# **FABIÁN DANIEL MENALLED**

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Professor of Weed Ecology and Management

<u>Professional expertise</u>: Weed ecology and management, agroecology and sustainable farming, cropping systems, basic and applied plant ecology, population and community ecology.

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#### **Education**

Ph.D. 1996. University of Massachusetts, Amherst.

B.S. 1984. University of Buenos Aires, Argentina. Biological Sciences.

## **Awards, Grants, and Contracts**

Total Awarded = \$13,502,980 Total Awarded as PI = \$3,447,203

# Ongoing relevant awards

2014-2017	\$420,000	USDA-NIFA-CPPM. Montana State University's Extension Implementation Plan for Integrated Pest Management. Burrows, M., T. Day, L. Kerzicnik, J. Mangold, <b>F. Menalled</b> , C. Tharp, and K. Wanner
2012-2016	\$1,499,815	USDA - OREI. Targeted grazing to reduce tillage in organic dryland: Environmental, ecological, and economic assessment of reintegrating animal and crop production. <b>Menalled, F.</b> , P. Carr, P. Hatfield, P. Miller, D. Weaver, M. Burrows, R. Engle, A. Bekkerman, J. Boles, Z. Miller, R. Quinn, L. Burkle, K. O'Neill, G. Gramig, and K. Ringwall.
2012-2017	\$3,375,000	USDA – AFRI Food Security. A predictive model to increase adoption of IPM of a mite-virus disease complex in wheat. Hein, G., S. Wegulo, J. Bradshaw, A. Zygielbaum, D. Namuth-Covert, D. Lyon, D., Golick, C. Rush, F., Workneh, M. Burrows, I. Grimberg, <b>F. Menalled</b> , Z. Miller, E. DeWolf, F. Epplin, R. Hunger, K. Kelsey, S. Tatineni, R. French, R. Graybosch, N. Tisserat. Total allocated to MSU: \$815,000.
2012-2015	\$499,801	USDA – AFRI Foundational Program. Molecular, physiological, and ecological characterization of multiple herbicide resistance in <i>Avena fatua</i> . Dyer, W., F. Menalled, B. Maxwell, B. Keith, E. Lehnhoff, and R. Peterson.
2012-2015	\$742,907	USDA – Organic Transition Programs. Reducing tillage intensity in organic crop systems: ecological and economic impacts of targeted sheep grazing on cover crops and weed management, soil health, carbon sequestration and greenhouse gas emissions organic transition. Hatfield, P., <b>F. Menalled</b> , U. Sainju, P. Miller, A. Bekkerman, P. Lachapelle, Z. Miller, and A. Lenssen.

## Undergraduate Students, Graduate Students, and Post-Docs

	Total	Graduated. Advisor or co-advisor	Current. Advisor or co-advisor	Member of the committee
Post-Docs	5	4	1	
PhD students	7	2	4	1
MS students	15	8	2	5
Undergraduate students	8	5	1	

## **Publications**

	Total	Main author	Co-author
Peer-reviewed publications	79	21	58
Books / Booklets	2		2
Book chapters	11	7	4
Extension – technical bulletins	27	15	12
News releases – popular press	118	117	

(\* = undergraduate student, \* = graduate student, major advisee; \*\* = graduate student outside of my lab; \*\*\* = postdoctoral research associate or other employee)

#### **Articles in Peer-Reviewed Journals**

- 1. McKenzie, S.\*, H. Goosey, K. M. O'Neill, and F. Menalled. *Accepted with revisions*. Integrating livestock for cover crop termination in horticultural vegetable production: Impacts on weed and ground beetle (Coleoptera: carabidae) communities. Agriculture, Ecosystems and Environment.
- 2. Goosey, H.B, S. C. McKenzie, M. G. Rolson, K. M. O'Neill, and **F. Menalled**. *Accepted with revisions*. Impacts of contrasting alfalfa (Medicago sativa) production systems on the drivers of carabid beetle (Coleoptera: Carabidae) community dynamics. Environmental Entomology.
- 3. Miller, Z. \*\*\*, E. Lehnhoff\*\*\*, **F. Menalled** and M Burrows. *Accepted with revisions*. Effects of soil nitrogen and atmospheric carbon dioxide on Wheat streak mosaic virus and its vector (Aceria tosichella Kiefer). Plant Disease.
- 4. Keith, B, E. Lehnhoff\*\*\*, E. Burn\*, **F. Menalled**, and W. Dyer. *In Press.* Characterization of *Avena fatua* L. populations with resistance to multiple herbicide mechanisms of action. Weed Research
- 5. Lehnhoff, E\*\*\*., Z. Miller\*\*\*, **F. Menalled**, D. Ito\*\*, and M. Burrows. *In Press*. Wheat and barley susceptibility and tolerance to multiple isolates of Wheat streak mosaic virus. Plant Disease.
- 6. Barroso, J.\*\*\*, Z. Miller\*\*\*, E. Lehnhoff\*\*\*, P. Hatfield, and **F. Menalled**. *In Press*. Impacts of cropping system and management practices on the assembly of weed communities. Weed Research.
- 7. Orloff, L.\*, J. Mangold, and **F. Menalled**. *In Press*. Effects of exotic annual grass control on sown seedling. Establishment and remnant vegetation in rangeland and old-field systems. Ecological Restoration.
- 8. Miller, Z.\*\*\* and **F. Menalled**. 2015. Impact of species identity and phylogenetic relatedness on biologically-mediated plant-soil feedbacks in a low and a high intensity agroecosystem. Plant and Soil 389: 171-183.
- 9. Keren, I.\*, **F. Menalled**, D. Weaver, and J. Robison-Cox. 2015. Interacting agricultural pest management practices and their effect on crop yield: Application of a Bayesian decision theory

- approach to the joint management of Bromus tectorum and Cephus cinctus. PLOS ONE DOI: 10.1371/journal.pone.0118111
- 10. Miller, Z.\*\*\*; **F. Menalled**, U.M. Sainju, A.W. Lenssen, and P.G. Hatfield. 2015. Integrating sheep grazing into cereal-based crop rotations: Spring wheat yields and weed communities. Agronomy Journal 107: 104-112.
- 11. Miller, Z.\*\*\*, **F. Menalled**, D. Ito\*\*, M. Moffet\*\*\*, and M. Burrows. 2014. Impacts of crop variety and time of inoculation on the susceptibility and tolerance of winter wheat to Wheat streak mosaic virus. Plant Disease 98: 1060-1065.
- Liebman, M., Z. Miller, C. Williams, P.R. Westerman, P.M. Dixon, A. Heggenstaller, A.S. Davis, F.D. Menalled, and D.N. Sundberg. 2014. Fates of Setaria faberi and Abutilon theophrasti seeds in three crop rotation systems. Weed Research 54:293-306.
- 13. Mangold, J., H. Parkinson, C. Duncan, P. Rice, E. Davis, and **F. Menalled**. 2013. Controlling downy brome (*Bromus tectorum*) with imazapic on Montana rangeland. Invasive Plant Science and Management 6:554-558.
- 14. Lehnhoff, E.\*\*\* and **F. Menalled.** 2013. Impacts of Tamarix-mediated soil changes on restoration plant growth. Applied Vegetation Science 16:438-447.
- 15. Lehnhoff, E. \*\*\*, B. K. Keith, W. E. Dyer, R. K. Peterson, and **F. Menalled**. 2013. Characterization of multiple herbicide resistance in wild oat (*Avena fatua*) and its impacts on physiology, germinability, and seed production. Agronomy Journal 105:854-862.
- 16. Orloff, N.\*, Z.J. Miller, **F.D. Menalled**, M.E. Burrows, and J.M. Mangold. 2013. Joint impacts of biological and environmental stressors on *Bromus tectorum* growth. Weed Research 53:192-200.
- 17. Lehnhoff, E. \*\*\*, B. Keith, W. Dyer, and **F. Menalled**. 2013. Does multiple herbicide resistance modify crop-weed competitive interactions? Impact of biotic and abiotic stresses on multiple herbicide resistant wild oat (*Avena fatua*) in competition with wheat (*Triticum aestivum*). PLoS ONE 8(5): e64478. doi:10.1371/journal.pone.0064478.
- 18. Davis P.\*, B. Maxwell, and **F. Menalled**. 2013. Impact of growing conditions on the competitive ability of *Camelina sativa* (L.) Crants (Camelina). Canadian Journal of Plant Sciences 93: 243-247.
- 19. Miller, Z. \*\*\*, M. Burrows, and **F. Menalled**. 2013. Winter annual grassy weeds increase disease induced overwinter mortality in fall-sown cereals. Weed Research 53:102-109.
- Blake, N.K., D. Clark, S. P. Lanning, G. R. Carlson, P. F. Lamb, D. Nash, D. M. Wichman, K. D. Kephart, R. N. Stougaard, J. Miller, J. L. Eckhoff, F. Menalled, E. Davis, and L. E. Talbert. . 2013. Registration of WB 9879CLP Hard Red Spring Wheat. Journal of Plant Registrations 7: 205-208.
- 21. Miller Z.\*\*\*, M. Burrows, and **F. Menalled**. 2013. Effects of nitrogen fertilization on risks and impacts of wheat streak mosaic disease. Phytopathology 103:97-97.
- 22. Burrows, M., Z. Miller\*\*\*, **F. Menalled**. 2013. Estimating susceptibility to Wheat streak mosaic virus infection in non-crop grasses. Phytopatology 103:22-22
- 23. Orloff, N.\*, J. Mangold, and **F. Menalled**. 2013. Role of size and nitrogen in competition between annual and perennial grasses. Invasive Plant Science and Management 6:87:-98.
- 24. Ito, D.\*\*, Z. Miller\*\*\*, **F. Menalled**, M. Moffet, M. Burrows. 2012. Relative susceptibility among alternative host species prevalent in the Great Plains to Wheat streak mosaic virus. Plant Disease 96:1185-1192.
- 25. Lehnhoff, E.\*\*\*, L.J. Rew, C. Zabinski, and **F. Menalled**. 2012. Reduced impacts or a longer lag phase? Tamarix in the northwestern U.S.A. Wetlands 32: 497-508.
- 26. Miller Z.\*\*\*, F. **Menalled**, and M. Burrows. 2012. Downy brome (*Bromus tectorum*) increases disease induced over-winter mortality in wheat (*Triticum aestivum*). Canadian Journal of Plant Science 92: 603-603.
- 27. **Menalled, F.**, E. Keren\*, D. Weaver, A. Dyer, and J. Robison-Cox. 2012. Assessing the ecological basis of a multi-pest approach to management of wheat-fallow systems. Canadian Journal of Plant Science 92: 595-596.

- 28. Sciegienka, J.\*, E. Keren\*, and **F. Menalled**. 2011. Impact of root fragment dimension, weight, burial depth, and water regime on *Cirsium arvense* emergence and growth. Canadian Journal of Plant Science 91:1027-1036.
- 29. Schat, M.\*\*, S. Sing, R. Peterson, **F. Menalled**, and D. Weaver. 2011. Growth inhibition of Dalmatian toadflax, *Linaria dalmatica* (L.) Miller, in response to herbivory by the biological control agent *Mecinus janthinus* Germar. Journal of Entomological Science 46:1-15.
- 30. Davis, P.B.\*, **F. Menalled**, R.K.D. Peterson, and B. Maxwell. 2011. Refinement of weed risk assessments for biofuels using *Camelina sativa* as a model species. Journal of Applied Ecology 48: 989-997.
- 31. Weise, J.L.\*, E. Keren\*, and **F. Menalled**. 2011. Native wildflower species seedling tolerances to post-emergence herbicides. Native Plants Journal 12: 31-36.
- 32. Sciegienka, J.\*, E. Keren\*, and **F. Menalled**. 2011. Interactions of two biological control agents and a herbicide for Canada thistle (*Cirsium arvense*) suppression. Invasive Plant Science and Management 4: 151-158.
- 33. Lehnhoff; E.A.\*\*\*, **F. Menalled**, and L. Rew. 2011. Tamarisk (*Tamarix spp.*) establishment in its most Northern range. Invasive Plant Science and Management 4: 58-65.
- **34. Menalled, F.** 2010. Ecological considerations in the design of integrated weed management programs (In Spanish). Agroecologia 5: 73-78.
- 35. **Menalled, F.**, B. Grimberg, and C. Jones. 2009. Evaluation of agricultural professionals' perceptions and knowledge on sustainable agriculture: A useful step in the development of an on-line extension program. Journal of Agricultural Education 50: 86-97.
- 36. Pollnac, F.\*, B. Maxwell, and **F. Menalled**. 2009. Weed community characteristics and crop performance: a neighborhood approach. Weed Research 49:242-250.
- 37. Pollnac, F.\*, B. Maxwell, and **F. Menalled.** 2009. Using species-area curves to examine weed communities in organic and conventional spring wheat systems. Weed Science 3:241-247.
- 38. Baer, S., D. Engle, J. Knops, K. Langeland, B. Maxwell, **F. Menalled**, A. Symstad. 2009. Vulnerability of rehabilitated agricultural production systems to invasion by nontarget plant species. Environmental Management 43: 189-196
- 39. Harbuck, K.\*, F. Pollnac\*, and **F. Menalled.** 2009. Impact of cropping systems on weed seedbanks in the Northern Great Plains. Weed Biology and Management 9:160-168.
- 40. Pollnac, F\*., L. Rew, B. Maxwell, and **F. Menalled**. 2008. Spatial patterns, species richness and cover in weed communities of organic and conventional no-tillage spring wheat systems. Weed Research 48: 398-407.
- 41. Liebman, M., L.R. Gibson, D.N. Sundberg, A.H. Heggenstaller, P.R. Westerman, C.A. Chase, R.G. Hartzler, **F. Menalled**, A.S. Davis, and P.M. Dixon. 2008. Agronomic and economic performance characteristics of conventional and low-external-input cropping systems in the Central Corn Belt. Agronomy Journal 100:600-610.
- 42. Collier, T., S. Enloe, J. Sciegienka\*, and **F. Menalled**. 2007. Combined impacts of *Ceutorhynchus litura* and herbicide treatments for Canada thistle suppression. Biological Control 43:231-236
- 43. White, S., K. Renner, **F. Menalled** and D. Landis. 2007. Feeding preferences of weed seed predators and effect on weed emergence. Weed Science 55:606-612.
- 44. Smith, R.\*\*\*, **F. Menalled**, and G. Robertson. 2007. Temporal yield variability under conventional and alternative management systems. Agronomy Journal 99:1629-1634.
- 45. **Menalled, F.** and R. Smith\*\*\*. 2007. Competitiveness of herbicide resistant and susceptible kochia (*Kochia scoparia* (L.) Schrad.) under contrasting management practices. Weed Biology and Management 7:115-119.
- 46. **Menalled, F.**, R. Smith\*\*\*, J. Dauer\*, and T. Fox. 2007. Impact of agricultural management systems on carabid beetle communities and invertebrate weed seed predation. Agriculture Ecosystems and Environment 118: 49-54.

- 47. **Menalled, F.** 2007. Book review: Developing and extending sustainable agriculture. Great Plains Research 17: 237-238.
- 48. Smith R.\*\*\*, B. Maxwell, **F. Menalled**, and L. Rew. 2006. Lessons from agriculture may improve the management of invasive plants in wildland systems. Frontiers Ecology and the Environment 4:428-434.
- 49. Alvarez, J.M., **F. Menalled**, and M.A. Hoy. 2006. Molecular tools in biological control. (In Spanish). Revista Manejo Integrado de Plagas y Agroecología 74: 4-11.
- 50. Heggenstaller A.H., **F.Menalled**, M. Liebman, P.R. Westerman. 2006. Seasonal patterns in post-dispersal seed predation of *Abutilon theophrasti* and *Setaria faberi* in three cropping systems. Journal of Applied Ecology 43: 999-1010.
- 51. **Menalled, F.** and R.G. Smith\*\*\*. 2006. Book review: Plant-provided food for carnivorous insects: a protective mutualism and its applications. Environmental Entomology 35: 1137.
- 52. **Menalled, F.,** D. Buhler, and M. Liebman. 2005. Composted swine manure effects on germination and early growth of crop and weed species under greenhouse conditions. Weed Technology 19: 784-789.
- 53. **Menalled, F.**, K. Kohler, D. Buhler, and M. Liebman. 2005. Effects of composted swine manure on weed seedbank. Agriculture Ecosystems and Environment. 111: 63-69.
- 54. Westerman, P., M. Liebman, **F. Menalled**, A. Heggenstaller, R. Hartzler, and P. Dixon. 2005. Are many little hammers effective? Velvetleaf population dynamics in two- and four-year crop rotation systems. Weed Science 53: 382-392.
- 55. Landis, D., **F. Menalled**, A. Costamagna, and T. Wilkinson. 2005. Manipulating plant diversity to enhance beneficial arthropods in agricultural landscapes. Weed Science 53: 902-908.
- 56. **Menalled, F**, D. Landis, and L. Dyer. 2004. Research and extension supporting ecologically based IPM systems. Journal of Crop Improvement 11 (1/2): 153-174.
- 57. **Menalled, F.**, M. Liebman, and D. Buhler. 2004. Impact of composted swine manure and tillage on soybean common waterhemp competition. Weed Science 52:605-613.
- 58. Liebman, M., **F. Menalled**, D. Buhler, T. Richard, D. Sundberg, C. Cambardella, and K. Kohler. 2004. Impacts of composted swine manure on weed and corn nutrient uptake, growth, and competitive interactions. Weed. Science 52:365–375.
- 59. Costamagna, A., **F. Menalled**, and D. Landis. 2004. Effect of host density on the parasitism of the armyworm *Pseudaletia unipuncta* (Haworth) (Lepidoptera: Noctuidae), at two structurally different agricultural landscapes in Michigan. Basic and Applied Ecology 5: 347-355.
- 60. Kelty, M., **F. Menalled**, and M. Carlton. 2004. Nitrogen dynamics and red pine growth following application of pelletized biosolids in Massachusetts, USA. Canadian Journal Forestry Research 34: 1477-1487.
- 61. **Menalled, F.**, A. C. Costamagna, P. C. Marino, and D. A. Landis. 2003. Temporal variation in the response of parasitoids to agricultural landscape structure. Agriculture, Ecosystems and the Environment 96: 29-35.
- 62. **Menalled, F.**, J. Lee, and D. Landis. 2001. Herbaceous filter strips in agroecosystems: implications for ground beetle (Coleoptera: Carabidae) conservation and invertebrate weed seed predation. Great Lakes Entomologist 34: 77-91.
- 63. **Menalled, F.**, K. Gross, and M. Hammond. 2001. Weed aboveground and seedbank community responses to agricultural management systems. Ecological Applications 11: 1586-1601.
- 64. Lee, J., **F. Menalled**, and, D. Landis. 2001. Refuge habitats modify impact of insecticide disturbance on carabid beetle communities. Journal of Applied Ecology 28: 472-483.
- 65. **Menalled,** F., and M. Kelty M. 2001. Crown structure and biomass allocation strategies of three juvenile tropical tree species. Plant Ecology 152: 1-11.
- 66. McLachlan, J, D. Foster, and **F. Menalled**. 2000. Anthropogenic ties to late-successional structure and composition in four New England hemlock stands. Ecology 81: 717-733.

- 67. **Menalled, F.**, P. Marino, K. Renner, and D. Landis. 2000. Post-dispersal weed seed predation in Michigan crop fields as a function of agricultural landscape structure. Agriculture, Ecosystems and the Environment. 77: 193-202.
- 68. **Menalled, F**, P. Marino, S. Gage, and D. Landis. 1999. Does agricultural landscape structure affect parasitism and parasitoid diversity? Ecological Applications 9: 634-641.
- 69. **Menalled, F.**, J. Lee, and D. Landis. 1999. Manipulating carabid beetle abundance alters prey removal rates in corn fields. Biocontrol 43: 441-456.
- 70. Carmona, D., **F. Menalled**, and D. Landis. 1999. Northern field cricket, *Gryllus pennsylvanicus* Burmeister (Orthoptera: Gryllidae): laboratory weed seed predation and within field activity-density. Journal of Economic Entomology 92: 825-829.
- 71. Vicari, R.L., **F. Menalled**, V. Di Stilio, S. Ucha, and N. Madanes. 1999. Productivity and nitrogen cycling in two poplar plantations (*Populus deltoides*) with different flooding dynamics in the Lower Delta of the Parana River, Buenos Aires (Argentina). Physis 57: 41-51.
- 72. **Menalled, F.**, M. Kelty, and J. Ewel. 1998. Canopy development in tropical tree plantations: a comparison of species mixtures and monocultures. For. Ecol. Management 104: 249-263.
- 73. Vicari, R.L., **F. Menalled**, V. Di Stilio, and N. Madanes. 1998. Litter decomposition in a poplar plantation (*Populus deltoides*) in the Lower Delta of the Parana River, Buenos Aires (Argentina). Physis 56: 9-13.
- 74. **Menalled, F.**, and J. Adamoli. 1995. A quantitative phytogeographic analysis of the species richness in forest communities of the Parana River Delta, Argentina. Vegetatio 120: 81-90.
- 75. Di Stilio, V., R.L. Vicari, and **F. Menalled**. 1995. Quantification of litterfall and nutrient contents in *Populus deltoides* plantations from the Parana River Lower Delta -Argentina-. Physis 50: 95-104.
- 76. **Menalled, F.**, M. Kelty, and J. Ewel. 1994. Canopy development of monocultures and species mixtures in forest plantations in Costa Rica. IUFRO -- *In* Proceedings of the Symposium on Mixed Stands, Portugal—54: 10-11.
- 77. Boyle, T., **F. Menalled**, and M. O'Leavy. 1994. Occurrence and physiological breakdown of self-incompatibility in Easter Cactus. Journal of the American Society of Horticulture Sciences 119: 1060-1067.
- 78. Bonaventura, S., M. Castanera, **F. Menalled**, and C. Mourelle. 1992. Vegetation units of the Carahuasi and Lagunillas regions, Pozuelos basin -Argentina-. (In Spanish). Biologia de Altura 3: 19-21.
- 79. Mendoza R., and **F. Menalled**. 1988. Residual effects following phosphate applications on four soils in the yield of *Lollium multiflorm*. (In Spanish). Ciencias del Suelo 6: 50-55.

#### **Books / Booklets**

- 1. Parkinson, H., J. Mangold, and **F. Menalled**. 2013. Weed Seedling Identification Guide for Montana and the Northern Great Plains. Montana State University Extension, Bozeman, MT. 160 pages.
- 2. Dewey, S.A, S.E. Enloe, **F. Menalled**, S. Miller, R. Whitesides, and L. Johnson –Editors-. 2006. Weed Management Handbook 2006-2007. Montana, Utah, Wyoming. Cooperative Extension Services Press.

#### **Book Chapters**

- 1. Smith. R.\*\*\*, M.R. Ryan, and **F. Menalled**. 2011. Direct and indirect impacts of weed management practices on soil quality. Soil Management: Building a Stable Base for Agriculture. J. Hatfield and T. Sauer, eds., pp 275-286. American Society of Agronomy Series.
- 2. Gan, Y., H.R. Kutcher, **F. Menalled**, G. Lafond, and S.A. Brandt. 2010. Intensifying production of using broadleaf crops in cereal-based cropping systems in the Northern Great Plains. Current

- Advancements in Soil Science and Agronomy Research in the Northern Great Plains. D. Malhi, ed., pp 277-299. Research Signpost, Kerala, India.
- 3. **Menalled, F.** 2008. Ecology and agriculture: Strategies for a sustainable development (*In Spanish*). Biology. 7<sup>th</sup> Edition in Spanish. H. Curtis; N. Sue, B. Arnes, A. Schnek and A. Massarini, eds. Editorial Médica Panamericana
- 4. **Menalled, F,** M. Liebman, and K. Renner. 2006. The ecology of weed seed predation in herbaceous crop systems. *In* Handbook of Sustainable Weed Management. D. Batish, ed., pp 297-327. The Haworth Press, Inc. Binghamton, NY.
- 5. **Menalled, F.**, and M. Liebman. 2004. Seed predation by insects. *In* Encyclopedia of Entomology, J. Capinera, ed., pp 1979-1982. Kluwer Academic Press.
- 6. **Menalled, F.**, and D. Landis. 2004. Conservation of ground beetles in annual crops. *In* Encyclopedia of Entomology, J. Capinera, ed., pp 593-595. Kluwer Academic Press.
- 7. **Menalled, F.**, D. Landis, and L. Dyer. 2004. Research and extension supporting ecologically based IPM systems. *In* New Dimensions in Agroecology. D. Clements and A. Shrestha, eds., pp 153-174. The Haworth Press.
- 8. **Menalled, F.,** J. Alvarez, and D. Landis. 2004. Molecular techniques, habitat management, and parasitoid conservation in annual cropping systems. Ecological Engineering for Pest Management: Advances in Habitat Manipulation for Arthropods. G Gurr, S. Wratten, and M. Altieri, eds., pp 101-115. CSIRO Press.
- 9. **Menalled, F.**, and D. Landis. 2000. Principles of field crop pest ecology. *In* Michigan Field Crop Pest Ecology. Cavigelli, M.A. and L. K. Probyn, eds., pp 14-24. Michigan State University Extension Bulletin E-2704.
- Landis, A., F. Menalled, J. Lee, D. Carmona, and A. Pérez-Valdéz. 2000. Habitat modification to enhance biological control in IPM. *In* Emerging Technologies in Integrated Pest Management: Concepts, Research and Implementation. Kennedy G., T. Sutton eds., pp. 226-239. APS Press, St. Paul.
- 11. Landis, D., and **F. Menalled**. 1998. Ecological considerations in the conservation of effective parasitoid communities in agricultural systems. *In* Conservation Biological Control, P. Barbosa ed., pp. 101-121. Academic Press. San Diego, CA.