

<b>Foreword</b>	vii
<b>Preface</b>	ix
<b>1</b>	<b>1</b>
<b>Current Water Deficit Stress Simulations in Selected Agricultural System Models</b> S.A. Saseendran, L.R. Ahuja, L. Ma, D. Timlin, C.O. Stöckle, K.J. Boote, and G. Hoogenboom	
<b>2</b>	<b>39</b>
<b>On the Use of Radiation- and Water-Use Efficiency for Biomass Production Models</b> C.O. Stöckle, A.R. Kemanian, and C. Kremer	
<b>3</b>	<b>59</b>
<b>Experience with Water Balance, Evapotranspiration, and Predictions of Water Stress Effects in the CROPGRO Model</b> K.J. Boote, F. Sau, G. Hoogenboom, and J.W. Jones	
<b>4</b>	<b>105</b>
<b>Simulation of the Effects of Limited Water on Photosynthesis and Transpiration in Field Crops: Can We Advance Our Modeling Approaches?</b> D. Timlin, J. Bunce, D. Fleisher, V.R. Reddy, Y. Yang, S.-H. Kim, S.A. Saseendran, and B. Quebedeaux	
<b>5</b>	<b>145</b>
<b>Modeling the Dynamics of Water Flow through Plants, Role of Capacitance in Stomatal Conductance, and Plant Water Relations</b> A. Tuzet and A. Perrier	
<b>6</b>	<b>165</b>
<b>A Canopy Transpiration and Photosynthesis Model for Evaluating Simple Crop Productivity Models</b> C. Kremer, C.O. Stöckle, A.R. Kemanian, and T. Howell	
<b>7</b>	<b>191</b>
<b>Extending the Simultaneous Heat and Water (SHAW) Model to Simulate Carbon Dioxide and Water Fluxes over Wheat Canopy</b> Q. Yu and G.N. Flerchinger	

<b>8</b>	<b>215</b>
<b>Modeling Water and Nitrogen Interaction Responses and Their Consequences in Crop Models</b>	
L. Wu and K.C. Kersebaum	
<b>9</b>	<b>251</b>
<b>Towards Modeling the Function of Root Traits for Enhancing Water Acquisition by Crops</b>	
J.A. Postma, R.E. Jaramillo, and J.P. Lynch	
<b>10</b>	<b>277</b>
<b>Simulating Crop Phenological Responses to Water Deficits</b>	
G.S. McMaster, J.W. White, A. Weiss, P.S. Baenziger, W.W. Wilhelm, J.R. Porter, and P.D. Jamieson	
<b>11</b>	<b>301</b>
<b>Impacts of Drought and/or Heat Stress on Physiological, Developmental, Growth, and Yield Processes of Crop Plants</b>	
P.V.V. Prasad, S.A. Staggenborg, and Z. Ristic	
<b>12</b>	<b>357</b>
<b>Measuring and Modeling the Stress Response of Grapevines to Soil-Water Deficits</b>	
S. Green, B. Clothier, C. van den Dijssel, M. Deurer, and P. Davidson	
<b>13</b>	<b>387</b>
<b>Exploring the Use of the Environmental Productivity Index Concept for Crop Production and Modeling</b>	
K.R. Reddy, V.G. Kakani, and H.F. Hodges	
<b>14</b>	<b>411</b>
<b>Synthesis, Actions, and Further Research to Improve Response of Crop System Models to Water Stress</b>	
L.R. Ahuja, S.A. Saseendran, V.R. Reddy, and Q. Yu	
<b>Index</b>	<b>423</b>
<b>About the Series</b>	<b>435</b>