funding: \$104,989 (2005).
- Simulating the Impact of Cropping Systems Management on PM10 Emissions. USDA CSREES-PM10. Funding: \$20,000 (2005).
- Measuring and modeling gaseous losses of nitrogen from irrigated crops in central Washington (Stöckle/Lamb/Mount/Kemarian). USDA-NRI. Funding: \$459,714 (2006).
- Generalized Assessment of the Impact of Climate Change on the Agricultural Sector of Washington State. Subcontract with the Univ. of Washington Climate Impact Group. Funding: \$178,250 (2007)

Visiting Scientists Joining Research Program

Dr. Josep Villar Mir, Polytechnic University of Catalunya, Spain. 1990.

Dr. Pedro Perez Garcia, Polytechnic University of Catalunya, Spain. August, 1990.
Dr. Maurice Cabelguenne, INRA/Toulouse, France. May 23/27, 1991; July 22/31, 1992; March 1994.
Dr. Philippe Debaeke, INRA/Toulouse, France. July 1992.
Dr. Marcello Donatelli, Bari Institute, Modena, Italy. August 15 - December 15, 1992.
Dr. Peter Gregory, CSIRO, Australia. April 15 - May 15, 1993.
Dr. Leopold Some, INERA, Burkina Faso. August 1993.
Mr. Ambrocio Castaneda, IRRI, The Philippines. September 1 - October 31, 1993.
Drs. Moughli and Mohammed Oussible, IAV Hassan II, Morocco. October, 1993.
Dr. Hassan Benaouda, INRA, Morocco. October, 1993.
Dr. Mustafa Pala, ICARDA, Syria. August 1993 - July, 1994.
Mr. Francesc Castellvi, Universitat de Lleida, Spain. September-December, 1994.
Mr. Mohamed Yacoubi, INRA/Settat, Morocco. November, 1994.
Dr. Mohamed Tayaa, IAV Hassan II, Morocco. December, 1994.
Dr. Joan Ignasi Rosell, Universitat de Lleida, Spain. July 15 - October 15, 1996.
Dr. Maria Angels Colomer, Universitat de Lleida, Spain. September, 1996.
Dr. Francesc Castellvi, Universitat de Lleida, Spain. February-March, 1997.
Ing. Stefan Kosovan, Agricultural University of Slovakia, April, 1997.
Dr. Javier Alvarez Benedi, Servicio de Investigacion Agraria, Spain. Dec 1997-Jan 1998.
Dr. Gianni Belocchi, University of Pisa, Italy. Jan 15 - Jul 15, 1998.
Mr. Francesc Ferrer, Universitat de Lleida, Spain. Jan 15 - March 15, 1998.
Dr. Josep Maria Villar, Universitat de Lleida, Spain. Jan 15 - Feb 15, 1998.
Dr. Marcello Donatelli, Institute for Research on Industrial Crops, Italy. July, 1998.
Dr. Rosa Francaviglia, Institute for Plant Nutrition, Italy. July, 1998.
Dr. John Annadale, University of Pretoria, South Africa. Oct 21 – Nov 21, 1998
Dr. Francesc Ferrer, Universitat de Lleida, Oct 2000
Dr. Marcello Donatelli, Institute for Research on Industrial Crops, Italy. December 2000
Mr. Danielle Torriani, Swiss Government, March-May 2004.
Mrs. Elisenda Gillaumes, Universitat de Lleida, Spain June-Sept 2004.
Dr. Josep María Villar, Universitat de Lleida, Spain, June-August 2004.
Dr. Luca Bechini, University of Milan, April 2005.
Mr. Manuel Lopez Vicente, Zaragoza, Spain, April-June 2005.
Mr. Michael Rivington, Macauley Institute, Aberdeen, Scotland, March 2006.
Mrs. Carolina Martínez, University of Almería, Spain, May 2007.
Dr. Jordi Marsal, University of Lleida, Spain, November 2007.

International Partners

Dr. Marcello Donatelli, Experimental Institute of Industrial Crops, Bologna, Italy
Dr. Josep María Villar, Department of Soil and Environment, University of Lleida, Spain
Dr. Eduardo Holzzapfel, College of Agricultural Engineering, University of Concepción, Chile
Dr. Keith Mattews and Michael Rivington, The Macauley Institute, Aberdeen, Scotland
Dr. Luca Bechini, Department of Agronomy, University of Milan
Dr. Rolf Sommer, ICARDA, Syria, and University of Bonn, Germany

Software Development

Stockle, C.O. and G.S. Campbell. 1983. A model to predict growth and yield of corn in response to water. Crop and Soil Sciences Dept., Washington State University, Pullman, WA.

Stockle, C.O. and G.S. Campbell. 1985. A model to predict growth and yield of wheat in response to water and nitrogen. Crop and Soil Sciences Dept., Washington State University, Pullman, WA.

Stockle, C.O. 1990. AQUA, a model of water vapor and heat exchange of crop canopies. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O. 1990. GRANA, a generic grain crop simulator responsive to water and nitrogen applications. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Nelson, R. and C. O. Stockle. 1991. GISSIM, Geographic Information System and Simulation Model Interface. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O. and R. Nelson. 1993. CropSyst, cropping systems simulation model. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O., G.S. Campbell, and R. Nelson. 1997. ClimGen for Windows, a weather generator program. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O. and R. Nelson. 1997. CropSyst for Windows, a simulation model to evaluate productivity and environmental impact of cropping systems. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O. and R. Nelson. 1997. ARCCS for Windows, GIS-CropSyst cooperater. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O. and R. Nelson. 2000. CropSyst Watershed. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O. and R. Nelson. 2004. CropSyst Version 4.0. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O. 2004. CropSystVB Excel. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O., J. Marcos, and A. Alva. 2006. CropSystVB-Potato, a potato systems management model. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Bechini, L. and C.O. Stöckle. 2007. CropSystVB-Access, a simulation and data base modeling software for farming systems. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle C.O., A. Kemanian, and J. Marcos. 2007. C-FARM, an agriculture carbon sequestration calculator. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

Stockle, C.O. and C. Kremer. 2007. CTP, a canopy transpiration and photosynthesis model. Biological Systems Engineering Dept., Washington State University, Pullman, WA.

PUBLICATIONS:

Professional Articles, Refereed

- Fritsch, N., C. O. Stockle and F. Pena. 1978. Irrigation frequency and fertilization rate interaction effects on yield of tomatoes. *Investigacion Agricola (Chile)* 4(1).
- Fritsch, N., C. O. Stockle, V. Velasquez and A. Vega. 1978. Methodology for measurement of farm irrigation efficiency. *Investigacion Agricola (Chile)* 4(2).
- Stockle, C. O. 1979. Advances in trickle irrigation research in Chile. *Simiente (Chile)* 49(2).
- Barrientos, C., N. Fritsch and C. O. Stockle. 1979. Physical and chemical characterization of a drip irrigated soil and its effect on germination and initial growth of three vegetable crops. *Investigacion Agricola (Chile)* 5(2).
- Stockle, C. O., N. Fritsch and J. Salgado. 1979. Comparison of the effect of furrow and trickle irrigation on yield of tomatoes. *Investigacion Agricola (Chile)* 5(3).
- Stockle, C. O., G. Selles and N. Fritsch. 1980. Determination of irrigation rate of drip irrigated tomatoes. *Investigacion Agricola (Chile)* 6(3).
- Pena, M., G. Selles, C. O. Stockle and N. Fritsch. 1983. Fertilization of maize (*Zea mays* L.) using nitrogen fertilizer applied with the irrigation water. *Investigacion Agricola (Chile)* 8(1).
- Razeto, B., G. Selles, C. Stockle and J. Cobo. 1984. Correction of iron deficiency of trickle irrigated peach trees. *Agricultura Tecnica (Chile)* 44(1).
- Stockle, C. O. and G. S. Campbell. 1985. A simulation model for predicting effect of water stress on yield: An example using corn. *Advances in Irrigation*, Vol. 3:283-311.
- Stockle, C. O. and L. G. James. 1989. Simulated center pivot energy use and yield for full and deficit irrigated corn. *Irrigation Science* 10:85-98.
- Stockle, C. O. and G. S. Campbell. 1989. Simulation of crop response to water and nitrogen: an application example using spring wheat. *Transactions of ASAE* 32, (1):66-74.
- Stockle, C. O. and W. A. Dugas. 1989. Effect of weather variability and precipitation uncertainty on grain sorghum irrigation scheduling. *Transactions of ASAE* 32, (6):1939-1943.

- Stockle, C. O. and J. R. Kiniry. 1990. Variability in crop radiation use efficiency associated with vapor pressure deficit. *Field Crops Research* 25:171-181.
- Stockle, C. O., L. G. James, D. L. Bassett and K. E. Saxton. 1991. Assessing the effect of evapotranspiration underprediction on irrigation scheduling and yield of corn: A simulation study. *Agric. Water Man.* 19:167-179.
- Arnold, J. G. and C. O. Stockle. 1991. Simulation of supplemental irrigation from on-farm ponds. *Journal of Irrigation and Drainage Engineering* 117:408-424.
- Stockle, C. O. and W.A. Dugas. 1992. Evaluating canopy-temperature based indices for irrigation scheduling. *Irrigation Science* 13:31-37.
- Stockle, C. O. 1992. Canopy photosynthesis and transpiration estimates using radiation interception models with different levels of detail. *Ecological Modeling* 60:31-44.
- Stockle, C. O., J. R. Williams, N. J. Rosenberg and C. A. Jones. 1992. A method for estimating the direct and climatic effects of rising atmospheric carbon dioxide on growth and yield of crops:Part I. Modification of the EPIC model for climate change analysis. *Agricultural Systems* 38:225-238.
- Stockle, C. O., P. T. Dyke, J. R. Williams, C.A. Jones and N.J. Rosenberg. 1992. A method for estimating the direct and climatic effects of rising atmospheric carbon dioxide on growth and yield of crops: Part II. Sensitivity analysis at three sites in the midwestern USA. *Agricultural Systems*:239-256.
- Stockle, C. O., S. Martin and G. S. Campbell. 1994. CropSyst, a cropping systems model: water/nitrogen budgets and crop yield. *Agricultural Systems* 46:335-359.
- Stockle, C. O. and L .K. Hiller. 1994. Evaluation of on-farm irrigation scheduling methods for potatoes. *American Potato Journal*:155-164.
- Gerik, T.J., B.S. Jackson, C.O. Stockle and W.D. Rosenthal. 1994. Plant nitrogen status and boll load of cotton. *Agronomy Journal* 86:514-518.
- Annandale, J. G. and C. O. Stockle. 1994. Fluctuation of evapotranspiration crop coefficients with climate: A sensitivity analysis. *Irrigation Science* 15:1-7.
- Stockle, C.O., R.I. Papendick, K.E. Saxton, G.S. Campbell, and F.K. van Evert. 1994. A framework for evaluating the sustainability of agricultural production systems. *American Journal of Alternative Agriculture* 9:46-51.
- Majeed, A., C. O. Stockle and L. G. King. 1994. Computer model for managing saline waters for irrigation and crop growth: results of calibration and testing with lysimeter data. *Agricultural Water Management* 26:239-251.

- Kjelgaard, J. F., C. O. Stockle, J. M. Villar, R. G. Evans and G. S. Campbell. 1994. Evaluating methods to estimate corn evapotranspiration from short-time interval weather data. *Trans. of ASAE* 37:1825-1833.
- Ziari, H. A., B. A. McCarl and C. O. Stockle. 1995. A nonlinear mixed-integer program model for evaluating runoff impoundments for supplemental irrigation. *Water Resource Research* 31: 1585-1594.
- Pala, M., C.O. Stockle, and H.C. Harris. 1996. Simulation of durum wheat (*triticum durum*) growth under differential water and nitrogen regimes in a mediterranean type of environment using CropSyst. *Agricultural Systems* 51:147-163.
- Donatelli, M., C.O. Stockle, E. Ceotto, and M. Rinaldi. 1997. CropSyst validation for cropping systems at two locations of Northern and Southern Italy. *European Journal of Agronomy* 6:35-45.
- Stockle, C.O. 1996. GIS and simulation technologies for assessing cropping systems management in dry environments. *American Journal of Alternative Agriculture* 11:115-120.
- Kjelgaard, J., C.O. Stockle, and R.G. Evans. 1996. Accuracy of canopy temperature energy balance for determining daily ET. *Irrigation Science* 16:149-157.
- Kjelgaard, K.F. C.O. Stockle, R.A. Black and G.S. Campbell. 1997. Measuring sap flow with the heat balance approach using constant and variable heat input. *Agriculture and Forest Meteorology* 85:239-250.
- Badini, O., Stockle, C.O., and E.H. Franz. 1997. Application of crop simulation modeling and GIS to agroclimatic assessment in Burkina Faso. *Agriculture, Ecosystems and Environment* 64:233-244.
- Castellvi, F., Perez, P.J., Stockle, C.O., and M. Ibanez. 1997. Methods for estimating vapor pressure deficit at a regional scale depending on data availability. *Agriculture and Forest Meteorology* 87:243-252.
- Stockle, C.O., M. Cabelguenne, and P. Debaeke. 1997. Validation of CropSyst for water management at a site in southern France using submodels of different complexity. *European Journal of Agronomy* 7:89-98.
- Stockle, C.O. and P. Debaeke. 1997. Modelling crop nitrogen requirements: a critical analysis. *European Journal of Agronomy* 7:161-169.
- Pannkuk, C.D., C.O. Stockle, and R.I. Papendick. 1998. Validation of CropSyst for Winter and Spring Wheat under Different Tillage and Residue Management Practices in a Wheat-Fallow Region. *Agricultural Systems* 57:121-134.
- Jara, J., C.O. Stockle, and J.F. Kelgaard. 1998. Measurement of evapotranspiration and its components in a corn field. *Agriculture and Forest Meteorology* 92:131-145.

- Stockle, C.O. and J. Jara. 1998. Modeling transpiration and soil water content from from a corn field: 20 min vs. daytime integration step. *Agriculture and Forest Meteorology* 92:119-130.
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