

CURRICULUM VITAE

NAME

Dayan, Franck E

ADDRESS

Bioagricultural Sciences and Pest Management
College of Agricultural Sciences

Weed Research Laboratory

PHONE

(662) 816-6214

EDUCATION

1995 Ph D, Auburn University

1992 MS, Stephen F. Austin State University

1988 BS, Stephen F. Austin State University

ACADEMIC POSITIONS

January 1, 2016 - Present Professor, Colorado State University.

OTHER POSITIONS

October 1, 1996 - December 31, 2015 Plant Physiologist, United Department of Agriculture.

September 1, 1995 - September 30, 1996 Post-doctoral Research Associate, United Department of Agriculture.

PUBLISHED WORKS

Books

Dayan, F. E. (2005). *Somatic Mutation-Mediated Evolution of Herbicide Resistance in the Non-Indigenous Invasive Plant Hydrilla (Hydrilla Verticillata)* (vol. 1). BCPC Publications, Hampshire, United Kingdom.

Reddy, K., Dayan, F. E., Duke, S. (1998). *QSAR analysis of protoporphyrinogen oxidase inhibitors* (pp. 197-233). Washington, DC: Taylor and Francis.

Refereed Journal Articles

Romdhane, S., Devers-Lamrani, M., Barthelmebs, L., Calvayrac, C., Bertrand, C., Cooper, J.-F., Dayan, F. E., Martin-Laurent, F. (2016). Ecotoxicological impact of the bioherbicide leptospermone on the microbial community of two arable soils. *Frontiers in Microbiology*, 7, 775. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4877392/>

Patil, C., Calvayrac, C., Zhou, Y., Romdhane, S., Salvia, M.-V., Cooper, J.-F., Dayan, F. E., Bertrand, C. (2016). Environmental metabolic footprinting: A novel application to study the impact of a natural and a synthetic β -triketone herbicide in soil. *Science of The Total Environment*, 566-567, 552-558. <http://www.sciencedirect.com/science/article/pii/S0048969716310014>

- Corrêa, E. A., Dayan, F. E., Owens, D. K., Rimando, A. M., Duke, S. O. (2016). Glyphosate-resistant and conventional canola (*Brassica napus* L.) responses to glyphosate and aminomethylphosphonic acid (AMPA) treatment. *Journal of Agricultural and Food Chemistry*, 64(18), 3508-3513. <http://dx.doi.org/10.1021/acs.jafc.6b00446>
- Silva, F. M. L., Duke, S. O., Dayan, F. E., Velini, E. D. (2016). Low doses of glyphosate change the responses of soyabean to subsequent glyphosate treatments. *Weed Research*, 56, 124-136. <http://dx.doi.org/10.1111/wre.12189>
- Killeen, D. P., Larsen, L., Dayan, F. E., Gordon, K. C., Perry, N. B., van Klink, J. W. (2016). Nortriketones: Antimicrobial trimethylated acylphloroglucinols from manuka (*Leptospermum scoparium*). *Journal of Natural Products*, 79, 564-569. <http://dx.doi.org/10.1021/acs.jnatprod.5b00968>
- Carbonari, C. A., Latorre, D. O., Gomes, Giovanna L. G. C., Velini, E. D., Owens, D. K., Pan, Z., Dayan, F. E. (2016). Resistance to glufosinate is proportional to phosphinothricin acetyltransferase expression and activity in LibertyLink® and WideStrike® cotton. *Planta*, 243, 925-933. <http://dx.doi.org/10.1007/s00425-015-2457-3>
- Dayan, F. E., Owens, D. K., Corniani, N., Silva, F. M. L., Watson, S. B., Howell, J., Shaner, D. L. (2015). Biochemical markers and enzyme assays for herbicide mode of action and resistance studies. *Weed Science*, 63(sp1), 23-63. <http://dx.doi.org/10.1614/WS-D-13-00063.1>
- Duke, S., Dayan, F. E. (2015). Discovery of new herbicide modes of action with natural phytotoxins. *American Chemical Society Symposium Series*, 1204, 79-92.
- Salas, R. A., Scott, R. C., Dayan, F. E., Burgos, N. R. (2015). EPSPS gene amplification in glyphosate-resistant Italian ryegrass (*Lolium perenne* ssp. multiflorum) populations from Arkansas (United States). *Journal of Agricultural and Food Chemistry*, 63(25), 5885-5893. <http://dx.doi.org/10.1021/acs.jafc.5b00018>
- Maroli, A. S., Nandula, V. K., Dayan, F. E., Duke, S. O., Gerard, P., Tharayil, N. (2015). Metabolic profiling and enzyme analyses indicate a potential role of antioxidant systems in complementing glyphosate resistance in an *Amaranthus palmeri* biotype. *Journal of agricultural and food chemistry*, 63(41), 9199-9209.
- Trivella, A., Stawinoga, M., Dayan, F. E., Cantrell, C. L., Mazellier, P., Richard, C. (2015). Photolysis of natural b-triketonic herbicides in water. *Water Research*, 78, 28-36.
- Ribeiro, D. N., Nandula, V. K., Dayan, F. E., Rimando, A. M., Duke, S. O., Reddy, K. N., Shaw, D. R. (2015). Possible glyphosate tolerance mechanism in pitted morningglory (*Ipomoea lacunosa* L.). *Journal of agricultural and food chemistry*, 63(6), 1689-1697.
- Dayan, F. E., Owens, D. K., Watson, S. B., Asolkar, R. N., Boddy, L. G. (2015). Sarmentine, a natural herbicide from *Piper* species with multiple herbicide mechanisms of action. *Frontiers in Plant Science*, 6, doi: 10.3389/fpls.2015.00222. http://www.frontiersin.org/Journal/Abstract.aspx?s=1208&name=plant_metabolism_and_chemodiversity&ART_DOI=10.3389/fpls.2015.00222!!!
- Alarcón-Reverte, R., García, A., Watson, S. B., Abdallah, I., Sabate, S., Hernández, M. J., Dayan, F. E., Fischer, A. J. (2014). Concerted action of target-site mutations and high EPSPS activity in glyphosate-resistant junglerice (*Echinochloa colona*) from California. *Pest Management Science*, 71, 996-1007.
- Dayan, F. E., Owens, D. K., Tranel, P. J., Preston, C., Duke, S. O. (2014). Evolution of resistance to phytoene desaturase and protoporphyrinogen oxidase inhibitors—state of knowledge. *Pest management science*, 70(9), 1358-1366.

- Uddin, M. R., Park, S. U., Dayan, F. E., Pyon, J. Y. (2014). Herbicidal activity of formulated sorgoleone, a natural product of sorghum root exudate. *Pest management science*, 70(2), 252-257.
- Ribeiro, D. N., Pan, Z., Duke, S. O., Nandula, V. K., Baldwin, B. S., Shaw, D. R., Dayan, F. E. (2014). Involvement of facultative apomixis in inheritance of EPSPS gene amplification in glyphosate-resistant *Amaranthus palmeri*. *Planta*, 239, 199-212.
- Dayan, F. E., Duke, S. O. (2014). Natural compounds as next-generation herbicides. *Plant physiology*, 166(3), 1090-1105.
- Rocaboy-Faquet, E., Noguer, T., Romdhane, S., Bertrand, C., Dayan, F. E., Barthelmebs, L. (2014). Novel bacterial bioassay for a high-throughput screening of 4-hydroxyphenylpyruvate dioxygenase inhibitors. *Applied microbiology and biotechnology*, 98(16), 7243-7252.
- Corniani, N., Velini, E. D., Silva, F. M. L., Nanayakkara, N. P. Dhammika, Witschel, M. C., Dayan, F. E. (2014). Novel bioassay for the discovery of inhibitors of the 2-C-methyl-D-erythritol 4-phosphate (MEP) and terpenoid pathways leading to carotenoid biosynthesis. *PLoS ONE*, 9(7), e103704.
- Silva, F. M. L., Donega, M. A., Cerdeira, A. L., Corniani, N., Velini, E. D., Cantrell, C. L., Dayan, F. E., Coelho, M. N., Shea, K., Duke, S. O. (2014). Roots of the invasive species *Carduus nutans* L. and *C. acanthoides* L. produce large amounts of aplotaxene, a possible allelochemical. *Journal of Chemical Ecology*, 40, 276-284.
- Yang, S., Hao, G., Dayan, F. E., Tranel, P. J., Yang, G. (2013). Cover Picture: Insight into the Structural Requirements of Protoporphyrinogen Oxidase Inhibitors: Molecular Docking and CoMFA of Diphenyl Ether, Isoxazole Phenyl, and Pyrazole Phenyl Ether (Chin. J. Chem. 9/2013). *Chinese Journal of Chemistry*, 31(9), 1113-1113.
- Uddin, M. R., Park, S. U., Dayan, F. E., Pyon, J. Y. (2013). Herbicidal activity of formulated sorgoleone, a natural product of sorghum root exudate. *Pest Management Science*, 70, 252-257.
- Owens, D. K., Nanayakkara, N. P. Dhammika, Dayan, F. E. (2013). In planta mechanism of action of leptospermon: Impact of its physico-chemical properties on uptake, translocation, and metabolism. *Journal of Chemical Ecology*, 39, 262-270.
- Yang, S., Hao, G., Dayan, F. E., Tranel, P. J., Yang, G. (2013). Insight into the structural requirements of protoporphyrinogen oxidase inhibitors: Molecular docking and CoMFA of diphenyl ether, isoxazole phenyl, and pyrazole phenyl ether. *Chinese Journal of Chemistry*, 31, 1153-1158.
- Dayan, F. E., Dayan, E. A. (2013). Les porphyrines: Les couleurs de la vie. *Pour la Science*, 423, 66-72.
- Dayan, F. E., Zaccaro, Maria Leticia de M. (2012). Chlorophyll fluorescence as a marker for herbicide mechanisms of action. *Pesticide Biochemistry and Physiology*, 102, 189-197.
- Dayan, F. E., Dayan, E. A. (2012). Ein ring für die farben des lebens. *Spektrum der Wissenschaft*, 6/12, 30-38.
- Salas, R. A., Dayan, F. E., Pan, Z., Watson, S. B., Dickson, J. W., Scott, R. C., Burgos, N. R. (2012). EPSPS gene amplification in glyphosateresistant Italian ryegrass (*Lolium perenne* ssp. multiflorum) from Arkansas. *Pest Management Science*, 68(9), 1223-1230.
- Rimando, A. M., Pan, Z., Polashock, J. J., Dayan, F. E., Mizuno, C. S., Snook, M. E., Liu, C., Baerson, S. R. (2012). In planta production of the highly potent resveratrol analogue pterostilbene via stilbene synthase and Omethyltransferase coexpression. *Plant Biotechnology Journal*, 10(3), 269-283.

- Cantrell, C. L., Dayan, F. E., Duke, S. O. (2012). Natural products as sources for new pesticides. *Journal of Natural Products*, 75, 1231-1242.
- Sumiyanto, J., Dayan, F. E., Cerdeira, A. L., Wang, Y.-H., Khan, I. A., Moraes, R. M. (2012). Oligofructans content and yield of yacon (*Smallanthus sonchifolius*) cultivated in Mississippi. *Scientia Horticulturae*, 148, 83-88.
- Dayan, F. E., Owens, D. K., Duke, S. O. (2012). Rationale for a natural products approach to herbicide discovery. *Pest Management Science*, 68, 519-528.
- Wang, R. L., Staehelin, C., Dayan, F. E., Song, Y. Y., Su, Y. J., Zeng, R. S. (2012). Simulated acid rain accelerates litter decomposition and enhances the allelopathic potential of the invasive plant *Wedelia trilobata* (creeping daisy). *Weed Science*, 60, 462-467.
- Cerdeira, A. L., Cantrell, C. L., Dayan, F. E., Byrd, J. D., Duke, S. O. (2012). Tabanone, a new phytotoxic constituent of cogongrass (*Imperata cylindrica*). *Weed Science*, 60, 212-218.
- Bajsa, J., Pan, Z., Dayan, F. E., Owens, D. K., Duke, S. O. (2012). Validation of serine/threonine protein phosphatase as the herbicide target site of endothall. *Pesticide biochemistry and physiology*, 102(1), 38-44.
- Duke, S. O., Evidente, A., Fiore, M., Rimando, A. M., Dayan, F. E., Vurro, M., Christiansen, N., Looser, R., Hutzler, J., Grossmann, K. (2011). Effects of the aglycone of ascaulitoxin on amino acid metabolism in *Lemna paucicostata*. *Pesticide Biochemistry and Physiology*, 100, 41-50.
- Saadoun, I. S., Bataineh, S., Ababneh, Q., Hameed, K., Schrader, K. K., Cantrell, C. L., Dayan, F. E., Wedge, D. E. (2011). Evaluation of the toxicity of *Streptomyces aburaviensis* (R9) extract towards various agricultural pests. *Agricultural Sciences*, 2, 491-497.
- Dayan, F. E., Howell, J., Marais, J. M., Ferreira, D., Koivunen, M. E. (2011). Manuka oil, a natural herbicide with preemergence activity. *Weed Science*, 59, 464-469.
- Duke, S. O., Dayan, F. E. (2011). Modes of action of microbially-produced phytotoxins. *Toxins*, 3, 1038-1064.
- Dayan, F. E., Watson, S. B. (2011). Plant cell membrane as a marker for light-dependent and light-independent herbicide mechanisms of action. *Pesticide Biochemistry and Physiology*, 101, 182-190.
- Dayan, F. E., Dayan, E. A. (2011). Porphyrins: One ring in the colors of life. A class of pigment molecules binds King George III, vampires and herbicides. *American Scientist*, 99(3), 236-243.
- Bajsa, J., Pan, Z., Dayan, F. E., Owens, D. K., Duke, S. O. (2011). Validation of serine-threonine protein phosphatase as the herbicide target site of endothall. *Pesticide Biochemistry and Physiology*, 102, 38-44.
- Baerson, S. R., Schröder, J., Cook, D., Rimando, A. M., Pan, Z., Dayan, F. E., Noonan, B. P., Duke, S. O. (2010). Alkylresorcinol biosynthesis in plants: new insights from an ancient enzyme family? *Plant signaling & behavior!!!*, 5(10), 1286-1289.
- Cook, D. D., Rimando, A. M., Clemente, T. E., Schröder, J., Dayan, F. E., Nanayakkara, N. P. Dhammika, Pan, Z., Noonan, B. P., Fishbein, M., Abe, I., Duke, S. O., Baerson, S. R. (2010). Alkylresorcinol synthases expressed in *Sorghum bicolor* root hairs play an essential role in the biosynthesis of the allelopathic benzoquinone sorgoleone. *The Plant Cell*, 22, 867-887.
- Dayan, F. E., Daga, P. R., Duke, S. O., Lee, R. M., Tranel, P. J., Doerksen, R. J. (2010). Biochemical and structural consequences of a glycine deletion in the α -8 helix of protoporphyrinogen oxidase. *Biochimica et Biophysica Acta*, 1804, 1548-1556.

- Dayan, F. E., Duke, S. O., Grossmann, K. (2010). Herbicides as probes in plant biology. *Weed Science*, 58, 340–350.
- Dayan, F. E., Duke, S. O. (2010). Natural products for weed management in organic farming in the USA. *Outlooks on Pest Management*, 21(4), 156-160.
- Dayan, F. E., Rimando, A. M., Pan, Z., Baerson, S. R., Gimsing, A. L., Duke, S. O. (2010). Sorgoleone. *Phytochemistry*, 71, 1032–1039.
- Kini, S. G., Bhat, A. R., Pan, Z., Dayan, F. E. (2010). Synthesis and antitubercular activity of heterocycle substituted diphenyl ether derivatives. *Journal of Enzyme Inhibition and Medicinal Chemistry*, 25, 730–736.
- Dayan, F. E., Trindade, M. L., Velini, E. D. (2009). Amicarbazone, a new photosystem II inhibitor. *Weed Science*, 57(6), 579-583.
- Dayan, F. E., Howell, J., Weidenhamer, J. D. (2009). Dynamic root exudation of sorgoleone and its in planta mechanism of action. *Journal of Experimental Botany*, 60(7), 2107-2117.
- Duke, S. O., Blair, A. C., Dayan, F. E., Johnson, R. D., Meepagala, K. M., Cook, D., Bajsa, J. (2009). Is (–)-catechin a novel weapon of spotted knapweed (*Centaurea stoebe*)? *Journal of chemical ecology*, 35(2), 141-153.
- Gimsing, A. L., Bælum, J., Dayan, F. E., Locke, M. A., Sejerø, L. H., Jacobsen, C. S. (2009). Mineralization of the allelochemical sorgoleone in soil. *Chemosphere*, 76(8), 1041-1047.
- Dayan, F. E., Cantrell, C. L., Duke, S. O. (2009). Natural products in crop protection. *Bioorganic & medicinal chemistry!!!*, 17(12), 4022-4034.
- Alsaadawi, I. S., Dayan, F. E. (2009). Potentials and prospects of sorghum allelopathy in agroecosystems. *Allelopathy Journal*, 24, 255-270.
- Kini, S. G., Bhat, A. R., Bryant, B., Williamson, J. S., Dayan, F. E. (2009). Synthesis, antitubercular activity and docking study of novel cyclic azole substituted diphenyl ether derivatives. *European journal of medicinal chemistry*, 44(2), 492-500.
- Duke, S. O., Dayan, F. E., Bajsa, J., Meepagala, K. M., Hufbauer, R. A., Blair, A. C. (2009). The case against (–)-catechin involvement in allelopathy of *Centaurea stoebe* (spotted knapweed). *Plant Signaling & Behavior!!!*, 4(5), 422-424.
- Dayan, F. E., Singh, N., McCurdy, C. R., Godfrey, C. A., Larsen, L., Weavers, R. T., Van Klink, J. W., Perry, N. B. (2009). β -triketone inhibitors of plant p-hydroxyphenylpyruvate dioxygenase: Modeling and comparative molecular field analysis of their interactions. *Journal of Agricultural and Food Chemistry*, 57(12), 5194-5200.
- Baerson, S. R., Dayan, F. E., Rimando, A. M., Nanayakkara, N. D., Liu, C.-J., Schröder, J., Fishbein, M., Pan, Z., Kagan, I. A., Pratt, L. H. (2008). A functional genomics investigation of allelochemical biosynthesis in *Sorghum bicolor* root hairs. *Journal of Biological Chemistry*, 283(6), 3231-3247.
- Dayan, F. E., Ferreira, D., Wang, Y.-H., Khan, I. A., McInroy, J. A., Pan, Z. (2008). A pathogenic fungi diphenyl ether phytotoxin targets plant enoyl (acyl carrier protein) reductase. *Plant Physiology*, 147(3), 1062-1071.
- Pugh, N. D., Tamta, H., Balachandran, P., Wu, X., Howell, J., Dayan, F. E., Pasco, D. S. (2008). The majority of in vitro macrophage activation exhibited by extracts of some immune enhancing botanicals is due to bacterial lipoproteins and lipopolysaccharides. *International Immunopharmacology*, 8(7), 1023-1032.

- Dayan, F. E., Watson, S. B., Nanayakkara, N. D. (2007). Biosynthesis of lipid resorcinols and benzoquinones in isolated secretory plant root hairs. *Journal of Experimental Botany*, 58(12), 3263-3272.
- Kutrzeba, L., Dayan, F. E., Howell, J., Feng, J., Giner, J.-L., Zjawiony, J. K. (2007). Biosynthesis of salvinorin A proceeds via the deoxyxylulose phosphate pathway. *Phytochemistry*, 68(14), 1872-1881.
- Cook, D., Dayan, F. E., Rimando, A. M., Nanayakkara, N. D., Pan, Z., Duke, S. O., Baerson, S. R. (2007). Molecular and biochemical characterization of a novel polyketide synthase likely to be involved in the biosynthesis of sorgoleone. *Am. Chem. Soc. Symp. Ser*, 955, 141-151.
- Dayan, F. E., Duke, S. O., Sauldubois, A., Singh, N., McCurdy, C., Cantrell, C. (2007). p-Hydroxyphenylpyruvate dioxygenase is a herbicidal target site for β -triketones from *Leptospermum scoparium*. *Phytochemistry*, 68(14), 2004-2014.
- Cantrell, C. L., Duke, S. O., Fronczek, F. R., Osbrink, W. L., Mamonov, L. K., Vassilyev, J. I., Wedge, D. E., Dayan, F. E. (2007). Phytotoxic eremophilanes from *Ligularia macrophylla*. *Journal of Agricultural and Food Chemistry*, 55(26), 10656-10663.
- Cantrell, C. L., Cook, D. D., Dayan, F. E., Ferreira, D. (2007). The 2006 annual meeting of the Phytochemical Society of North America: Special issue of phytochemistry, phytochemistry pioneer awards and the 2006 meeting scientific highlights. *Phytochemistry*, 68(14), 1826-1829.
- Baerson, S. R., Dayan, F. E., Rimando, A. M., Pan, Z., Cook, D., Nanayakkara, N. D., Duke, S. O. (2006). A functional genomics approach for the identification of genes involved in the biosynthesis of the allelochemical sorgoleone. *American Chemical Society*, 927, 265-276.
- Arias, R. S., Dayan, F. E., Michel, A., Howell, J., Scheffler, B. E. (2006). Characterization of a higher plant herbicideresistant phytoene desaturase and its use as a selectable marker. *Plant Biotechnology Journal*, 4(2), 263-273.
- Dayan, F. E. (2006). Factors modulating the levels of the allelochemical sorgoleone in *Sorghum bicolor*. *Planta*, 224(2), 339-346.
- Rimando, A. M., Kagan, I. A., Dayan, F. E., Czarnota, M. A., Weston, L. A. (2005). Chemical basis for weed suppressive activity of sorghum. *ACS Symposium Series*, 906, 59-70.
- Białońska, D., Dayan, F. E. (2005). Chemistry of the lichen *Hypogymnia physodes* transplanted to an industrial region. *Journal of Chemical Ecology*, 31(12), 2975-2991.
- Kobaisy, M., Tellez, M. R., Dayan, F. E., Mamonov, L. K., Mukanova, G. S., Sitpaeva, G. T., Gemejjeva, N. G. (2005). Composition and phytotoxic activity of *Nepeta pannonica* L. essential oil. *Journal of Essential Oil Research*, 17(6), 704-707.
- Kobaisy, M., Tellez, M., Dayan, F. E., Mamonov, L., Mukanova, G., Sitpaeva, G., Gemejjeva, N. (2005). Composition and phytotoxic *Nepeta pannonica* L. essential oil. *Journal of essential oil research: JEOR*.
- Schrader, K. K., Dayan, F. E., Nanayakkara, N. (2005). Generation of reactive oxygen species by a novel anthraquinone derivative in the cyanobacterium *Planktothrix perornata* (Skuja). *Pesticide Biochemistry and Physiology*, 81(3), 198-207.
- Dayan, F. E., Netherland, M. D. (2005). Hydrilla, the perfect aquatic weed, becomes more noxious than ever. *Outlooks on pest management*, 16(6), 277.

- Pugh, N. D., Balachandran, P., Lata, H., Dayan, F. E., Joshi, V., Bedir, E., Makino, T., Moraes, R., Khan, I., Pasco, D. S. (2005). Melanin: dietary mucosal immune modulator from Echinacea and other botanical supplements. *International immunopharmacology*, 5(4), 637-647.
- Arias, R. S., Netherland, M. D., Scheffler, B. E., Puri, A., Dayan, F. E. (2005). Molecular evolution of herbicide resistance to phytoene desaturase inhibitors in *Hydrilla verticillata* and its potential use to generate herbicideresistant crops. *Pest Management Science*, 61(3), 258-268.
- Joshi, R. C., Meepagala, K. M., Sturtz, G., Cagauan, A. G., Mendoza, C. O., Dayan, F. E., Duke, S. O. (2005). Molluscicidal activity of vulgarone B from *Artemisia douglasiana* (Besser) against the invasive, alien, mollusc pest, *Pomacea canaliculata* (Lamarck). *International journal of pest management*, 51(3), 175-180.
- Duke, S. O., Dayan, F. E., Kagan, I. A., Baerson, S. R. (2005). New herbicide target sites from natural compounds. *ACS symposium series*, 892, 151-160.
- Tabanca, N., Douglas, A. W., Bedir, E., Dayan, F. E., Kirimer, N., Baser, K. H. C., Aytac, Z., Khan, I. A., Scheffler, B. E. (2005). Patterns of essential oil relationships in *Pimpinella* (Umbelliferae) based on phylogenetic relationships using nuclear and chloroplast sequences. *Plant Genetic Resources: Characterization and Utilization*, 3(02), 149-169.
- Duke, S. O., Belz, R. G., Baerson, S. R., Pan, Z., Cook, D. D., Dayan, F. E. (2005). The potential for advances in crop allelopathy. *Outlooks on Pest Management*, 16(2), 64-70.
- Baerson, S. R., Cook, D., Dayan, F. E., Rimando, A., Pan, Z., Duke, S. (2005). The use of functional genomics to advance allelopathic science-investigating sorgoleone biosynthesis as an example. *Proceedings of the 4th world congress on allelopathy, Wagga Wagga, Australia*.
- Moraes, R. M., Andrade, Z. D., Bedir, E., Dayan, F. E., Lata, H., Khan, I., Pereira, A. (2004). Arbuscular mycorrhiza improves acclimatization and increases lignan content of micropropagated mayapple (*Podophyllum peltatum* L.). *Plant Science*, 166(1), 23-29.
- Arias, R., Netherland, M., Michel, A., Duke, S., Scheffler, B., Dayan, F. E. (2004). Bioengineering resistance to phytoene desaturase inhibitors in *Arabidopsis thaliana*. *Meeting Proceedings*.
- Li, J., Smeda, R. J., Nelson, K. A., Dayan, F. E. (2004). Physiological basis for resistance to diphenyl ether herbicides in common waterhemp (*Amaranthus rudis*). *Weed Science*, 52(3), 333-338.
- Michel, A., Arias, R. S., Scheffler, B. E., Duke, S. O., Netherland, M., Dayan, F. E. (2004). Somatic mutation-mediated evolution of herbicide resistance in the nonindigenous invasive plant hydrilla (*Hydrilla verticillata*). *Molecular Ecology*, 13(10), 3229-3237.
- Meazza, G., Dayan, F. E., Wedge, D. E. (2003). Activity of quinones on *Colletotrichum* species. *Journal of agricultural and food chemistry*, 51(13), 3824-3828.
- Kagan, I. A., Rimando, A. M., Dayan, F. E. (2003). Chromatographic separation and in vitro activity of sorgoleone congeners from the roots of *Sorghum bicolor*. *Journal of agricultural and food chemistry*, 51(26), 7589-7595.
- Dayan, F. E., Kagan, I. A., Rimando, A. M. (2003). Elucidation of the biosynthetic pathway of the allelochemical sorgoleone using retrobiosynthetic NMR analysis. *Journal of Biological Chemistry*, 278(31), 28607-28611.
- Dayan, F. E., Kuhajek, J. M., Canel, C., Watson, S. B., Moraes, R. M. (2003). *Podophyllum peltatum* possesses a β -glucosidase with high substrate specificity for the aryltetralin lignan podophyllotoxin. *Biochimica et Biophysica Acta (BBA)-Proteins & Proteomics!!!*, 1646(1), 157-163.

- Rimando, A. M., Dayan, F. E., Streibig, J. C. (2003). PSII inhibitory activity of resorcinolic lipids from *Sorghum bicolor*. *Journal of Natural Products*, 66(1), 42-45.
- Dayan, F. E., Duke, S. O. (2003). Trichomes and root hairs: natural pesticide factories. *Pesticide Outlook*, 14(4), 175-178.
- Duke, S. O., Baerson, S. R., Dayan, F. E., Rimando, A. M., Scheffler, B. E., Tellez, M. R., Wedge, D. E., Schrader, K. K., Akey, D. H., Arthur, F. H. (2003). United States Department of Agriculture–Agricultural Research Service research on natural products for pest management. *Pest management science*, 59(67), 708-717.
- Oliva, A., Moraes, R., Watson, S., Duke, S., Dayan, F. E. (2002). Aryltetralin lignans inhibit plant growth by affecting the formation of mitotic microtubular organizing centers. *Pesticide Biochemistry and Physiology*, 72(1), 45-54.
- Dayan, F. E., Rimando, A. M., Tellez, M. R., Scheffler, B. E., Roy, T., Abbas, H. K., Duke, S. O. (2002). Bioactivation of the Fungal Phytotoxin 2, 5-Anhydro-D-glucitol by Glycolytic Enzymes: An Essential Component of its Mechanism of Action. *Zeitschrift für Naturforschung C*, 57(7-8), 645-653.
- Duke, S. O., Dayan, F. E., Rimando, A. M., Schrader, K. K., Aliotta, G., Oliva, A., Romagni, J. G. (2002). Chemicals from nature for weed management. *Weed Science*, 50, 138-151.
- Tellez, M. R., Khan, I. A., Kobaisy, M., Schrader, K. K., Dayan, F. E., Osbrink, W. (2002). Composition of the essential oil of *Lepidium meyenii* (Walp.). *Phytochemistry*, 61(2), 149-155.
- Dayan, F. E. (2002). Octan-1-ol/water partition coefficients of p-benzo- and p-naphthoquinones corrected for pH effect. *Journal of Chemical Research*, 2002(10), 518-519.
- Futagawa, M., Wedge, D. E., Dayan, F. E. (2002). Physiological factors influencing the antifungal activity of zopfiellin. *Pesticide Biochemistry and Physiology*, 73(2), 87-93.
- Kobaisy, M., Tellez, M. R., Dayan, F. E., Duke, S. O. (2002). Phytotoxicity and volatile constituents from leaves of *Callicarpa japonica* Thunb. *Phytochemistry*, 61(1), 37-40.
- Meazza, G., Scheffler, B. E., Tellez, M. R., Rimando, A. M., Romagni, J. G., Duke, S. O., Nanayakkara, D., Khan, I. A., Abourashed, E. A., Dayan, F. E. (2002). The inhibitory activity of natural products on plant p-hydroxyphenylpyruvate dioxygenase. *Phytochemistry*, 60(3), 281-288.
- Canel, C., Dayan, F. E., Ganzera, M., Moraes, R. M. (2001). High yields of podophyllotoxin from leaves of *Podophyllum peltatum* by in situ conversion of podophyllotoxin-4-O- β -D-glucopyranoside. *Planta Medica*, 67, 97-99.
- Dayan, F. E., Romagni, J. G. (2001). Lichens as a potential source of pesticides. *Pesticide Outlook*, 12(6), 229-232.
- Czarnota, M. A., Paul, R. N., Dayan, F. E., Nimbai, C. I., Weston, L. A. (2001). Mode of action, localization of production, chemical nature, and activity of sorgoleone: A potent PSII inhibitor in *Sorghum* spp. Root Exudates. *Weed Technology*, 15, 813-825.
- Kobaisy, M., Tellez, M. R., Webber, C. L., Dayan, F. E., Schrader, K. K., Wedge, D. E. (2001). Phytotoxic and fungitoxic activities of the essential oil of kenaf (*Hibiscus cannabinus* L.) leaves and its composition. *Journal of Agricultural and Food Chemistry*, 49(8), 3768-3771.

- Rimando, A. M., Olofsdotter, M., Dayan, F. E., Duke, S. O. (2001). Searching for rice allelochemicals. *Agronomy Journal*, 93(1), 16-20.
- Duke, S. O., Scheffler, B. E., Dayan, F. E., Weston, L. A., Ota, E. (2001). Strategies for using transgenes to produce allelopathic crops. *Weed Technology*, 15, 826-834.
- Dayan, F. E., Meazza, G., Bettarini, F., Signorini, E., Piccardi, P., Romagni, J. G., Duke, S. O. (2001). Synthesis, herbicidal activity, and mode of action of IR 5790. *Journal of Agricultural and Food Chemistry*, 49(5), 2302-2307.
- Schrader, K. K., Dayan, F. E., Allen, S. N., de Regt, M. Q., Tucker, C. S., Paul, Jr, R. N. (2000). 9, 10Anthraquinone reduces the photosynthetic efficiency of *Oscillatoria perornata* and modifies cellular inclusions. *International Journal of Plant Sciences*, 161(2), 265-270.
- Romagni, J. G., Allen, S. N., Dayan, F. E. (2000). Allelopathic effects of volatile cineoles on two weedy plant species. *Journal of Chemical Ecology*, 26(1), 303-313.
- Dayan, F. E., Vincent, A. C., Romagni, J. G., Allen, S. N., Duke, S. O., Duke, M. V., Bowling, J. J., Zjawiony, J. K. (2000). Amino-and urea-substituted thiazoles inhibit photosynthetic electron transfer. *Journal of Agricultural and Food Chemistry*, 48(8), 3689-3693.
- Grey, T. L., Walker, R. H., Wehtje, G. R., Adams, Jr, J., Dayan, F. E., Weete, J. D., Hancock, H. G., Kwon, O. (2000). Behavior of sulfentrazone in ionic exchange resins, electrophoresis gels, and cation-saturated soils. *Weed Science*, 48, 239-247.
- Tellez, M. R., Dayan, F. E., Schrader, K. K., Wedge, D. E., Duke, S. O. (2000). Composition and some biological activities of the essential oil of *Callicarpa americana* (L.). *Journal of agricultural and food chemistry*, 48(7), 3008-3012.
- Romagni, J. G., Duke, S. O., Dayan, F. E. (2000). Inhibition of plant asparagine synthetase by monoterpene cineoles. *Plant physiology*, 123(2), 725-732.
- Dayan, F. E., Romagni, J. G., Duke, S. O. (2000). Investigating the mode of action of natural phytotoxins. *Journal of Chemical Ecology*, 26(9), 2079-2094.
- Romagni, J. G., Dayan, F. E. (2000). Measuring asparagine synthetase activity in crude plant extracts. *Journal of Agricultural and Food Chemistry*, 48(5), 1692-1696.
- Duke, S. O., Romagni, J. G., Dayan, F. E. (2000). Natural products as sources for new mechanisms of herbicidal action. *Crop Protection*, 19(8), 583-589.
- Duke, S., Dayan, F. E., Romagni, J., Rimando, A. (2000). Natural products as sources of herbicides: current status and future trends. *Weed Research*, 40, 99-112.
- Canel, C., Moraes, R. M., Dayan, F. E., Ferreira, D. (2000). Podophyllotoxin. *Phytochemistry*, 54(2), 115-120.
- Dayan, F. E., Allen, S. N. (2000). Predicting the activity of the natural phytotoxic diphenyl ether cyperine using comparative molecular field analysis. *Pest Management Science*, 56(8), 717-722.
- Romagni, J. G., Meazza, G., Nanayakkara, N., Dayan, F. E. (2000). The phytotoxic lichen metabolite, usnic acid, is a potent inhibitor of plant p-hydroxyphenylpyruvate dioxygenase. *FEBS letters*, 480(2), 301-305.
- Dayan, F. E., Hernández, A., Allen, S. N., Moraes, R. M., Vroman, J. A., Avery, M. A., Duke, S. O. (1999). Comparative phytotoxicity of artemisinin and several sesquiterpene analogues. *Phytochemistry*, 50(4), 607-

- Galindo, J. C., Hernández, A., Dayan, F. E., Tellez, M. R., Macías, Francisco A, Paul, R. N., Duke, S. O. (1999). Dehydrozaluzanin C, a natural sesquiterpenolide, causes rapid plasma membrane leakage. *Phytochemistry*, 52(5), 805-813.
- Vincent, A., Dayan, F. E., Maas, J., Wedge, D. E. (1999). Detection and isolation of antifungal compounds in strawberry inhibitory *Tocolletotrichum fragariae*. *Advances in Strawberry Research*, 18, 28-36.
- Jacobs, N., Kruszyna, H., Hier, J., Dayan, F. E., Duke, S., Pont, F., Montforts, F. (1999). Glutathione-dependent oxidative modification of protoporphyrin and other dicarboxylic porphyrins by mammalian and plant peroxidases. *Biochemical and Biophysical Research Communications*, 259(1), 195-200.
- Streibig, J. C., Dayan, F. E., Rimando, A. M., Duke, S. O. (1999). Joint action of natural and synthetic photosystem II inhibitors. *Pesticide Science*, 55(2), 137-146.
- Dayan, F. E., Romagni, J., Tellez, M., Romando, A., Duke, S. (1999). Managing weeds with natural products. *Pesticide Outlook*, 10, 185-188.
- Rimando, A. M., Dayan, F. E., Mikell, J. R., Moraes, R. M. (1999). Phytotoxic lignans of *Leucophyllum frutescens*. *Natural Toxins*, 7(1), 39-43.
- Dayan, F. E., Watson, S., Galindo, J. C. G., Hernandez, A., Dou, J., McChesney, J. D., Duke, S. O. (1999). Phytotoxicity of quassinoids: Physiological responses and structural requirements. *Pesticide Biochemistry and Physiology*, 65, 15-24.
- Duke, S. O., Dayan, F. E. (1999). Probing plastid functions with phytotoxins that target specific sites. *Riken Review*, 9-10.
- Dayan, F. E., Rimando, A., Duke, S., Jacobs, N. (1999). Thiol-dependent degradation of protoporphyrin IX by plant peroxidases. *FEBS Letters*, 444(2), 227-230.
- Rimando, A. M., Dayan, F. E., Czarnota, M. A., Weston, L. A., Duke, S. O. (1998). A New Photosystem II Electron Transfer Inhibitor from Sorghum. *Journal of Natural Products*, 61, 927-930.
- Rimando, A. M., Dayan, F. E., Czarnota, M. A., Weston, L. A., Duke, S. O. (1998). A new photosystem II electron transfer inhibitor from Sorghum bicolor. *Journal of natural products*, 61(7), 927-930.
- Dayan, F. E., Duke, S. O., Faibis, V., Jacobs, J. M., Jacobs, N. J. (1998). Horseradish peroxidase-dependent oxidation of deuteroporphyrin IX into chlorins. *Archives of biochemistry and biophysics*, 351(1), 27-34.
- Dayan, F. E., Armstrong, B. M., Weete, J. D. (1998). Inhibitory activity of sulfentrazone and its metabolic derivatives on soybean (*Glycine max*) protoporphyrinogen oxidase. *Journal of Agricultural and Food Chemistry*, 46(5), 2024-2029.
- Dayan, F. E., Duke, S. O., Reddy, K. N., Hamper, B. C., Leschinsky, K. L. (1997). Effects of isoxazole herbicides on protoporphyrinogen oxidase and porphyrin physiology. *Journal of Agricultural and Food Chemistry*, 45(3), 967-975.
- Dayan, F. E., Duke, S. (1997). Overview of protoporphyrinogen oxidase-inhibiting herbicides. *Proc. Brighton Crop Protection Conf.-Weeds*, 83-92.
- Dayan, F. E., Duke, S. O., Weete, J. D., Hancock, H. G. (1997). Selectivity and mode of action of carfentrazoneethyl, a novel phenyl triazolinone herbicide. *Pesticide science*, 51(1), 65-73.

- Dayan, F. E., Weete, J. D., Duke, S. O., Hancock, H. G. (1997). Soybean (*Glycine max*) cultivar differences in response to sulfentrazone. *Weed science*, 634-641.
- Jacobs, J., Jacobs, N., Kuhn, C., Gorman, N., Dayan, F. E., Duke, S., Sinclair, J., Sinclair, P. (1996). Oxidation of porphyrinogens by horseradish peroxidase and formation of a green pyrrole pigment. *Biochemical and Biophysical Research Communications*, 227(1), 195-199.
- Dayan, F. E., Weete, J. D., Hancock, H. G. (1996). Physiological basis for differential sensitivity to sulfentrazone by sicklepod (*Senna obtusifolia*) and coffee senna (*Cassia occidentalis*). *Weed science*, 44, 12-17.
- Dayan, F. E., Duke, S. O. (1996). Porphyrin-generating herbicides. *Pesticide Outlook*, 7, 22-27.
- Dayan, F. E., Green, H. M., Weete, J. D., Hancock, H. G. (1996). Postemergence activity of sulfentrazone: effects of surfactants and leaf surfaces. *Weed science*, 44, 797-803.

Refereed Chapters in Books

- Duke, S. O., Scheffler, B. E., Boyette, C. D., Dayan, F. E. (2015). Biotechnology in weed control. In Kirk-Othmer (Ed.), *Encyclopedia of Chemical Technology*. New York, NY: John Wiley & Sons, Inc..
- Duke, S., Dayan, F. E. (2015). Classification and mode of action of herbicides. *Uso de herbicidas en la agricultura del siglo XXI: [II Simposium Internacional "Uso de herbicidas en la agricultura del siglo XXI"]* (pp. 31-44). Servicio de Publicaciones.
- Duke, S. O., Dayan, F. E. (2015). Natural toxins that affect plant amino acid metabolism. In D'Mello, F. (Ed.), *Amino Acids in Higher Plants* (pp. 448-460). Wallingford, UK: CAB International.
- Duke, S. O., Baerson, S. R., Cantrell, C. L., Wedge, D. E., Kumudini, M. M., Pan, Z., Rimando, A. M., Schrader, K. K., Tabanca, N., Owens, D. K., Dayan, F. E. (2014). Phytochemicals for pest management: Current advances and future opportunities. In Gang, David R. (Ed.), *50 Years of Phytochemistry Research* (vol. 43, pp. 71-94). Switzerland: Springer International Publishing.
- Duke, S. O., Owens, D. K., Dayan, F. E. (2014). The growing need for biochemical bioherbicides. In Gross, Aaron D.; Coats, Joel R.; Duke, Stephen O.; Seiber, James N. (Ed.), *Biopesticides: State of the Art and Future Opportunities* (vol. 1172, pp. 31-43). American Chemical Society. <http://dx.doi.org/10.1021/bk-2014-1172.ch003>
- Duke, S., Dayan, F. E. (2013). *Clues to new herbicide mechanisms of action from natural sources* (vol. 1141, pp. 203-215). ACS Symp Ser.
- Duke, S. O., Baerson, S. R., Cantrell, C. L., Wedge, D. E., Meepagala, K. M., Pan, Z., Rimando, A. M., Schrader, K. K., Tabanca, N., Owens, D. K., Dayan, F. E. (2013). Phytochemicals for pest management: current advances and future opportunities. *50 Years of Phytochemistry Research* (pp. 71-94). Springer International Publishing.
- Duke, S., Dayan, F. E. (2011). *Bioactivity of herbicides* (vol. 2, pp. 23-35). Comprehensive biotechnology.
- Dayan, F. E., Duke, S. O. (2010). Protoporphyrinogen oxidase-inhibiting herbicides. In Krieger, R.; Doull, J.; Hodgson, E.; Maibach, H.; Reiter, L.; Ritter, L.; Ross, J.; Slikker, W. Jr.; Van Hemmen, J. (Ed.), *Haye's Handbook of Pesticide Toxicology* (3rd ed., vol. 2, pp. 1733-1751). San Diego, CA: Academic Press, Elsevier.
- Schrader, K. K., Dayan, F. E. (2009). *Antioxidant enzyme activities in the cyanobacteria *Planktothrix agardhii*, *Planktothrix perornata*, *Raphidiosis brookii*, and the green alga *Selenastrum capricornutum**. Nova Science

Publishers, Inc., Hauppauge, NY.

- Dayan, F. E., Duke, S. O. (2009). Biological activity of allelochemicals. *Plant-derived Natural Products* (pp. 361-384). Springer US.
- Duke, S. O., Baerson, S. R., Rimando, A. M., Pan, Z., Dayan, F. E., Belz, R. G. (2007). Biocontrol of weeds with allelopathy: conventional and transgenic approaches. *Novel biotechnologies for biocontrol agent enhancement and management* (pp. 75-85). Springer Netherlands.
- Dayan, F. E., Duke, S. O. (2006). Clues in the search for new herbicides. *Allelopathy* (pp. 63-83). Springer Netherlands.
- Duke, S. O., Dayan, F. E. (2006). Modes of action of phytotoxins from plants. *Allelopathy* (pp. 511-536). Springer Netherlands.
- Cook, D., Dayan, F. E., Rimando, A. M., Pan, Z., Duke, S. O., Baerson, S. R. (2006). Molecular and biochemical investigations of sorgoleone biosynthesis. *Recent Advances in Phytochemistry* (vol. 40, pp. 157-177). Elsevier.
- Duke, S. O., Rimando, A. M., Schrader, K. K., Cantrell, C., Meepagala, K. M., Wedge, D. E., Tabanca, N., Dayan, F. E. (2006). *Natural products for pest management* (pp. 209-254). Selected Topics in the Chemistry of Natural Products.
- Dayan, F. E., Duke, S. O. (2003). *Carotenoid Biosynthesis Inhibitors* (vol. 2, pp. 744-749). New York NY: Encyclopedia of Agrochemicals.
- Dayan, F. E., Romagni, J. G., Duke, S. O. (2003). *Cinmethylin* (vol. 2, pp. 754-757). New York, NY: Encyclopedia of Agrochemicals.
- Romagni, J., Rosell, R., Nanayakkara, N., Dayan, F. E. (2003). *Ecophysiology and potential modes of action for selected lichen secondary metabolites* (pp. 13-33). *Allelopathy. Chemistry and Mode of Action of Allelochemicals*.
- Duke, S. O., Dayan, F. E., Baerson, S. R., Romagni, J. G., Agarwal, A., Oliva, A. (2003). *Natural phytotoxins with potential for development in weed management strategies* (pp. 143-154). *Chemistry of Crop Protection: Progress and Prospects in Science and Regulation*.
- Dayan, F. E., Duke, S. O. (2003). *Protoporphyrinogen Oxidase Inhibitors* (vol. 2, pp. 850-863). New York, NY: Encyclopedia of Agrochemicals.
- Duke, S., Scheffler, B., Dayan, F. E., Reigosa, M., Pedrol, N. (2002). *Allelochemicals as herbicides* (pp. 183-195). *Allelopathy: from molecules to ecosystems*.
- Romagni, J., Nanayakkara, N., Rosell, R., Dayan, F. E., Reigosa, M., Pedrol, N. (2002). *Ecophysiological roles of selected lichen secondary compounds* (pp. 113-127). *Allelopathy: from molecules to ecosystems*.
- Dayan, F. E. (2002). In Pimentel, D (Ed.), *Natural Pesticides* (pp. 521-525). New York, NY: Encyclopedia of Pest Management.
- Duke, S., Rimando, A., Scheffler, B., Dayan, F. E., Reigosa, M., Pedrol, N. (2002). *Strategies for research in applied aspects of allelopathy* (pp. 139-152). *Allelopathy: from molecules to ecosystems*.
- Romagni, J. G., Dayan, F. E. (2002). Structural diversity of lichen metabolites and their potential use. *Advances in Microbial Toxin Research and its Biotechnological Exploitation* (pp. 151-169). Springer US.

- SCHRADER, STEPHEN O DUKE KEVIN K, Dayan, F. E. (2002). *Terpenoid-Based Defense in Plants and Other Organisms* (pp. 319-355). Lipid Biotechnology.
- Moraes, R. M., Dayan, F. E., Canel, C. (2002). The lignans of Podophyllum. *Bioactive Natural Products* (vol. 26, pp. 149-182). Elsevier.
- DUKE, S. O., BAERSON, S. R., Dayan, F. E., KAGAN, I. A. (2001). *Biocontrol of Weeds without the Biocontrol* (vol. 339, pp. 96-105). Enhancing Biocontrol Agents and Handling Risks.
- Scheffer, B. E., Duke, S. O., Dayan, F. E., Ota, E. (2001). *Enhancement through biotechnology* (vol. 35, pp. 257-274). Recent Advances in Phytochemistry.
- Dayan, F. E., Romagni, J., Duke, S. (2001). *Protoporphyrinogen oxidase inhibitors* (pp. 1529-1542). San Diego, CA: Handbook of Pesticide Toxicology.
- Duke, S. O., Rimando, A. M., Dayan, F. E., Canel, C., Wedge, D. E., Tellez, M. R., Schrader, K. K., Weston, L. A., Smillie, T. J., Paul, R. (2000). *Strategies for the discovery of bioactive phytochemicals* (pp. 1-20). Phytochemicals as Bioactive Agents.
- Dayan, F. E., Reddy, K. N., Duke, S. O. (1999). Structure-activity relationships of diphenyl ethers and other oxygen-bridged protoporphyrinogen oxidase inhibitors. *Peroxidizing Herbicides* (pp. 141-161). Springer Berlin Heidelberg.
- Duke, S., Dayan, F. E., Rimando, A. (1998). In Hall, JA (Ed.), *Natural products as tools for weed management* (pp. 1-11). Tokyo: Recent topics of weed science and weed technology.
- Dayan, F. E., Duke, S. (1997). *Phytotoxicity of protoporphyrinogen oxidase inhibitors: phenomenology, mode of action and mechanisms of resistance* (vol. 1, pp. 11-36). Reviews in Toxicology.

Refereed Proceedings or Transactions

- Duke, S. O., Dayan, F. E. (2010). *Introduction to the Symposium on Nonherbicide Use of Herbicides* (3rd ed., vol. 58, pp. 323-323). Weed Science.
- Dayan, F. E., Cook, D., Baerson, SR, Rimando, A. (2005). *Manipulating the lipid resorcinol pathway to enhance allelopathy in rice* (pp. 175-181). Allelopathy International Congress. In: JDI Harper, M. An, H. Wu & JH Kent (eds.), Proceedings of the Fourth World Congress on Allelopathy!!!.
- Cook, D. C., Baerson, SR, Rimando, A., Dayan, F. E., Duke, S. (2004). *Prospects for engineering Vaccinium germplasm for the production of a high-potency resveratrol analogue* (vol. 40, pp. 23A-23A). SPRINGER 233 SPRING ST, NEW YORK, NY 10013 USA.
- Duke, S., Dayan, F. E. (1997). Natural products as leads for new herbicide modes of action. *Brighton Conference Symposium Proceedings*. Brighton Conference Symposium Proceedings.

Non-Refereed Journal Articles

- Duke, S., Scheffler, B., Dayan, F., Dyer, W. (2002). Genetic engineering crops for improved weed management traits. *Crop biotechnology*, 829, 52-66.
- Dayan, F. E., CANEL, C. (2002). National Center for Natural Products Research, The Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi, University, MS 38677, USA.

Non-Refereed Proceedings or Transactions

- Gimsing, A. L., Dayan, F. E., Locke, M., Bælum, J., Sejerø, L., Jacobsen, C. S. (2011). Mineralization of Sorgoleone, a Phytotoxic Compound Produced by Sorghum, in Soil. *5 th SETAC World Congress, Program Book: Protecting Our Global Environment*. 6th World Congress/SETAC Europe 22nd Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC).
- Gimsing, A. L., Dayan, F. E., Bælum, J., Jacobsen, C. S. (2011). Mineralization of Sorgoleone, an Allelochemical Produced by Sorghum, in Soil. *5 th World Congress on Allelopathy: Growing Awareness of the Role of Allelopathy in Ecological, Agricultural, and Environmental Processes*. Proceedings of 5 th World Congress on Allelopathy.
- Duke, S. O., Dayan, F. E., Cantrell, C. L., Rimando, A. M., Wedge, D. E., Pan, Z., Baerson, S. R., Meepagala, K. M. (2011). *Phytochemicals and genes for their synthesis in pest management* (vol. 50, pp. 620-620). INFORMA HEALTHCARE TELEPHONE HOUSE, 69-77 PAUL STREET, LONDON EC2A 4LQ, ENGLAND.
- Dayan, F. E., Cantrell, C., Duke, S., van Klink, J., Perry, N. (2009). p-Hydroxyphenylpyruvate dioxygenase, a herbicide target site for natural β -triketones. *ENDURE International Conference* (pp. 1-4). proceedings of ENDURE International Conference.
- Kutrzeba, L., Zjawiony, J., Dayan, F. E. (2008). *Salvinorin B as a putative biosynthetic precursor of salvinorin A. Study on O-acetyltransferase in glandular trichomes isolated from Salvia divinorum* (03rd ed., vol. 74, pp. P-30). Proceedings of the American Society of Pharmacognosy.
- Kutrzeba, L., Zjawiony, J., Dayan, F. E. (2007). Salvinorin B as a putative biosynthetic precursor of Salvinorin A. study on O-acetyltransferase in glandular trichomes isolated from *Salvia divinorum*. *PLANTA MEDICA* (vol. 74, pp. 332-332). GEORG THIEME VERLAG KG RUDIGERSTR 14, D-70469 STUTTGART, GERMANY.
- Kutrzeba, L., Dayan, F. E., Giner, J., Zjawiony, J. (2006). C-13-and H-2-labeled deoxyxylulose as a tool in study of kinetics and mechanism of salvinorin A biosynthesis. *PLANTA MEDICA* (vol. 74, pp. 331-332). GEORG THIEME VERLAG KG RUDIGERSTR 14, D-70469 STUTTGART, GERMANY.
- Dayan, F. E., Weete, J. (1995). Mechanism of tolerance to a novel phenyl triazolinone herbicide. *Plant Physiology* (vol. 111, pp. 498-498). AMER SOC PLANT PHYSIOLOGISTS 15501 MONONA DRIVE, ROCKVILLE, MD 20855.

Book

- Dayan, F. E. (1995). *Physiological and biochemical basis for tolerance to sulfentrazone by soybean and selected weed species*. Dissertation.

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS

2016, "Resistance to Glufosinate is Proportional to Phosphinothricin Acetyltransferase Expression and Activity in LibertyLink® and WideStrike® Cotton", 7th International Weed Science Congress, (Presenter) Dayan, F. E., peer-reviewed/refereed.

November 14, 2016, "Rationale for a Natural Products Approach to Herbicide Discovery", Bayer CropScience USA.

- June 2016, "A Natural Route to the Next Generation of Herbicides", Bayer CropScience Germany, (Presenter) Dayan, F. E.
- April 2016, "A Natural Route to the Next Generation of Herbicides", Monsanto, (Presenter) Dayan, F. E.
- April 2016, "A functional genomic approach to elucidating sorgoleone biosynthesis", University of Nebraska, (Presenter) Dayan, F. E.
- March 2016, "Sorgoleone and Its Role in Sorghum Allelopathy", University of Massachusett, (Presenter) Dayan, F. E.
- February 2016, "Resistance to Glufosinate is Proportional to Phosphinothricin Acetyltransferase Expression and Activity in LibertyLink® and WideStrike® Cotton", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2015, "Low dose effects of glyphosate on plant reproduction in *Arabidopsis thaliana*: A biological and transcriptomics approach", American Chemical Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2015, " β -Triketones from *Leptospermum scoparium* as natural herbicides inhibiting p-hydroxyphenylpyruvate dioxygenase", American Chemical Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2015, "A Natural Route to the Next Generation of Herbicides", Canadian Weed Science Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2015, "Sarmentine, a natural Piper amide herbicide with multiple mechanisms of action", Phytochemical Society of North America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2015, "A Natural Route to the Next Generation of Herbicides", XV Brazilian Congress of Plant Physiology, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2015, "Sarmentine, a natural herbicide from long pepper (*Piper longum*) fruit with multiple mechanisms of action", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2014, "Novel Bioassay for the Discovery of Inhibitors of the 2-C-Methyl-d-erythritol 4-Phosphate (MEP) and Terpenoid Pathways Leading to Carotenoid Biosynthesis", Mississippi State University, (Presenter) Dayan, F. E.
- 2014, "Rationale for a natural products approach to herbicide discovery", University of Guelph, (Presenter) Dayan, F. E.
- February 2014, "Manuka Oil, a Natural HPPD Inhibitor", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2013, "Manuka Oil as a Potential Natural Herbicide", California Weed Science Society annual meeting, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2013, "Resistance to inhibitors of protoporphyrinogen oxidase and phytoene desaturase", Global Herbicide Resistance Congress, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2013, "Leaf Disc Assay to Measure Early Steps of the MEP Pathway", Weed Science Society of America, (Presenter) Corniani, N., peer-reviewed/refereed.
- 2012, "Manuka Oil, a Natural Herbicide with Preemergence Activity", 6th International Weed Science Congress,

- International Weed Science Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2012, "Natural triketones for weed management", 7th International Integrated Pest Management Symposium, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2012, "Natural Products as Sources for New Pesticides – 1997-2010", American Chemical Society, (Presenter) Cantrell, C. L., peer-reviewed/refereed.
- 2012, "Manuka Oil, a Natural Herbicide with Preemergence Activity", Natural Products and Biocontrol, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2012, "Allelopathy and natural herbicides development", XXVII Congress of Brazilian Weed Science Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2012, "Plant Cell Membrane as a Marker for Light-dependent and Light-independent Herbicide", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2011, "Approaches to the use of natural products for herbicide discovery", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2010, "Natural products in weed management, a review", American Chemical Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2010, "Natural products in weed management, a review", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- August 2009, "Dynamic root exudation of sorgoleone and its in planta mechanism of action", Phytochemical Society of North America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2009, "In Planta Mechanism of Action of the Allelochemical Sorgoleone", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2008, "In Planta Mechanism of Action of the Allelochemical Sorgoleone", 5th World Congress on Allelopathy, peer-reviewed/refereed.
- 2008, "Cyperin, a pathogenic fungi diphenyl ether phytotoxin, targets plant enoyl (acyl carrier protein)", American Chemical Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2008, "p-Hydroxyphenylpyruvate dioxygenase, a herbicide target site for natural β -triketones", Endure International Conference, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2008, "Inhibition of Plant Enoyl (Acyl Carrier Protein) Reductase by the Natural Diphenyl Ether Cyperin", International Weed Science Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2008, "cDNA library of *Salvia divinorum* glands as a molecular tool for studying biosynthetic pathway of salvinorin A", Phytochemical Society of North America, (Presenter) Kutrzeba, L., peer-reviewed/refereed.
- February 2008, "Inhibition of Plant Enoyl (Acyl Carrier Protein) Reductase by the Natural Diphenyl Ether Cyperin", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2007, "Trichomes and root hairs function as natural pesticide factories", 3rd Chinese Allelopathy Conference, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2007, "Manipulating the lipid resorcinol pathway to enhance plant allelopathy", American Chemical Society,

- (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2007, "Biosynthesis of lipid resorcinols and benzoquinone in isolated secretory root hairs of sorghum bicolor", Phytochemical Society of North America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2007, "Independent somatic mutations in invasive plant Hydrilla lead to resistance to phytoene", Resistance 2007, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2007, "Biosynthesis of the allelochemical sorgoleone in isolated secretory root hairs of S. bicolor.", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2006, "Evolution of Resistance to Phytoene Desaturase-Inhibiting Herbicides", American Chemical Society, peer-reviewed/refereed.
- 2006, "Herbicidal Activity of Manuka Oil is Associated with Inhibition of HPPD", Phytochemical Society of North America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2006, "Herbicidal Activity of Manuka Oil is Associated with Inhibition of p-Hydroxyphenylpyruvate Dioxygenase by Its Triketone Components", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2005, "Manipulating the lipid resorcinol pathway to enhance allelopathy in rice", 4th World Congress on Allelopathy, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2005, "Somatic mutation-mediated evolution of herbicide resistance in the non-indigenous invasive plant hydrilla (Hydrilla verticillata)", British Crop Protection Conference, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2005, "Characterization of the biosynthesis of 5-alkyl resorcinols in rice", Phytochemical Society of North America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2005, "Evolution of herbicide-resistant phytoene desaturase genes and their potential use in biotechnology", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2004, "Phytoene desaturase inhibitor-resistant crops", American Chemical Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2004, "Understanding the sorgoleone biosynthetic pathway", European Allelopathy Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2004, "Biosynthesis of sorgoleone", International Weed Science Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2004, "Structure and inhibitory activity of lipid resorcinols and benzoquinones from the root exudate of Sorghum bicolor", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2003, "New Herbicide Target Sites from Natural Compounds", 3rd Pan Pacific Congress, (Presenter) Duke, S. O., peer-reviewed/refereed.
- 2003, "Studies on the Biosynthesis of the Novel k-Opioid Agonist, Salvinorin A", American Society of Pharmacognosy, (Presenter) Stewart, J., peer-reviewed/refereed.
- 2003, "Biosynthesis of Sorgoleone: Complementary Retrobiosynthetic NMR and Root Hair Specific EST Analyses", American Society of Plant Biology, (Presenter) Dayan, F. E., peer-reviewed/refereed.

- February 2003, "Elucidation of the Biosynthetic Pathway of Sorgoleone Using Retrobiosynthetic NMR Analysis", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2002, "Natural products for pest management", American Chemical Society, (Presenter) Duke, S. O., peer-reviewed/refereed.
- 2002, "Structure-activity relationship of natural products on plant p-hydroxyphenylpyruvate dioxygenase", IUPAC, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- February 2002, "The mechanism of action of the fungal phytotoxin 2,5-anhydro-D-glucitol requires bioactivation by glycolytic enzymes", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2001, "Strategies for improvement of crop allelopathy with transgenes", 2nd Asian Pacific Conference on Chemical Ecology, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2001, "Biosynthesis of sorgoleone", European Allelopathy Society, (Presenter) Dayan, F. E.
- 2001, "Classification and mode of action of herbicides", European Weed Research Society, (Presenter) Duke, S. O., peer-reviewed/refereed.
- February 2001, "The natural product usnic acid is a potent inhibitor of plant p-hydroxyphenylpyruvate dioxygenase", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2000, "Genetically Engineering Crops for Improved Weed Management", American Chemical Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2000, "Inhibition of asparagine synthetase, the key to the mode of action of cinmethylin", International Weed Science Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 2000, "Elucidation of the mode of action of cinmethylin", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 1999, "Determination of the mode of action of allelochemicals", 2nd World Congress on Allelopathy, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 1999, "Biological Activity of Amino- and Urea-substituted Thiazoles", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 1998, "Prediction the activity of natural and synthetic protoporphyrinogen oxidase-inhibiting phytotoxins", American Chemical Society, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 1998, "Mode of action of 2,5-anhydro-D-glucitol", IUPAC, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 1998, "Inhibitory Activity of Sulfentrazone and Its Metabolic Derivatives on Soybean (Glycine max) Protoporphyrinogen Oxidase", Weed Science Society of America, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 1997, "Horseradish peroxidase-catalyzed formation of chlorins", American Society of Plant Biology, (Presenter) Dayan, F. E.
- February 1997, "Overview of Protoporphyrinogen Oxidase Inhibitors", British Crop Protection Conference, (Presenter) Dayan, F. E., peer-reviewed/refereed.
- 1996, "Mechanism of tolerance to a novel phenyl triazolinone herbicide", American Society of Plant Biology,

(Presenter) Dayan, F. E.

OTHER ACTIVITIES/ACCOMPLISHMENTS – PUBLICATIONS/SCHOLARLY RECORD

Baerson, S. R., Pan, Z., Rimando, A. M., Dayan, F. E., Cook, D. "Alkylresorcinol synthase genes of sorghum associated with allelochemical biosynthesis and their use in control of allelopathy." (Approved: September 15, 2011).

Baerson, S. R., Rimando, A. M., Dayan, F. E., Pan, Z., Polashock, J. J. "Methods for cloning Sorghum root hair-specific OMT3 gene encoding O-methyltransferase and its use in pterostilbene and sorgoleone biosynthesis in transgenic plants." (Approved: June 10, 2008).

Michel, A., Scheffler, B. E., Netherland, M. D., Dayan, F. E., Arias, R. "Sequences of modified plant phytoene desaturase for generating herbicide-resistant plants." (Application: July 17, 2003).

Canel, C., Dayan, F. E., Moraes, R. M., Burandt, C. L. "Enhanced yield of podophyllotoxin from natural products through in situ conversion methods/A method of recovering podophyllotoxin from Podophyllum peltatum and Podophyllum emodii." (Approved: November 7, 2000).

TEACHING:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u>Cr. Hrs.</u>	<u>Enrollment</u>
2016	Fall	BSPM698 - Research	18	11

Guest Lectures:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u># of Guest Lectures</u>	<u>Delivery Mode</u>
2016	Fall	BSPM500 - Foundations of Bioagricultural Sciences	1	
2016	Fall	BSPM509 - Herbicide Selectivity and Action	4	Face to Face
2016	Spring	BSPM550 - Molecular Plant-Microbe Interactions	1	Face to Face

EXTENSION/ENGAGEMENT ACTIVITIES/ACCOMPLISHMENTS

Presentation

New CSU analytical capabilities for sugar beet growers. Adult, Loveland, CO. Number of times program was made: 1. Total number of participants: 100. Percent Responsible: 5%. 1st Quarter 2016.

New CSU analytical capabilities for colorado wheat growers. Adult, Stratton, CO. Number of times program was made: 1. Total number of participants: 25. Percent Responsible: 25%. 4th Quarter 2015.

Workshop

Resistant Weed Workshop. Adult, Limon, CO. Number of times program was made: 1. Total number of participants: 50. Percent Responsible: 100%. 2nd Quarter 2016.

Mode of action of herbicides. Adult, Knoxville, TN. Number of times program was made: 3. Total number of participants: 75. Percent Responsible: 25%. 2nd Quarter 2015.

COMMITTEES

Education Committee, (August 15, 2016 - May 15, 2017).

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Phytochemical Society of North America. (January 2006 - Present).

International Weed Science Society. (January 1999 - Present).

Weed Science Society of America. (February 1995 - Present).

Editor, Associate Editor, Pesticide Biochemistry and Physiology. (January 2011 - Present).

Editor, Associate Editor, Weed Science Journal. (January 2003 - Present).

Program Organizer, International Weed Science Society. (June 2016).

Officer, Treasurer, International Weed Science Society. (June 2012 - June 2016).

Program Organizer, Phytochemical Society of North America. (August 2015).

Officer, President/Elect/Past, Phytochemical Society of North America. (August 2014 - August 2015).

Editor, Associate Editor, Allelopathy Journal. (January 2010 - December 2014).

Program Organizer, Weed Science Society of America. (February 2014).

Officer, Treasurer, Phytochemical Society of North America. (August 2006 - August 2012).

Program Organizer, International Weed Science Society. (June 2012).

Program Organizer, Weed Science Society of America. (February 2011).

Session Chair, Weed Science Society of America. (February 2011).

Program Organizer, Weed Science Society of America. (February 2010).

Program Organizer, Weed Science Society of America. (February 2009).

Program Organizer, Phytochemical Society of North America. (August 2006).

Session Chair, Weed Science Society of America. (February 2006).

Session Chair, Weed Science Society of America. (February 2000).
