REFERENCES

Altieri, M. A. and Nicholls, C. I. 1999. Biodiversity, ecosystem function, and insect pest management in agricultural systems. In: *Biodiversity in Agroecosystems.* pp. 69-84. Collins, W. W. and C. O. Qualset, Eds., CRC Press, Boca Raton, FL, USA.

Anamthawat-Jonsson, K. 1996. Wide-hybrids between wheat and lymegrass: breeding and agricultural potential. *Buvusindi* 10: 101-113

Anamthawat-Jonsson, K. 1999. Variable genome composition in *Triticum* X *Leymus* amphiploids. *Theor. Appl. Genet.* 99:1087-1093.

Anamthawat-Jonsson, K. and Bodvarsdottir, S. K. 1998. Meiosis of wheat X lymegrass hybrids. *Chromosome Research* 6: 339-343.

Anamthawat-Jonsson, K., Bodvarsdottir, S. K., Bragason, B. T., Gudmundsson, J., and Koebner, R. M. D. 1997. Wide hybridization between wheat (*Triticum* L.) and Lymegrass (*Leymus* Hochst.). *Euphytica* 93: 293-300.

Anamthawat-Jonsson, K., Bragason, B. T., Bodvarsdottir, S. K., and Koebner, R. M. D. 1999. Molecular variation in *Leymus* species and populations. *Molecular Ecology* 8:309-315.

Anaya, A. L. 1999. Allelopathy as a tool in the management of biotic resources in agroecosystems. *Critical Rev. Plant Sci.* 18: 697-739.

Anderson, E. 1949. *Introgressive Hybridization.* John Wiley and Sons, New York.

Atlagic, J., Dozet, B., and Skoric, D. 1995. Meiosis and pollen grain viability in *Helianthus mollis, Helianthus salicifolius, Helianthus maximiliani,* and their F_1 hybrids with cultivated sunflower. *Euphytica* 81: 259-263.

Banks, P. M., Li, S. J., Wang, R. R.-C., and Larkin, P. J. 1993. Varying chromosome composition of 56-chromosome wheat X *Thinopyrum intermedium* partial amphiploids. *Genome* 36: 207-215.

Bargman, T. J., Hanners, G. D., Becker, R., Saunders, R. M., and Rupnow, J. H. 1989. Compositional and nutritional evaluation of eastern gamagrass (*Tripsacum dactyloides* (L.) L.), a perennial relative of maize (*Zea mays* L.). *Lebensm. Wiss. u. Technol.* 22:208-212.

Beadle, G. W. 1980. The ancestry of corn. *Scientific American* 242: 112-119.

Becker, R., Wagoner, P., Hanners, G. D., and Saunders, R. M. 1991. Compositional, nutritional, and functional evaluation of intermediate wheatgrass (*Thinopyrum intermedium*). *J. Food Proc. Pres.* 15: 63-77.

Bennett, J., Ladha, J. K., Schmit, V., and Sheehy, J. 1998. New frontier projects: beyond the pipeline. In *Sustainability of Rice in the Global Food System.* pp. 225-243. Dowling, N. G., Greenfield, S. M., and Fischer, K. S., Eds., Pacific Basin Study Center and International Rice Research Institute, Los Banos, Philippines.

Blum, A. 1985. Photosynthesis and transpiration in leaves and ears of wheat and barley varieties. *J. Exptl. Bot.* 36: 432-440.

Bremer, G. and Bremer-Reinders, D. E. 1954. Breeding of tetraploid rye in the Netherlands. I. Methods and cytological investigations. *Euphytica* 3:49-63.

Bockus, W. W. and Shroyer, J. P. 1998. The impact of reduced tillage on soilborne plant pathogens. *Ann. Rev. Phytopathol.* 36: 485-500.

Bodanese-Zanettini, M.H., M.S. Lauxen, S.N.C. Richter, S. Cavalli-Molina, C.E. Lange, P.J. Wang, and C.Y. Hu. 1996. Wide hybridization between Brazilian soybean cultivars and wild perennial relatives. *Theor. Appl. Genet.* 93:703-709.

Bodrov, M. S. 1960. Hybridization between wheat and *Elymus.* In: *Wide Hybridization in Plants.* pp.238-241. Tsitsin, N. V., Ed., Israel Program for Scientific Translations, Jerusalem.

Brim, C. A. and Burton, J. W. 1978. Recurrent selection in soybeans. II Selection for increased percent protein in seeds. *Crop Sci.* 78: 35-38.

Browning, J. A. 1974. Relevance of knowledge about natural ecosystems to development of pest management programs for agroecosystems. *Proc. Am. Phytopath. Soc.* 1: 191-199.

Burton, J. W. and Brim, C. A. 1981. Recurrent selection in soybeans. III Selection for increased percent oil in seeds. *Crop Sci.* 81: 31-34.

Cai, H. W., and Morishima, H. 2000. Genomic regions affecting seed shattering and seed dormancy in rice. *Theor. Appl. Genet.* 100: 840-846.

Cai, X., Jones, S. S., and Murray, T. D. 1998. Molecular cytogenetic characterization of *Thinopyrum* and wheat-*Thinopyrum* translocations in a wheat-*Thinopyrum* amphiploid. *Chromosome Research* 6: 183-189.

Cai, X., Jones, S. S., and Murray, T. D. 2001. Molecular cytogenetic characterization of *Thinopyrum* genomes conferring perennial growth habit in wheat-*Thinopyrum* amphiploids. *Plant Breeding* 120: 21-26.

Casady, A. J. and Anderson, K. L. 1952. Hybridization, cytological, and inheritance studies of a sorghum cross autotetraploid sudangrass X (johnsongrass X 4n sudangrass. *Agron. J.* 43:189-194

Cauderon, Y. 1979. Use of *Agropyron* species for wheat improvement. In: *Proceedings of a Conference on Broadening the Genetic Base of Crops*. pp. 175-186. Zeven, A. C. and van Harten, A. M., Eds., Pudoc, Wageningen, Netherlands.

Chandler, J. M. and Beard, B. H. 1983. Embryo culture of *Helianthus* hybrids. *Crop Sci.* 23: 1004-1007.

Comeau, A., Fedak, G., St.-Pierre, C.-A., and Theriault, C. 1985. Intergeneric hybrids between *Triticum aestivum* and species of *Agropyron* and *Elymus. Cereal Res. Commun.* 13: 149-153.

Cox, T. S. 1998. Deepening the wheat gene pool. *J. Crop Prod.* 1: 1-25.

Cox, T. S. and Hatchett, J. H. 1986. Genetic model for wheat/hessian fly (Diptera:Cecidomyiidae) interaction: Strategies for deployment of resistance genes in wheat cultivars. *Environ. Entomol.* 15:24-31.

Cox, T. S. , Shogren, M. D., Sears, R. G., Martin, T. J., and Bolte, L. C. 1989. Genetic improvement in milling and baking quality of hard red winter wheat cultivars, 1919 to 1988. *Crop Sci.* 29:626-631.

Cox, T. S. and Wood, D. 1999. The nature and role of crop biodiversity. In: *Agrobiodiversity: Characterization, Utilization, and Management.* pp. 35-57. Wood, D. and Lenne, J. M., Eds., CABI Publishing, Wallingford, Oxon, UK.

Crosson, P. 1981. *Conservation Tillage and Conventional Tillage: A Comparative Assessment.* Soil Conservation Society of America, Ankeny, Iowa, USA.

Derzhavin, A. I. 1960a. The theory and practice of producing perennial rye varieties. In: *Wide Hybridization in Plants.* pp. 143-152. Tsitsin, N. V., Ed., Israel Program for Scientific Translations, Jerusalem.

Derzhavin, A. I. 1960b. Hybridization between wheat, perennial rye, and *Agropyron.* In: *Wide Hybridization in Plants.* pp. 153-156. Tsitsin, N. V., Ed., Israel Program for Scientific Translations, Jerusalem.

Devos, K. M., Atkinson, M. D., Chinoy, C. N., Francis, H. A., Harcourt, R. L., Koebner, R. M. D., Liu, C. J., Masojc, P., Xie, D. X., and Gale, M. D. 1993. Chromosomal rearrangements in the rye genome relative to that of wheat. *Theor. Appl. Genet.* 85: 673-680.

Dewald, C. L. and Dayton, R. S. 1985. Registration of gynomonoecious germplasm (GSF-I and GSF-II) of eastern gamagrass. *Crop Sci.* 25: 715.

Dewald, C. L. and B. Kindiger, 1998. Cytological and molecular evaluation of *Tripsacum andersonii* and a female fertile derivative (Poaceae). *Am. J. Bot.* 8:1237-1242.

deWet, J. M. J., Fletcher, G. B., Hilu, K. W., and Harlan, J. R. 1983. Origin of *Tripsacum andersonii* (Gramineae). *Am. J. Bot.* 70: 706-711.

deWet, J. M. J., J. R. Harlan, L. M. Engle, and C. A. Grant. 1973. Breeding behavior of maize-*Tripsacum* hybrids. *Crop Sci.* 13:254-256.

Dewey, D. R. 1984. The genomic system of classification as a guide to intergeneric hybridization with the perennial Triticeae. In: *Gene Manipulation in Plant Improvement.* pp. 209-279. Gustafson, P. J., Ed., Plenum Press, New York.

Dierks, W. and Reimann-Philipp, R. 1966. Die Zuchtung eines perennierenden Roggens als Moglichkeit zur Verbesserung der Roggenzuchmethodik und zer Schaffung eines mehrfach nutzbaren Grunfutter- und Kornerroggens. *Z. Pflanzenzuchtg.* 56:343-368.

Doebley, J. and Stec, A. 1993. Inheritance of the morphological differences between maize and teosinte: comparison of results for two F_2 populations. *Genetics* 134: 559-570.

Dujardin, M. and Hanna, W. W. 1990. Cytogenetics and reproductive behavior of 48-chromosome pearl millet X *Pennisetum squamulatum* derivatives. *Crop Sci.* 30: 1015-1016.

Dvorak, J. 1976. The cytogenetic structure of a 56-chromosome derivative from a cross between *Triticum aestivum* and *Agropyron elongatum* (2n=70). *Can. J. Genet. Cytol.* 18:271-279.

Espinasse, A., Volin, J., Dybing, C.D., and Lay, C. 1991. Embryo rescue through in ovulo culture in *Helianthus. Crop Sci.* 31: 102-108.

Espinasse, A., Foueillassar, J., and Kimber, G. 1995. Cytogenetical analysis of hybrids between sunflower and four wild relatives. *Euphytica* 82: 65-72.

Eubanks, M. 1995. A cross between two maize relatives: *Tripsacum dactyloides* and *Zea diploperennis* (Poaceae). *Econ. Bot.* 49: 172-182.

Eubanks, M. 1997. Molecular analysis of crosses between *Tripsacum dactyloides* and *Zea diploperennis* (Poaceae). *Theor. Appl. Genet.* 94: 707-712.

Evans, L. T. 1978. The influence of irradiance before and after anthesis on grain yield and its components in microcrops of wheat grown in a constant daylength and temperature regime. *Field Crops Res.* 1: 5-19.

Evans, L. T. 1998. *Feeding the Ten Billion.* Cambridge Univ. Press, Cambridge, UK.

Farquharson, L. I. 1957. Hybridization of *Tripsacum* and *Zea. J. Hered.* 48: 295-299.

Fatih, A. M. B. 1983. Analysis of the breeding potential of wheat-*Agropyron* and wheat-*Elymus* derivatives. *Hereditas* 98: 287-295.

Fehr, W. R. 1987. *Principles of Cultivar Development, Volume 1: Theory and Technique.* Macmillan Publishing Co., New York.

Finke, R. L., Harper, J. E., and Hageman, R. H. 1982. Efficiency of nitrogen assimilation by N_2-fixing and nitrate-grown soybean plants (*Glycine max* [L.] Merr.). *Plant Physiol.* 70: 1178-1184.

Francis, C. A. 1990. Breeding hybrids and varieties for sustainable systems. In *Sustainable Agriculture in Temperate Zones.* pp. 24-54. Francis, C. A., Flora, C. B., and King, L. D., Eds., John Wiley and Sons, New York.

Freer, M., Donnelly, J. R., Axelson, A., Myers, L. F., Davidson, J. L., and Dymock, J. 1997. Comparison of secale with other perennial grasses under grazing at a cool site in the high rainfall zone of New South Wales. Australian *J. Exptl. Agric.* 37: 19-25.

Gadgil, M. and Solbrig, O. T. 1972. The concept of *r*- and *K*-selection: evidence from wild flowers and some theoretical considerations. *Am. Nat.* 106: 14-31.

Gardner, C. O. 1961. An evaluation of effects of mass selection and seed irradiation with thermal neutrons on yield of corn. *Crop Sci.* 1: 241-245.

Gardner, J. C. 1989. The biology of annual and perennial grasses in the plains. In: *Grass or Grain?: Intermediate Wheatgrass in a Perennial Cropping System for the Northern Plains.* pp. 4-7. Wagoner, P., Gardner, J. C., Schatz, B. G., Sobolik, F., and Watt, D., Eds. North Dakota Expt. Sta. Rsch. Rpt. No. 108, North Dakota State Univ. Press, Fargo, ND and Rodale Institute Research Center, Kutztown, PA.

Garrett, K. A. and Mundt, C. C. 2000. Host diversity can reduce potato late blight severity for focal and general patterns of primary inoculum. *Phytopathology* 90: 1307-1312.

Garrett, K. A. and Mundt, C. C. 1999. Epidemiology in mixed host populations. *Phytopathology* 89: 984-990.

Georgieva-Todorova, J. 1984. Interspecific hybridization in the genus *Helianthus* L. *Z. Pflanzenzuchtg.* 93: 265-279.

Gill, B. S., Morris, K. L. D., and Appels, R. 1988. Assignment of the genomic affinities of chromosomes from polyploid *Elymus* species added to wheat. *Genome* 30:70-82.

Gonzalez, B. and W. W. Hanna. 1984. Morphological and fertility responses in isogenic triploid and hexaploid pearl millet X napiergrass hybrids. *J. Hered.* 75: 317-318.

Gordon-Werner, E. and Dorffling, K. 1988. Morphological and physiological studies concerning the drought tolerance of the *Secale cereale* X *Secale montanum* cross Permontra. *Agron. and Crop Sci.* 160: 277-285.

Gould, F. 1986. Simulation models for predicting durability of insect-resistant germplasm: Hessian fly (Diptera:Cecidomyiidae)-resistant winter wheat. *Environ. Entomol.* 15:11-23.

Griffin, L. C. and Rowlett, R. M. 1981. A "lost" Viking cereal grain. *J. Ethnobiol.* 1: 200-207.

Guarino, L., Chadja, H., and Mokkadem, A. 1991. Collection of *Avena macrostachya* Bal. ex Coss. et Dur. (Poaceae) germplasm in Algeria. *Econ. Bot.* 45: 460-466.

Gustafson, J. P., Dille, J. E., and Skovmand, B. 1989. Wheat substitution in hexaploid triticale. *Plant Breeding* 102: 109-112.

Hadley, H. H. 1953. Cytological relationships between *Sorghum vulgare* and *Sorghum halapense. Agron. J.* 45: 139-143.

Hadley, H. H. 1958. Chromosome numbers, fertility, and rhizome expression of hybrids between grain sorghum and Johnson grass. *Agron. J.* 50: 278-282.

Hadley, H. H. and Mahan, J. L. 1956. The cytogenetic behavior of the progeny from a backcross (*Sorghum vulgare* X *S. halapense* X *S. vulgare*). *Agron. J.* 48: 102-106.

Hallauer, A. R and Miranda, J. B. 1988. *Quantitative Genetics in Maize Breeding.* Iowa State University Press, Ames, IA, USA.

Hanna, W. W. 1990. Transfer of germ plasm from the secondary to the primary gene pool in *Pennisetum. Theor. Appl. Genet.* 80: 200-204.

Hanna, W. W. and Bashaw, E. C. 1987. Apomixis: its identification and use in plant breeding. *Crop Sci.* 27: 1136-1139.

Harlan, J. R. and J. M. J. de Wet. 1977. Pathways of genetic transfer from *Tripsacum* to *Zea mays. Proc. Nat. Acad. Sci. USA.* 74:3494-97.

Heichel, G. H. 1980. Assessing the fossil energy costs of propagating agricultural crops. In *Handbook of Energy Utilization in Agriculture.* pp. 27-33. Pimentel, D. , Ed., CRC Press, Boca Raton, FL, USA

Heiser, C. B. and Smith, D. M. 1964. Species crosses in *Helianthus:* II. Polyploid species. *Rhodora* 66: 344-358.

He, G. C., Shu, L. H. Zhou, Y. C., Liao, L. J. 1996. Overwintering ability of Dongxiang wild rice in Wuhan district, China. *Int. Rice Res. Notes* 21: 6-7.

Henn, H.-J., Wingender, R., and Schnabel, H. 1998. Regeneration of fertile interspecific hybrids from protoplast fusions between *Helianthus annuus* and wild *Helianthus* species. *Plant Cell Rpts.* 18: 220-224.

Hillel, D. 1991. *Out of the Earth: Civilization and the Life of the Soil.* Univ. California Press, Berkeley, CA, USA.

Hodosne-Kotvics, G., Krisztian, J., and Dornbach, L. 1999. Perennial rye: a novel variety released from a new interspecific hybrid rye. *Gyakorlati Agroforum* 10.5:63.

Horlein, A. J. and Valentine, J. 1995. Triticale (X *Triticosecale*). In: *Cereals and Pseudocereals.* pp. 213-221. Williams, J. T., Ed. Chapman and Hall, London.

Hymowitz, T., and R.J. Singh. 1987. Taxonomy and speciation. In *Soybeans: Improvement, Production and Uses,* 2nd ed. pp. 23-48. Wilcox, J. R., Ed., Crop Sci. Soc. Am., Madison, WI, USA.

Hymowitz, T., R.J. Singh, and K.P. Kollipara. 1998. The genomes of the *Glycine. Plant Breed. Rev.* 16:289-317.

Iltis, H. H. 2000. Homeotic sexual translocations and the origin of maize (*Zea mays,* Poaceae): a new look at an old problem. *Econ. Bot.* 54: 7-42.

Iltis, H. H., Doebley, J. F., Guzman M., R., and Pazy, B. 1979. *Zea diploperennis* (Gramineae): a new teosinte from Mexico. *Science* 203: 186-188.

Jackson, L. L. and Dewald, C. L. 1994. Predicting evolutionary consequences of greater reproductive effort in *Tripsacum dactyloides,* a perennial grass. *Ecology* 75: 627-641.

Jackson, W. and Jackson, L. L. 1999. Developing high seed yielding perennial polycultures as a mimic of mid-grass prairie. In: *Agriculture as a Mimic of Natural Systems.* pp. 1-37. Lefroy, E. C., Hobbs, R J., O'Connor, M. H., and Pate, J. S., Eds., Kluwer Academic Publishers, Dordrecht, Netherlands.

James, J. 1979. New maize X *Tripsacum* hybrids for maize improvement. *Euphytica* 28: 239-247.

Jan, C. C. 1997. Cytology and interspecific hybridization. In: *Sunflower Technology and Production.* pp. 497-558. Schneiter, A. A., Ed., Agronomy Monograph 35, ASA-CSSA-SSSA, Madison, WI, USA.

Jauhar, P. P. 1991. *Cytogenetics and Breeding of Pearl Millet and Related Species.* Alan R. Liss Publishers, New York.

Jauhar, P. P. 1992. Synthesis and cytological characterization of trigeneric hybrids involving durum wheat, *Thinopyrum bessarabicum,* and *Lophopyrum elongatum. Theor. Appl. Genet.* 84: 511-519.

Jauhar, P. P. 1995. Meiosis and fertility of F_1 hybrids between hexaploid bread wheat and decaploid tall wheatgrass (*Thinopyrum ponticum*). *Theor. Appl. Genet.* 90:865-871.

Jiang J, Chen P, Friebe B, Raupp WJ, and Gill BS. 1993. Alloplasmic wheat-*Elymus ciliaris* chromosome addition lines. *Genome* 36(2): 327-333.

Jiang, J., Friebe, B., and Gill, B. S. 1994. Recent advances in alien gene transfer in wheat. 1994. *Euphytica* 73: 199-212.

Jones, T. A., Majerus, M. E., Scheetz, J. G., Holzworth, L. K., and Nielson, D. C. 1998. Registration of 'Rimrock' Indian ricegrass. *Crop Sci.* 38: 539-540.

Jones, T. A. and Nielson, D. C. 1991. High seed retention of Indian ricegrass PI 478833. *J. Range Manage*. 45: 72-74.

Jones, T. A., Zhang, X.-Y., and Wang, R. R.-C. 1999. Genome characterization of MT-2 perennial and OK-906 annual wheat X intermediate wheatgrass hybrids. *Crop Sci.* 39:1041-1043.

Kindiger, B. and Beckett, J.B. 1992. Popcorn germplasm as a parental source for maize X *Tripsacum dactyloides* hybridization. *Maydica* 37: 245-249.

Kindiger, B. and Dewald, C. L. 1994. Genome accumulation in eastern gamagrass, *Tripsacum dactyloides* (Poaceae). *Genetica* 92: 197-201.

Kindiger, B., Sokolov, V., and Khatypova, I. V. 1996. Evaluation of apomictic reproduction in a set of 39-chromosome maize-*Tripsacum* backcross hybrids. *Crop Sci.* 36: 1108-1113.

Knowles, R. P. 1977. Recurrent mass selection for improved seed yields in intermediate wheatgrass. *Crop Sci.* 17: 51-54.

Kohm, J. R., Levya, N., Paredes, O., Sobral, B., and Morishima, H. 1997. Quantitative trait locus analysis of trait variation among annual and perennial ecotypes of *Oryza rufipogon. Int. Rice Res. Notes* 22: 4-5.

Koller, O. L. and Zeller, F. J. 1976. The homologous relationships of rye chromosomes 4R and 7R with wheat chromosomes. *Genet. Res.* (Camb.) 28: 177-188.

Kulakow, P. A., Benson, L. L., and Vail, J. G. 1990. Prospects for domesticating Illinois bundleflower. In *Advances in New Crops.* pp. 168-171. Janick, J. and Simon, J. E., Eds., Timber Press, Portland, OR, USA

Krasnyanski, S. and Menczel, L. 1995. Production of fertile somatic hybrid plants of sunflower and *Helianthus giganteus* L. by protoplast fusion. *Plant Cell Rpts.* 14: 232-235.

Krauter, R., Steinmetz, A., and Friedt, W. 1991. Efficient interspecific hybridization in the genus *Helianthus* via "embryo rescue" and characterization of the hybrids. *Theor. Appl. Genet.* 82: 521-525.

Kulakow, P. A. 1999. Variation in Illinois bundleflower (*Desmanthus illinoensis* (Michaux) MacMillan): a potential perennial grain legume. *Euphytica* 110: 7-20.

Ladizinsky, G. 1985. Founder effect in crop-plant evolution. *Econ. Bot.* 39: 191-199.

Ladizinsky, G. 1995. Domestication via hybridization of the wild tetraploid oats *Avena magna* and *A. murphyi. Theor. Appl. Genet.* 91: 639-646.

Lapchenko, G. D. 1960. Three-genus hybrids in the grass family. . In: *Wide Hybridization in Plants.* pp. 157-162. Tsitsin, N. V., Ed., Israel Program for Scientific Translations, Jerusalem.

Latting, J. 1961. The biology of *Desmanthus illinoensis. Ecology* 42: 487-493.

Leggett, J. M. 1985. Interspecific hybrids involving the perennial oat species *Avena macrostachya. Can. J. Genet. Cytol.* 27:29-32.

Li, Q. 1998. Perennial rice cultivars. I. The perennial growth habit in Chengdu. *Southwest China J. Agric. Sci.* 11: 5-11.

Li, Q. 2000. Perennial rice cultivars. II. Nonshattering selections with strong rhizoma. *Southwest China J. Agric. Sci.* 11: 5-11.

Libby, W. J. 1992. Use of genetic variation for breeding forest trees. In *Plant Breeding in the 1990s.* pp. 101-117. Stalker, H. T., and Murphy, J. P., Eds., CAB International, Wallingford, UK.

Liu, C. J., Atkinson, M. D., Chinoy, C. N., Devos, K. M., and Gale, M. D. 1992. Nonhomologous translocations between group 4,5 and 7 chromosomes within wheat and rye. *Theor. Appl. Genet.* 83: 305-312.

Loffler, C. M., Busch, R. H., and Wiersma, J. V. 1983. Recurrent selection for grain protein percentage in hard red spring wheat. *Crop Sci.* 23: 1097-1101.

Lowdermilk, W. C. 1953. Conquest of the land through seven thousand years. *Agric. Inf. Bull.* 99: 1-30.

Lu, B. R. and von Bothmer, R. 1991. Production and cytogenetic analysis of the intergeneric hybrids between nine *Elymus* species and common wheat. *Euphytica* 58: 81-95.

Luo, Y. W., Yen, X. C., Zhang, G. Y., and Liang, G. H. 1992. Agronomic traits and chromosome behavior of autotetraploid sorghums. *Plant Breeding* 109: 46-53.

Maekawa, M., Inukai, T., Rikiishi, K., Matsuura, T., Noda, K. 1998. Inheritance of the rhizomatous trait in hybrids of *Oryza longistaminata* Chev. et Roehr. and *O. sativa* L. *SABRAO J.* 30: 69-72.

Majumder, N. D., Ram, T., and Sharma, A. C. 1997. Cytological and morphological variation in hybrid swarms and introgressed populations of interspecific hybrids (*Oryza rufipogon* Griff. X *Oryza sativa* L.) and its impact on evolution of intermediate types. *Euphytica* 94: 295-302.

Mangelsdorf, P. C. and Reeves, R. G. 1931. Hybridization of maize, *Tripsacum,* and *Euchlaena. J. Hered.* 22:329-343.

Mathre, D. E., Johnston, R. H., and J. M. Martin. 1985. Sources of resistance to *Cephalosporum gramineum* in *Triticum* and *Agropyron* species. *Euphytica* 34: 419-424.

Melz, G., Schlegel, R., and Thiele, V. 1992. Genetic linkage map of rye (*Secale cereale* L.). *Theor. Appl. Genet.* 85:33-45.

Monoghan, N. 1979. The biology of Johnson grass (*Sorghum halapense*). *Weed Res.* 19: 261-267.

Morris KLD, Raupp WJ, and Gill BS. 1990. Isolation of **Ht** genome chromosome additions from polyploid *Elymus trachycaulus* (**StStHtHt**) into common wheat (Triticum aestivum). *Genome* 33:16-22.

Mujeeb-Kazi, A. and Rodriguez, R. 1981. An intergeneric hybrid of *Triticum aestivum* L. X *Elymus giganteus. J. Hered.* 72:253-256.

Mummey, D.L., J.L. Smith, and G. Bluhm. 1998. Assessment of alternative soil management practices on N_2O emissions from US agriculture. *Agric., Ecosystem Env.* 70:79-87.

Newaj, R., Roy, R. D., Bisaria, A. K., and Singh, B. Production potential and economics of perennial pigeonpea based on alley cropping systems. *Range Management Agroforestry* 17: 69-74.

Newell, C. A. and deWet, J. M. J. 1974. Morphological and cytological variability in *Tripsacum dactyloides* (Gramineae). *Am. J. Bot.* 61: 652-664.

Newell, C.A., and T. Hymowitz. 1982. Successful wide hybridization between the soybean and a wild perennial relative, *G. tomentella* Hayata. *Crop Sci.* 22:1062-1065.

Nimbole, N. N. 1997. Maximum yield and survival of perennial pigeonpea (*Cajanus cajan*) by improving planting site, watering, and chemicals. *Indian J. Agric. Sci.* 67: 507-509.

Nyahoza, F., Marshall, C., and Sagar, G. R. 1973. The interrelationship between tillers and rhizomes of *Poa pretensis* L. autoradiographic study. *Weed Res.* 13: 304-309.

Oram, R. N. 1996. *Secale montanum:* a wider role in Australasia? *N. Zealand J. Agric. Res.* 39: 629-633.

Paterson, A. H., Schertz, K. F., Lin, Y.-R., Liu, S.-C., and Chang, Y.-L. 1995. The weediness of wild plants: molecular analysis of genes influencing dispersal and persistence of johnsongrass, *Sorghum halapense* (L.) Pers. *Proc. Natl. Acad. Sci.* 92: 6127-6131.

Petrova, K. A. 1960. Hybridization between wheat and *Elymus.* In: *Wide Hybridization in Plants.* pp.226-237. Tsitsin, N. V., Ed., Israel Program for Scientific Translations, Jerusalem.

Pimentel, D., Harvey, C., Resosudarmo, P., Sinclair, K., Kurz, D., McNair, M., Crist, S., Shpritz, L., Fitton, L., Saffouri, R., and Blair, R. 1995. Environmental and economic costs of soil erosion and conservation benefits. *Science* 267: 1117-1123.

Piper, J K. 1992. Size structure and seed yield over 4 years in an experimental *Cassia marilandica* (Leguminosae) population. *Can J. Bot.* 70: 1324-1330.

Piper, J K. 1993. A grain agriculture fashioned in nature's image: the work of The Land Institute. *Great Plains Res.* 3: 249-272.

Piper, J. K. 1999. Natural Systems Agriculture. In: *Biodiversity in Agroecosystems.* pp. 167-195. Collins, W. W. and C. O. Qualset, Eds., CRC Press, Boca Raton, FL, USA.

Piper, J. K. and Kulakow, P. A. 1994. Seed yield and biomass allocation in *Sorghum bicolor* and F_1 and backcross generations of *S. bicolor* X *S. halapense* hybrids. *Can. J. Bot.* 72: 468-474.

Plourde, A., Comeau, A., Fedak, G., and St.-Pierre, C.-A. 1989a. Intergeneric hybrids of *Triticum aestivum* X *Leymus multicaulis. Genome* 32: 282-287.

Plourde, A., Comeau, A., Fedak, G., and St.-Pierre, C.-A. 1989b. Production and cytogenetics of hybrids of *Triticum aestivum* X *Leymus innovatus. Theor. Appl. Genet.* 78:436-444.

Reimann-Philipp, R. 1986. Perennial rye as a crop alternative. *J. Agron. Crop Sci.* 157:281-285.

Reimann-Philipp, R. 1995. Breeding perennial rye. *Plant Breeding Reviews* 13: 265-292.

Reimann-Philipp, R. and Rohde, H. 1968. Die cytologische Identifizierung der genetische unterschiedlichen Gruppen von Artbastarden in den spateren Generationen der Kreuzung *S. cereale* X *S. montanum* in ihrer Bedeutung fur die Zuchtung eines perennierenden Kulturoggens. *Z. Pflanzenzuchtg.* 60:212-218.

Sacks, E. J., McNally, K. M., Liu, L., and Santa Cruz, T. 2001. Genetic variation for perenniality in *O. sativa / O. rufipogon* progeny. In *Rice genetics IV. Proceedings of the Fourth International Rice Genetics Symposium.* International Rice Research Institute, Los Baños, Philippines (in press).

Salon, P. R. and Earle, E. D. 1998. Chromosome doubling and mode of reproduction of induced tetraploids of eastern gamagrass (*Tripsacum dactyloides* L.). *Plant Cell Reports* 17: 881-885.

Salsac, L., Drevon, J.-J., Zengbe, M., Clyet-Marel, J.-C., and Obaton, M. 1984. Energy requirement of nitrogen fixation. *Physiologie Vegetale* 22: 509-521.

Sanguden, N. and Hanna, W.W. 1984. Chromosome and fertility studies on reciprocal crosses between two species of autotetraploid sorghum, *Sorghum bicolor* (L.) and *Sorghum halapense* (L.) *Pers. J. Hered.* 75: 293-296.

Scheinost, P., Lammer, D., Cai, X., Murray, T. D., and S. S. Jones. 2001. Perennial wheat: a sustainable cropping system for the Pacific Northwest. *J. Alternative Agric.* (in press)

Schlegel, R., Boerner, A., Thiele, V., and Melz, G. 1991. The effect of the *Ph1* gene in diploid rye, *Secale cereale* L. *Genome* 34: 913-917.

Schmit,V., Piggin, C., and Courtois, B. A.D. 1996. Improving sustainability in the uplands through the development of a perennial upland rice. *IRRI Discussion Paper Series* 16: 265-273.

Schulz-Schaeffer, J. and Haller, S. E. 1987. Registration of Montana-2 perennial X*Agrotriticum intermediodurum* Khizhnyak. *Crop Sci.* 27:822-823.

Seifers, D. L., Handley, M. K., and Bowden, R. L. 1993. Sugarcane mosaic virus strain maize dwarf mosaic virus B as a pathogen of eastern gamagrass. *Plant Dis.* 77: 335-339.

Seiler, G. J. 1992. Utilization of wild sunflower species for the improvement of cultivated sunflower. *Field Crops Res.* 30: 195-230.

Seiler, G. J. and Riesenberg, L. H. 1997. Systematics, origin, and germplasm resources of the wild and domesticated sunflower. . In: *Sunflower Technology and Production.* pp. 21-65. Schneiter, A. A., Ed., Agronomy Monograph 35, ASA-CSSA-SSSA, Madison, WI, USA.

Seiler, G. J. 1991. Registration of six interspecific sunflower germplasm lines derived from wild perennial species. *Crop Sci.* 31:1097-1098.

Seiler, G. J. 1993. Registration of six interspecific germplasm lines derived from wild perennial sunflower. *Crop Sci.* 33: 1110-1111.

Sharma, H.C. 1995. How wide can a wide cross be? *Euphytica* 82: 43-64.

Sharma, H. C. and Gill, B. S. 1983. Current status of wide hybridization in wheat. *Euphytica* 32: 17-31.

Shaver, D. L. 1964. Perennialism in *Zea. Genetics* 50: 393-406.

Shaver, D. L. 1967. Perennial maize. *J. Hered.* 58: 271-273.

Shoemaker, R.C., M.S. Heath, H. Skorupksa, X. Delannay, M. Edge, and C.A. Newell. 1990. Fertile progeny of a hybridization between soybean [*Glycine max* (L.) Merr.] and *G. tomentella* Hayata. *Theor. Appl. Genet.* 80:17-23.

Singh, R.J., and T. Hymowitz. 1999. Soybean genetic resources and crop improvement. *Genome* 42:605-616.

Singh, R.J., K.P. Kollipara, and T. Hymowitz. 1993. Backcross (BC_2-BC_4)-derived fertile plants from *Glycine max* and *G. tomentella* intersubgeneric hybrids. *Crop Sci.* 33:1002-1007.

Singh, R.J., K.P. Kollipara, and T. Hymowitz. 1998. Monosomic alien addition lines derived from *Glycine max* (L.) Merr. and *G. tomentella* Hayata: Production, characterization, and breeding behavior. *Crop Sci.* 38:1438-1489.

Skovmand, B., Fox, P. N., and Villareal, R. L. 1984. Triticale in commercial agriculture: progress and promise. *Adv. Agron.* 37: 1-45.

Slafer, G. A. and Savin, R. 1994. Source-sink relationships and grain mass at different positions within the spike in wheat. *Field Crops Res.* 37: 39-49.

Sleper, D. A. 1987. Forage grasses. In *Principles of Cultivar Development, Volume 2: Crop Species.* pp. 161-208. Fehr, W. R., Ed., Macmillan Publishing Co., New York.

Srinivasan, G. and Brewbaker, J. L. 1999. Genetic analysis of hybrids between maize and perennial teosinte. I. Morphological traits. *Maydica* 44: 353-369.

Stalker, H. T., Harlan, J. R., and deWet, J. M. J. 1977a. Cytology and Morphology of maize-*Tripsacum* introgression. *Crop Sci.* 17: 745-748.

Stalker, H. T., Harlan, J. R., and deWet, J. M. J. 1977b. Observations on introgression of *Tripsacum* into maize. *Am. J. Bot.* 64: 1162-1169.

Stutz, H. C. 1957. A cytogenetic analysis of the hybrid *Secale cereale* L. X *S. montanum* Guss. and its progeny. *Genetics* 42: 199-221.

Sukno, S. Ruso, J., Jan, C. C., Melero-Vara, J. M., and Fernandez-Martinez, J. M. 1999. Interspecific hybridization between sunflower and wild perennial *Helianthus* species via embryo rescue. *Euphytica* 106: 69-78.

Suneson, C. A. and Pope, W. K. 1946. Progress with *Triticum* X *Agropyron* crosses in California. *J. Am. Soc. Agron.* 38: 956-963.

Suneson, C. A., El Sharkawy, A., and Hall, W. E. 1963 Progress in 25 years of perennial wheat development. *Crop Sci.* 3: 437438.

Talbert, L. E., Doebley, J. F., Larson, S., and Chandler, V. L. 1990. Tripsacum andersonii is a natural hybrid involving *Zea* and *Tripsacum:* molecular evidence. *Am. J. Bot.* 77: 722-726.

Tao, D., Hu, F., Yang, Y., Xu, P., Li, J., Sacks, E., McNally, K. L., and Sripichitt, P. 2001. Rhizomatous individual was obtained from interspecific BC_1F_1 progenies between *Oryza sativa* and *Oryza longistaminata.* In *Rice genetics IV. Proceedings of the Fourth International Rice Genetics Symposium.* International Rice Research Institute, Los Baños, Philippines. (in press).

Taylor, N. L. 1987. Forage Legumes. In *Principles of Cultivar Development, Volume 2: Crop Species.* pp. 209-248. Fehr, W. R., Ed., Macmillan Publishing Co., New York.

Tsitsin, N. V. Remote hybridisation as a method of creating new species and varieties of plants. *Euphytica* 14: 326-330.

van der Maesen, L. J. G. 1972. *Cicer L., A Monograph of the Genus, with Special Reference to the Chickpea (*Cicer arietinum *L.), Its Ecology and Cultivation.* Mededelingen Landbouwhogeschool, Wageningen, Netherlands.

Voigt, P. W. and Sharp, W. C.. 1995. Grasses of the plains and southwest. In: *Forages.* pp. 395-408. Barnes, R. F., Miller, D. A., and Nelson, C. J., Eds., Iowa State Univ. Press, Ames, IA, USA.

Wagoner, P. 1990a. Perennial grain development: past efforts and potential for the future. *Critical Rev. Plant Sci.* 9: 381-408.

Wagoner, P. 1990b. Perennial grain: new use for intermediate wheatgrass. *J. Soil Water Conserv.* 45: 81-82.

Wagoner, P. 1995. Intermediate wheatgrass (*Thinopyrum intermedium*): development of a perennial grain crop. In: *Cereals and Pseudocereals.* pp. 248-259. Williams, J. T., Ed. Chapman and Hall, London.

Wagoner, P., Janke, R., and Longnecker, L. R. 1993. *Energy Analysis of Six Cropping System Scenarios.* Rodale Institute Research Center, Emmaus, PA, USA.

Wagoner, P., van der Grinten, M., and Drinkwater, L. E. 1996. Breeding intermediate wheatgrass (*Thinopyrum intermedium*) for use as a perennial grain. *Agron Abstr.* 1996: 93.

Warwick, S. I., Phillips, D., and Andrews, C. 1986. Rhizome depth: the critical factor in winter survival of *Sorghum halapense* (L.) Pers. (Johnson grass). *Weed Res.* 26: 381-387.

Watt, D. 1989. Economic feasibility of a perennial grain: intermediate wheatgrass. In: *Grass or Grain?: Intermediate Wheatgrass in a Perennial Cropping System for the Northern Plains.* pp. 11-13. Wagoner, P., Gardner, J. C., Schatz, B. G., Sobolik, F., and Watt, D., Eds. North Dakota Expt. Sta. Rsch. Rpt. No. 108, North Dakota State Univ. Press, Fargo, ND and Rodale Institute Research Center, Kutztown, PA.

Whelan, E. D. P. 1978. Hybridization between annual and perennial diploid species of *Helianthus. Can. J. Genet. Cytol.* 20: 523-530.

Whelan, E. D. P. and Dorrell, D. G. 1980. Interspecific hybrids between Helianthus maximiliani Schrad. and *H. annuus* L.: effect of backcrossing on meiosis, anther morphology, and seed characteristics. *Crop Sci.* 20: 29-34.

Whyte, R. O. 1977. The botanical Neolithic revolution. *Human Ecol.* 5: 209-222.

Wright, L. S., Taliaferro, C. M., and Horn, F. P. 1983. Variability of morphological and agronomic traits in eastern gamagrass accessions. *Crop Sci.* 23: 135-137.

Xiao, J., Li, J., Grandillo, S., Ahn, S. N., Yuan, L., Tanksley, S. D., and McCouch, S. R. 1998. Identification of trait-improving quantitative trait loci alleles from a wild rice relative, *Oryza rufipogon. Genetics* 150: 899-909.

Xiong, L. Z., Liu, K. D., Dai, X. K., Xu, C. G., and Zhang, Q. 1999. Identification of genetic factors controlling domestication-related traits of rice using an F_2 population of a cross between *Oryza sativa* and *Oryza rufipogon. Theor. Appl. Genet.* 98: 243-251.

Zhu, Y., Chen, H., Fan, J., Wang, Y., Li, Y., Chen, J., Fan, J.-X., Yang, S., Hu, L., Leung, H., Mew, T. W., Teng, P. S., Wang, Z., and Mundt, C. C. 2000. Genetic diversity and disease control in rice. *Nature* 406: 718-722.