

Vitae

Thomas L. Housley, Professor, Agronomy Department, Purdue University, West Lafayette, IN 47907. (317) 494-4792, email: thousley@purdue.edu

Academic Record:

B.S.	1964	Taylor University, Upland, Indiana	1960-64
M.S.	1969	University of Connecticut	1964-68
Ph.D.	1974	University of Georgia	1968-74

Research Interest:

The study of translocation and carbon partitioning in plants is an important area of plant research. The biochemical nature of the partitioning processes is extremely important to our understanding of the living plant system. Dr. Housley, has made important basic contributions to our knowledge of translocation, and has taken steps toward applying this basic knowledge to the solution of critical problems, including the role of fructans in the partitioning of carbohydrates in wheat. He has continued this excellence in research by applying his basic knowledge of whole plant processes to the critical 3rd world problem of *Striga* parasitism of sorghum a crop critical to the survival of subsistence farmers in Sub-Saharan Africa.

Professional Experience:

1974-1975 Postdoctoral Fellow, Agronomy, University of Wisconsin
1976- 1982 Assistant Professor, Crop Physiology, Agronomy, Purdue University
1983-1991 Associate Professor, Crop Physiology, Agronomy, Purdue University
1992-present Professor, Crop Physiology, Agronomy, Purdue University

Recent Professional Associations and Honors:

David C Pfendler Agriculture Outstanding Counselor Award, 1997
Selected Chair SS-ASA Student Manuscript Committee, 1998
Selected as a member of Gamma Sigma Delta Honor Society
Selected Chair ASA-AC424, Crops Judging Committee 1999
Awarded Outstanding, Scientist Educator and Mentor, 2001, Future Black Scientist of America
Treasurer Gamma Sigma Delta Honor Society 2001-2003
Vice President Coaches Committee Collegiate Crops Judging Contest 2003
Chosen for Agronomy Service to Students Award
President Coaches Committee Collegiate Crops Judging Contest 2004.
SS-ASA Poster Judging Committee, 2005
President Elect Gamma Sigma Delta 2004-2005

High School:

Dr. Housley provides expertise in the FFA and 4-H High School Crops Contest. He prepares the Agronomy Test and the Identification Test for the District, Area and State contests. In addition he prepares the Agronomy Test and Identification Tests for the Purdue and a few High School Invitational Contests.

Undergraduate:

Dr. Housley over the last 15 years has been continually increasing his teaching responsibility as faculty have been retiring and changes in research direction in the Department have required him to redirect his efforts towards supporting undergraduate education. Dr. Housley advises 15-25 Agronomy undergraduate students per year. He has been advisor of the Agronomy Club since 1992.

Courses Taught In 2000-2007

Agronomy 105 Introduction to Crop Production
Agronomy 204 Crop and Weed Identification
Agronomy 285 World Crop Adaptation and Distribution
Agronomy 305 Seed Analysis and Grain Grading
Agronomy 398 Sophomore Seminar

Graduate Level Courses

Agronomy 625 Advanced Crop Physiology
Biology 610 Long Distance Transport in Plants

International Experience

1983-10 days Sudan, collect root samples of Striga-sorghum root interaction with Dr. Gebisa Ejeta
1984-7 months Wales UK , Sabbatical, research on fructan at the Welsh Plant Breeding Station with Dr. Chris Pollock.
1984-6 weeks Toured Europe, after sabbatical
1987-3 weeks Niger supervised graduate research Charif-Ari
1988-2 weeks Niger collected special sorghum germplasm, Dr. Gebisa Ejeta
1996-4 weeks Zimbabwe consultant to Africa University, Mutare, Zimbabwe
1998-1 week Egypt to explore collaborative research opportunities in the parasitic weed Orobanche

Abstracts Since 2000

Housley, T. L. 2001 Engaging Students in World Agricultural Diversity. ASA Abstracts
Mohamed, A. H., P.J. Rich, T. L. Housley and G. Ejeta, and. 2001. *In vitro* techniques for studying mechanisms of *Striga* resistance in sorghum. *In:* A.F.P. Thalouarn, D. M. Joel, L.J. Musselman, C. Parker and J.A.C. Verkleij, (eds) Proceedings of the 7th International Parasitic Weeds Conference. Nantes France pp 96-100

- Mohamed, A. H. G. Ejeta, and T. L. Housley. 2001. Control of *Striga* seed germination. *In: A.F.P. Thalouarn, D. M. Joel, L.J. Musselman, C. Parker and J.A.C. Verkleij, (eds) Proceedings of the 7th International Parasitic Weeds Conference. Nantes France p 125.*
- Ejeta, G., A. Babiker, K. Belete, P. Bramel, A. Ellicott, C. Grenier, T.L. Housley, I. Kapran, A. Mohamed, P. Rich, C. Shaner and A. Toure. 2001. Breeding for durable resistance to *Striga* in sorghum. *In: A.F.P. Thalouarn, D. M. Joel, L.J. Musselman, C. Parker and J.A.C. Verkleij, (eds) Proceedings of the 7th International Parasitic Weeds Conference. Nantes France pp 166-169*
- Mohamed, A. H., P. J. Rich, T. L. Housley and G. Ejeta. 2000 Mechanisms of *Striga* resistance in sorghum. *ASA Abstracts*

Book Chapters:

- Housley, T. L. 2000. The role of fructan redistribution from vegetative tissues in grain filling of wheat and barley. *In: A. K. Gupta and N. Kaur, (eds). Carbohydrate Reserves in Plants, Synthesis and Regulation. Elsevier, New York. Pp 207-221.*
- Pollock, C. J., A. J. Cairns, I. M. Sims and T. L. Housley. 1996. Fructans as reserve carbohydrates in crop plants. *In: E. Zamski and A. A. Shaffer (eds). Photoassimilate Distribution in Plants and Crops: Source-sink Relations. Marcel Dekker Inc. New York pp 97-113.*
- Housley, T.L. and C.J. Pollock. 1993. The Metabolism and Fructan Polymers in Plants. *In: Science and Technology of Fructans. (Eds) M. Suzuki and C.J. Chatterton. CRC Press, Florida, pp. 191-225.*

Publications:

- Mohamed, A. A. Ellicott, T.L. Housley, G. Ejeta. 2003. Hypersensitive response to *Striga* parasitism in Sorghum. *Crop Science 43:1320-1324*
- Mohamed, A. H. G. Ejeta, and T. L. Housley. 2001. *Striga asiatica* seed conditioning and 1-aminocyclopropane-1-carboxylate oxidase activity. *Weed Res. 41:165-176.*
- Mohamed, A. H., G. Ejeta, L. G. Butler and T. L. Housley. 1998. Moisture content and dormancy in *Striga asiatica* seeds. *Weed Res. 38:257-265.*
- Jeong, B. R. and T. L. Housley. 1996. Purification and properties of wheat fructan exohydrolase. *Korean J. Crop Sci. 41:456-464.*
- Pollock, C.J., A.J. Cairns, A.L. Winters and T.L. Housley. 1994. Sucrose and the synthesis of fructans in leaves. *Pestic. Sci. 41:229-335.*
- Jimenez-Ramsey, L.M., J.C. Rogler, T.L. Housley, L.G. Butler and R.G. Elkin. 1994. Absorption and distribution of ¹⁴C-labeled condensed tannins and related sorghum phenolics in chickens. *J. Food Chem. 42:963-967.*
- Pollock, C.J. and T.L. Housley. 1993. The extraction and assay of 1-kestose:sucrose fructosyl transferase from leaves of wheat. *Plant Physiol. 102:537-539.*
- Jeong, B.R. and T.L. Housley. 1992. Purification and characterization of wheat β -(2 \rightarrow 1) fructan:fructan fructosyl transferase activity. *Plant Physiol. 100:199-204.*
- Housley, T.L. and H.W. Ohm. 1992. Earliness and duration of grain fill in winter wheat. *Can. J. Plant Sci. 72:35-48.*

- Housley, T.L., D.M. Gibeaut, N.C. Carpita, I. Sims and C.J. Pollock. 1991. Fructosyl transfer from sucrose and oligosaccharides during fructan synthesis in excised leaves of *Lolium Carpita*, N.C., T.L. Housley and J.E. Hendrix. 1991. New features of plant-fructan structure revealed by methylation analysis and carbon-13 n.m.r. spectroscopy. *Carbohydrate Res.* 217:127-136.
- Carpita, N.C., F. Keller, D.M. Gibeaut, T.L. Housley and P. Matile. 1991. Synthesis of inulin oligomers in tissue slices, protoplasts and intact vacuoles of Jerusalem artichoke. *J. Plant Physiol.* 138:204-210.
- Kanabus, J.D., M. Gibeaut, N.C. Carpita and T.L. Housley. 1991. Fructosyl transfer between 1-kestose and sucrose in wheat leaves. *Plant Physiol.* 96:251-254.
- Fereres, A., J.E. Araya, T.L. Housley and J.E. Foster. 1990. Carbohydrate composition of wheat infected with barley yellow dwarf virus. *Zeitschrift fur Pflanzenkrankheiten und Pflanzenschutz* 97:1-8.
- Jeong, B.R. and T.L. Housley. 1990. Fructan metabolism in wheat in alternating warm and cold temperatures. *Plant Physiol.* 93:903-906.
- Cherifari O., T. L. Housley and G. Ejeta. 1990 Sorghum root density and the potential for avoiding *Striga* parasitism. *Plant and Soil* 121:67-72.
- Carpita, N. C., J. Kanabus, and T. L. Housley. 1989. Linkage structure of fructans and fructan oligomers from *Triticum aestivum* and *Festuca arundinacea*. *J. Plant Physiol.* 134:162-168.
- Housley, T. L., J. Kanabus, and N. C. Carpita. 1989. Fructan synthesis in wheat leaf blades. *J. Plant Physiol.* 134:192-195.
- Housley, T.L. and J.J. Volenec. 1988. Fructan content and synthesis in leaf tissue of *Festuca arundinacea*. *Plant Physiol.* 86:1247-1251.
- Housley, T.L. and C.S.T. Daughtry. 1987. Fructan content and fructosyltransferase activity during wheat seed growth. *Plant Physiol.* 83:4-7.
- Werner, B. K., J. R. Wilcox and T. L. Housley. 1987. Inheritance of an ethyl methanesulfonate-induced dwarf in soybean and analysis of leaf cell-size. *Crop Science* 27:665-668.
- Mullins, G. L., L. E. Sommers and T. L. Housley. 1986 Metal speciation in xylem and phloem exudates. *Plant and Soil* 96:377-391.
- Dale, E.M. and T.L. Housley. 1986. Sucrose synthase activity in developing wheat endosperms differing in maximum weight. *Plant Physiol.* 82:7-10.
- Pollock, C.J. and T.L. Housley. 1985. Light-induced increase in sucrose phosphate synthetase activity in leaves of *Lolium temulentum*. *Ann Bot* 55:593-596.
- Housley, T.L. and C.J. Pollock. 1985. Photosynthesis and carbohydrate metabolism in detached leaves of *Lolium temulentum* L. *New Phytol.* 99:499-507.
- Housley, T. L., A. W. Kirleis, H. W. Ohm and F. L. Patterson. 1982. Dry matter accumulation in soft red winter wheat. *Crop Sci.* 22:290-294.
- Kirleis, A. W., T. L. Housley, A. M. Eman, F. L. Patterson and M. R. Okos. 1982. Effect of pre-ripe harvest and artificial drying on the milling and baking quality of soft red winter-wheat. *Crop Sci.* 22:871-876.

- Walburg, G., M. E. Bauer, C. S. T. Daughtry and T. L. Housley. 1982 Effects of nitrogen nutrition on the growth, yield, and reflectance characteristics of corn canopies. *Agron. J.* 74:677-683.
- Kollenkark, J. C., C. S. T. Daughtry, M. E. Bauer and T. L. Housley. 1982 Effects of cultural-practices on agronomic and reflectance characteristics of soybean canopies. *Agron. J.* 74:751-758.
- Housley, T. L., D. M. Peterson. 1982. Oat stem vascular size in relation to kernel number and weight 1. Controlled environment. *Crop Sci.* 22:259-263.
- Peterson, D. M., T. L. Housley and T. M. Luk. 1982. Oat stem vascular size in relation to kernel number and weight 2. Field environment. *Crop Sci.* 22:274-278.
- Housley, T. L., A. W. Kirleis, H. W. Ohm, and F. L. Patterson. 1982. Dry-matter accumulation in soft red winter-wheat seeds. *Crop Sci.* 22 290-294.
- Dale, R. F., K. L. Scheeringa, H. F. Hodges and T. L. Housley. 1982 Effect of leaf-area, incident radiation and moisture stress on reflectance of near-infrared radiation from a corn canopy. *Agron. J.* 74:67-73.
- Housley, T. L., A. M. Kirleis, H. W. Ohm, F. L. Patterson. 1981 An evaluation of seed growth in soft red winter-wheat. *Can. J. Plant Sci.* 61:525-534.
- Pitombeira, J. B., T. L. Housley, A. J. Ohlrogge and P. A. Counce. 1981 The effect of DNBP on the accumulation of C-14-sucrose and the transport of c14-assmilates in corn. *Crop Sci.* 21:135-139.
- Housley, T. L., L. E. Schrader, M. Miller and T. L. Setter. 1979. Partitioning of 14C-photosynthate, and long distance translocation of amino acids in preflowering and flowering, nodulated and non-nodulated soybeans. *Plant Physiol.* 64:94-98.
- Fisher, D. B., T. L. Housley, A. L. Christy. 1978 Source pool kinetics for photosynthate-C14 translocation in morning glory and soybean. *Plant Physiol.* 61:291-295.
- Housley, T. L. and D. B. Fisher. 1977. Estimation of osmotic gradients in soybean sieve tubes by quantitative autoradiography Qualified support for Munch Hypothesis. *Plant Physiol.* 59:701-706.
- Housley, T. M. D. M. Peterson and L. E. Schrader. 1977 Long-distance translocation of sucrose, serine, leucine, lysine and CO₂ assimilates 1. Soybean. *Plant Physiol.* 59:217-220.
- Peterson, D. M., T. L. Housley and L. E. Schrader. 1977. Long-distance translocation of sucrose, serine, leucine, lysine and CO₂ assimilates 2. Oats. *Plant Physiol.* 59:221-224.
- Housley, T. L. and D. B. Fisher. 1975. Efficiency of C14 detection in autoradiographs of semithin plastic sections. *J. Hist & Cytochem.* 23:678-680.
- Fisher, D. B., and T. L. Housley. 1972. Retention of water-soluble compounds during freeze-substitution and microradiography. *Plant Physiol.* 49:166-