

## VII. RECENT SOYBEAN GENETICS AND BREEDING PUBLICATIONS

- Adams, Clifford A., Shong Wan Norby and Robert W. Rinne. 1982. Protein modification and utilization of starch in soybean (*Glycine max* L. Merr.) seed maturation. *J. Exp. Bot.* 33:279-287.
- Alessi, J. and J. F. Power. 1982. Effects of plant and row spacing on dry-land soybean yield and water-use efficiency. *Agron. J.* 74:851-854.
- Anand, S. C. 1982. New soybean strain resistant to soybean cyst nematode: PI 416.762. *Plant Dis.* 66:933-934.
- Anderson, T. A. and R. I. Buzzell. 1982. Efficacy of metalaxyl in controlling *Phytophthora* root and stalk rot of soybean cultivars differing in field tolerance. *Plant Dis.* 66:1144-1145.
- Andrawis, A., A. Pinsky and S. Grossman. 1982. Isolation of soybean lipoxygenase-2 by affinity chromatography. *Phytochemistry* 21:1523-1525.
- Arechavaleta-Medina, F. and H. E. Snyder. 1981. Water imbibition by normal and hard soybeans. *J. Am. Soil Chem. Soc.* 58:976-979.
- Aslam, M. 1982. Differential effect of tungsten on the development of endogenous and nitrate-induced nitrate reductase activities in soybean leaves. *Plant Physiol.* 70:35-38.
- Athow, K. L. and F. A. Laviolette. 1982. *Rps*<sub>6</sub>, a major gene for resistance to *Phytophthora megasperma* f. sp. *glycinea* in soybean. *Phytopathology* 72:1564-1567.
- Atkins, C. A., A. Ritchie, P. B. Rowe, E. McCairns and D. Saver. 1982. De novo purine synthesis in nitrogen-fixing nodules of cowpea (*Vigna unguiculata* [L.] Walp.) and soybean (*Glycine max* [L.] Merr.). *Plant Physiol.* 70:55-60.
- Backman, P. A., J. C. Williams and M. A. Crawford. 1982. Yield losses in soybean from anthracnose caused by *Colletotrichum truncatum*. *Plant Dis.* 66:1032-1034.
- Barrentine, W. L., E. E. Hartwig, C. J. Edwards, Jr. and T. C. Kilen. 1982. Tolerance of three soybean (*Glycine max*) cultivars to Metribuzin. *Weed Sci.* 30:344-348.
- Burton, J. W., A. E. Purcell and W. M. Walter, Jr. 1982. Methionine concentration in soybean protein from populations selected for increased percent protein. *Crop Sci.* 22:430-432.
- Batchelor, J. T. and T. C. Keisling. 1982. Soybean growth over and between subsoil channels on two loamy sands. *Agron. J.* 74:926-927.
- Beatty, K. D., I. L. Eldridge and A. M. Simpson, Jr. 1982. Soybean response to different planting patterns and dates. *Agron. J.* 74:859-862.

- Beaver, J. S. and R. L. Cooper. 1982. Dry matter accumulation patterns and seed yield components of two indeterminate soybean cultivars. *Agron J.* 74:380-383.
- Behrens, P. W., T. V. Marsho and R. J. Radmer. 1982. Photosynthetic O<sub>2</sub> exchange kinetics in isolated soybean cells. *Plant Physiol.* 70:179-185.
- Berkowitz, R. L. and R. L. Travis. 1982. A comparative evaluation of the level of concanavalin A binding by enriched plasma membrane from developing soybean roots. *Plant Physiol.* 69:379-384.
- Bethlenfalvay, G. J., R. S. Pacovsky and M. S. Brown. 1982. Parasitic and mutualistic associations between a mycorrhizal fungus and soybean: Development of the endophyte. *Phytopathology* 72:894-897.
- Bhowmik, P. C. and J. D. Doll. 1982. Corn and soybean response to allelopathic effects of weed and crop residues. *Agron. J.* 74:601-606.
- Blogg, D. and B. C. Imrie. 1982. Starch gel electrophoresis for soybean cultivar identification. *Seed Sci. Technol.* 10:19-24.
- Boerma, H. R. and D. A. Ashley. 1982. Irrigation, row spacing, and genotype effects on late and ultra-late planted soybeans. *Agron. J.* 74:995-999.
- Boquet, D. J., K. L. Koonce and D. M. Walker. 1982. Selected determinate soybean cultivar yield responses to row spacings and planting dates. *Agron. J.* 74:136-138.
- Bowers, G. R., Jr. and R. M. Goodman. 1982. New sources of resistance to seed transmission of soybean mosaic virus in soybeans. *Crop Sci.* 22: 155-156.
- Bricker, T. M. and D. W. Newman. 1981. The chlorophyll-proteins of soybean (*Glycine max* L. var. Wayne) cotyledons. *Z. Pflanzenphysiol.* Bd. 104: 91-96.
- Bricker, T. M. and D. W. Newman. 1982. Changes in the chlorophyll-proteins and electron transport activities of soybean (*Glycine max* L., cv. Wayne) cotyledon chloroplasts during senescence. *Photosynthetica* 16:239-244.
- Brisson, N. and D. P. S. Verma. 1982. Soybean leghemoglobin gene family: Normal, pseudo, and truncated genes. *Proc. Natl. Acad. Sci. USA* 79: 4055-4059.
- Bryant, G. B., J. H. Hill, T. B. Bailey, H. Tachibana, D. P. Durand and H. I. Benner. 1982. Detection of soybean mosaic virus in seed by solid-phase radioimmunoassay. *Plant Dis.* 66:693-695.
- Burke, J. J., J. N. Siedow and D. E. Moreland. 1982. Succinate dehydrogenase, a partial purification from mungbean hypocotyls and soybean cotyledons. *Plant Physiol.* 70:1577-1581.
- Buzzell, R. I. and T. A. Anderson. 1982. Plant loss response of soybean cultivars to *Phytophthora megasperma* f. sp. *glycinea* under field conditions. *Plant Dis.* 66:1146-1148.

- Buzzell, R. I., E. W. B. Ward, G. Lazarovits and P. Stössel. 1982. Genotype, race, temperature, and cultivar effects on reaction type of unwounded soybean hypocotyls inoculated with zoospores of *Phytophthora megasperma* f. sp. *glycinea*. *Phytopathology* 72:801-804.
- Carlson, R. E., M. Karimi-Abadchi and R. H. Shaw. 1982. Comparison of the nodal distribution of yield components of indeterminate soybeans under irrigated and rain-fed conditions. *Agron. J.* 74:531-535.
- Carter, T. E., Jr., J. W. Burton and C. A. Brim. 1982. Recurrent selection for percent protein in soybean seed - indirect effects on plant N accumulation and distribution. *Crop Sci.* 22:513-519.
- Casterline, J. L. and N. M. Barnett. 1982. Cadmium-binding components in soybean plants. *Plant Physiol.* 69:1004-1007.
- Cavalieri, A. J. and J. S. Boyer. 1982. Water potentials induced by growth in soybean hypocotyls. *Plant Physiol.* 69:492-496.
- Caviness, C. E., R. D. Riggs and H. J. Walters. 1982. Registration of Jeff soybean. *Crop Sci.* 22:160.
- Chabot, J. F. and A. C. Leopold. 1982. Ultrastructural changes of membranes with hydration in soybean seeds. *Am. J. Bot.* 69:623-633.
- Chang, J. F., D. E. Green and R. Shibles. 1982. Yield and agronomic performance of semi-determinate and indeterminate soybean stem types. *Crop Sci.* 22:97-101.
- Chen, Li-Ching, D. P. Durand and J. H. Hill. 1982. Detection of pathogenic strains of soybean mosaic virus by enzyme-linked immunoabsorbent assay with polystyrene plates and beads as the solid phase. *Phytopathology* 72: 1171-1181.
- Chien, Y.-C., K. N. Kao and L. R. Wetter. 1982. Chromosomal and isozyme studies of *Nicotiana tabacum* -*Glycine max* hybrid cell lines. *Theor. Appl. Genet.* 62:301-304.
- Cho, E. K. and R. M. Goodman. 1982. Evaluation of resistance in soybeans to soybean mosaic virus strains. *Crop Sci.* 22:1133-1136.
- Cianzio, S. R. and W. R. Fehr. 1982. Variation in the inheritance of resistance to iron deficiency chlorosis in soybeans. *Crop Sci.* 22:433-434.
- Cianzio, S. R., S. J. Frank and W. R. Fehr. 1982. Seed width to pod width ratio for identification of green soybean pods that have attained maximum length and width. *Crop Sci.* 22:463-466.
- Cohen, J. D. 1982. Identification and quantitative analysis of indole-3-acetyl-L-aspartate from seeds of *Glycine max* L. *Plant Physiol.* 70:749-753.
- Crafts-Brandner, S. J. and J. E. Harper. 1982. Nitrate reduction by roots of soybean (*Glycine max* [L.] Merr.) seedlings. *Plant Physiol.* 69:1298-1303.

- Crane, C. F., W. D. Beversdorf and E. T. Bingham. 1982. Chromosome pairing and associations at meiosis in haploid soybean (*Glycine max*). Can. J. Genet. Cytol. 3:293-300.
- Cure, J. D., R. P. Patterson, C. D. Raper, Jr. and W. A. Jackson. 1982. Assimilate distribution in soybeans as affected by photoperiod during seed development. Crop Sci. 22:1245-1250.
- Davidonis, G. H., R. H. Hamilton and R. O. Mumma. 1982. Evidence for compartmentalization of conjugates of 2,4-dichlorophenoxyacetic acid in soybean callus tissue. Plant Physiol. 70:939-942.
- Davidonis, G. H., R. H. Hamilton and R. O. Mumma. 1982. Metabolism of 2,4-dichlorophenoxyacetic acid in 2,4-dichlorophenoxyacetic acid-resistant soybean callus tissue. Plant Physiol. 70:104-107.
- Delannay, X. and R. G. Palmer. 1982. Four genes controlling root fluorescence in soybean. Crop Sci. 22:278-281.
- Delannay, X. and R. G. Palmer. 1982. Genetics and cytology of the  $ms_4$ - male sterile soybean. J. Hered. 73:219-223.
- Del Campillo, E. and L. M. Shannon. 1982. An  $\alpha$ -galactosidase with hemagglutinin properties from soybean seeds. Plant Physiol. 69:628-631.
- Desjardins, A. E., L. M. Ross, M. W. Spellman, A. G. Darvill and P. Albersheim. 1982. Host-pathogen interactions. XX. Biological variation in the protection of soybeans from infection by *Phytophthora megasperma* f. sp. *Glycinea*. Plant Physiol. 69:1046-1050.
- Devine, T. E. and B. H. Breithaupt. 1981. Frequencies of nodulation response alleles,  $Rj_2$  and  $Rj_4$ , in soybean plant introduction and breeding lines. USDA Tech. Bull. 1628.
- Dhingra, O. D. and J. J. Muchovej. 1982. Infusion of fungicides into soybean seeds with intact seed coats by organic solvents. Seed Sci. Technol. 10:109-117.
- Dreher, T. W., M. F. Ngian and G. M. Halloran. 1980. Mitotic aberrations and leaf spot induction in soybean (*Glycine max* [L.] Merrill) using ethyl methane-sulphonate. Mutat. Res. 71:201-206.
- Drevon, J. J., L. Frazier, S. A. Russell and H. J. Evans. 1982. Respiratory and nitrogenase activities of soybean nodules formed by hydrogen uptake negative ( $Hup^-$ ) mutant and revertant strains of *Rhizobium japonicum* characterized by protein patterns. Plant Physiol. 70:1341-1346.
- Dudley, J. W. 1982. Theory for transfer of alleles. Crop Sci. 22:631-639.
- Dunleavy, J. M. 1982. Effects of air temperature on disease severity and peroxidase activity of soybean leaves infected by *Peronospora manschurica*. Crop Sci. 22: 623-625.

- Ecochard, R. and Y. Ravelomanantsoa. 1982. Genetic correlations derived from full-sib relationships in soybean (*Glycine max* L. Merr.) *Theor. Appl. Genet.* 63:9-15.
- Eisbrenner, G. and H. J. Evans. 1982. Spectral evidence for a component involved in hydrogen metabolism of soybean nodule bacteroids. *Plant Physiol.* 70:1667-1672.
- Elliott, D. C. and M. J. Thompson. 1982. The identity of the major metabolite of benzylaminopurine in soybean cultures, and the inhibition of its formation by aminophylline. *Plant Sci. Lett.* 28:29-38.
- Ellis, R. H., K. Osei-bonsu and E. H. Roberts. 1982. The influence of genotype, temperature and moisture on seed longevity in chickpea, cowpea and soya bean. *Ann. Bot.* 50:69-82.
- Erickson, L. R. and W. D. Beversdorf. 1982. Effect of selection for protein on lengths of growth stages in *Glycine max* x *Glycine soja* crosses. *Can. J. Plant Sci.* 2:293-304.
- Erickson, L. R., W. D. Beversdorf and S. T. Ball. 1982. Genotype x environment interactions for protein in *Glycine max* x *Glycine soja* crosses. *Crop Sci.* 22:1099-1101.
- Erickson, L. R., H. D. Voldeng and W. D. Beversdorf. 1981. Early generation selection for protein in *Glycine max* x *G. soja* crosses. *Can. J. Plant Sci.* 61:901-908.
- Eskins, K. and D. J. Banks. 1979. The relationship of accessory pigments to chlorophyll a content in chlorophyll-deficient peanut and soybean varieties. *Photochem. Photobiol.* 30:585-588.
- Eskins, K., L. Harris and R. L. Bernard. 1981. Genetic control of chloroplast pigment development as a function of leaf and plant maturity. *Plant Physiol.* 67:759-762.
- Fehr, W. R. 1982. Control of iron-deficiency chlorosis. *J. Plant Nutr.* 5: 611-621.
- Ferriss, R. S. 1982. Relationship of infection and damping-off of soybean to inoculum density of *Phythium ultimum*. *Phytopathology* 72:1397-1403.
- Fett, W. F. and S. F. Osman. 1982. Inhibition of bacteria by the soybean isoflavonoids glyceollin and coumestrol. *Phytopathology* 72:755-760.
- Fett, W. F. and R. M. Zacharius. 1982. Bacterially-induced glyceollin production on soybean cell suspension cultures. *Plant Sci. Lett.* 24:303-309.
- Finke, R. L., J. E. Harper and R. H. Hageman. 1982. Efficiency of nitrogen assimilation by N<sub>2</sub>-fixing and nitrate-grown soybean plants (*Glycine max* [L.] Merr.). *Plant Physiol.* 70:1178-1184.

- Finn, G. A. and W. A. Brun. 1982. Effect of atmospheric  $\text{CO}_2$  enrichment on growth, nonstructural carbohydrate content, and root nodule activity in soybean. *Plant Physiol.* 69:327-331.
- Fraser, J., D. B. Egli and J. E. Leggett. 1982. Pod and seed development in soybean cultivars with differences in seed size. *Agron. J.* 74:81-85.
- Gai, Junyi, W. R. Fehr and R. G. Palmer. 1982. Genetic performance of some agronomic characters in four generations of a backcrossing program involving *Glycine max* and *Glycine soja*. *Acta Genet. Sin.* 9:44-56.
- Gent, M. P. N. 1982. Effect of defoliation and depodding on  $^{14}\text{CO}_2$  assimilation and photosynthate distribution in Y-shaped soybean plants. *Crop Sci.* 22:860-867.
- Gent, M. P. N. 1982. Effect of defoliation and depodding on long distance translocation and yield in Y-shaped soybean plants. *Crop Sci.* 22:245-250.
- Gibson, D. M., S. Stack, K. Krell and J. House. 1982. A comparison of soybean agglutinin in cultivars resistant and susceptible to *Phytophthora megasperma* var. *sojae* (Race 1). *Plant Physiol.* 70:560-566.
- Gilman, D. F., R. M. McPherson, L. D. Newsome, D. C. Herzog and C. Williams. 1982. Resistance in soybeans to the southern green stink bug. *Crop Sci.* 22:573-576.
- Gossett, B. J., L. F. Morgan and T. R. Murphy. 1982. Soybean plant damage and yields as affected by Metribuzin and seed quality. *Agron. J.* 74:691-693.
- Gottschalk, W. and M. L. H. Kaul. 1980. Asynapsis and desynapsis in flowering plants. I. Asynapsis. *Nucleus* 23:1-15.
- Gottschalk, W. and M. L. H. Kaul. 1980. Asynapsis and desynapsis in flowering plants. II. Desynapsis. *Nucleus* 23:97-120.
- Gowda, S. and D. T. N. Pillay. 1982. Cyclic AMP independent protein kinases from soybean cotyledons (*Glycine max* L.). *Plant Sci. Lett.* 25:49-59.
- Grubinger, V., R. Zobel, J. Vendeland and P. Cortes. 1982. Nodule distribution on roots of field-grown soybeans in subsurface soil horizons. *Crop Sci.* 22:153-155.
- Hanada, K. and N. Tochihara. 1982. Some properties of an isolate of the soybean stunt strain of cucumber mosaic virus. *Phytopathology* 72:761-764.
- Hanson, W. D. and D. R. West. 1982. Source-sink relationships in soybeans. I. Effects of source manipulation during vegetative growth on dry matter distribution. *Crop Sci.* 22:372-376.
- Harmon, G. E., B. L. Nedrow, B. E. Clark and L. R. Mattick. 1982. Association of volatile aldehyde production during germination with poor soybean and pea seed quality. *Crop Sci.* 22:712-716.
- Hartwig, E. E., J. M. Epps and N. Buehring. 1982. Response of resistant and susceptible soybean cultivars to continuous cropping in area infested with cyst nematode. *Plant Dis.* 66:18-20.

- Hartwig, E. E. and B. L. Keeling. 1982. Soybean mosaic virus investigations with susceptible and resistant soybeans. *Crop Sci.* 22:955-957.
- Hartwig, E. E., T. C. Kilen, L. D. Young and C. J. Edwards, Jr. 1982. Effects of natural selection in segregating soybean populations exposed to *Phytophthora* rot or soybean cyst nematodes. *Crop Sci.* 22:588-590.
- He Meng-yuan, Zhou Ya-yan, Xu Zong-rao and Zhang Jia-shan. 1979. The microsporogenesis and megasporogenesis of soybean. *Acta Bot. Sin.* 21:158-163.
- Heatherly, L. G., L. D. Young, J. M. Epps and E. E. Hartwig. 1982. Effect of upper-profile soil water potential on numbers of cysts of *Heterodera glycines* in soybeans. *Crop Sci.* 22:833-835.
- Heindl, J. C., D. R. Carlson, W. A. Brun and M. L. Brenner. 1982. Ontogenetic variation of four cytokinins in soybean root pressure exudate. *Plant Physiol.* 70:1619-1625.
- Herbert, S. J. and G. V. Litchfield. 1982. Partitioning soybean seed yield components. *Crop Sci.* 22:1074-1079.
- Herridge, D. F. 1982. Use of the ureide technique to describe the nitrogen economy of field-grown soybeans. *Plant Physiol.* 70:7-11.
- Hepperly, P. R. and J. B. Sinclair. 1982. A glycerin and polyethyleneglycol solution for separating healthy and diseased soybean seeds. *Seed Sci. Technol.* 10:125-129.
- Hildebrand, D. F. and T. Hymowitz. 1982. Inheritance of lipoxygenase-1 activity in soybean seeds. *Crop Sci.* 22:851-853.
- Hill, H. J. and S. H. West. 1982. Fungal penetration of soybean seed through pores. *Crop Sci.* 22:602-605.
- Holliday, M. J. and N. T. Keen. 1982. The role of phytoalexins in the resistance of soybean leaves to bacteria: Effect of glyphosate on glyceollin accumulation. *Phytopathology* 72:1470-1474.
- Hsu, F. C. and R. L. Obendorf. 1982. Compositional analysis of *in vitro* matured soybean seeds. *Plant Sci. Lett.* 27:129-135.
- Huber, S. C. and D. W. Israel. 1982. Biochemical basis for partitioning of photosynthetically fixed carbon between starch and sucrose in soybean (*Glycine max* L., Merr.) leaves. *Plant Physiol.* 69:691-696.
- Hunst, P. L. and S. A. Tolin. 1982. Isolation and comparison of two strains of soybean mosaic virus. *Phytopathology* 72:710-713.
- Hunter, W. J., C. J. Fahring, S. R. Olsen and L. K. Porter. 1982. Location of nitrate reduction in different soybean cultivars. *Crop Sci.* 22:944-948.
- Imsande, J. 1981. Exchange of metabolites and energy between legume and *Rhizobium*. *Int. Rev. Cytology* S13:179-189.

- Imsande, J. and E. J. Ralston. 1982. Dinitrogen fixation in male-sterile soybeans. *Plant Physiol.* 69:745-746.
- Imsande, J. and E. J. Ralston. 1981. Hydroponic growth and nondestructive assay for dinitrogen fixation. *Plant Physiol.* 68:1380-1384.
- Irons, S. M. and O. C. Burnside. 1982. Selective control of sunflower in soybeans. *Agron. J.* 74:291-296.
- Irwin, J. A. G. and J. L. Dale. 1982. Relationship between *Phytophthora megasperma* isolates from chickpea, lucerne, and soybean. *Aust. J. Bot.* 30:199-210.
- Irwin, J. A. G. and P. W. Langdon. 1982. A laboratory procedure for determining relative levels of field resistance to *Phytophthora megasperma* f. sp. *glycinea*. *Aust. J. Agric. Res.* 33:33-39.
- Isely, Duane. 1982. Leguminosae and *Homo sapiens*. *Econ. Bot.* 36:46-70.
- Israel, D. W. and W. A. Jackson. 1982. Ion balance, uptake and transport processes in N<sub>2</sub>-fixing and nitrate- and urea-dependent soybean plants. *Plant Physiol.* 69:171-178.
- Jackson, P. J. and K. G. Lark. 1982. Ribosomal RNA synthesis in soybean suspension cultures growing in different media. *Plant Physiol.* 69:234-239.
- Jeffers, D. L., A. F. Schmitthenner and D. L. Reichard. 1982. Seed-borne fungi, quality, and yield of soybeans treated with benomyl fungicide by various application methods. *Agron. J.* 74:589-592.
- Jin, Il-Doo, Jun Inouye and Shigeo Matsumoto. 1982. Variations in seed size, ecotype and growth habit in Korean soybean varieties. *Jpn. J. Crop Sci.* 51:276-280. (In Japanese, with English summary)
- Johns, C. W. and R. G. Palmer. 1982. Floral development of a flower-structure mutant in soybeans, *Glycine max* (L.) Merr. (Leguminosae). *Am. J. Bot.* 69:829-842.
- Jones, J. W., B. Zur, K. J. Boote and L. C. Hammond. 1982. Plant resistance to water flow in field soybeans. I. Non-limiting soil moisture. *Agron. J.* 74:92-98.
- Judd, R., D. M. TeKrony, D. B. Egli and G. M. White. 1982. Effect of freezing temperatures during soybean seed maturation on seed quality. *Agron. J.* 74:645-650.
- Karlen, D. L., P. G. Hunt and T. A. Matheny. 1982. Accumulation and distribution of K, Ca, and Mg by selected determinate soybean cultivars grown with and without irrigation. *Agron. J.* 74:347-354.
- Karlen, D. L., P. G. Hunt and T. A. Matheny. 1982. Accumulation and distribution of P, Fe, Mn, and Zn by selected determinate soybean cultivars grown with and without irrigation. *Agron. J.* 74:297-303.

- Keeling, B. L. 1982. A seedling test for resistance to soybean stem canker caused by *Diaporthe phaseolorum* var. *caulivora*. *Phytopathology* 72:807-809.
- Keeling, B. L. 1982. Effect of soybean mosaic virus on root volume and dry weight of soybean plants. *Crop Sci.* 22:629-630.
- Keeling, B. L. 1982. Factors affecting the reaction of soybeans to *Phytophthora megasperma* var. *sojae* in hydroponic culture. *Crop Sci.* 22:325-327.
- Keen, N. T., M. J. Holliday and M. Yoshikawa. 1982. Effects of glyphosate on glyceollin production and the expression of resistance to *Phytophthora megasperma* f. sp. *glycinea* in soybean. *Phytopathology* 72:1467-1470.
- Keyser, H. H., T. S. Hu and D. F. Weber. 1982. Fast-growing rhizobia isolated from root nodules of soybean. *Science* 215:1631-1632.
- Keyser, H. H., P. Van Berkum and D. F. Weber. 1982. A comparative study of the physiology of symbioses formed by *Rhizobium japonicum* with *Glycine max*, *Vigna unguiculata*, and *Macroptilium atropurpureum*. *Plant Physiol.* 70:1626-1630.
- Kiang, Y. T. 1981. Inheritance and variation of amylase in cultivated and wild soybean and their wild relatives. *J. Hered.* 72:382-386.
- Koduru, P. R. K. and M. K. Rao. 1981. Cytogenetics of synaptic mutants in higher plants. *Theor. Appl. Genet.* 59:197-214.
- Kogan, M. and D. E. Kuhlman. 1982. Soybean insects: Identification and management in Illinois. *Agric. Exp. Stn., Univ. Illinois Bull.* 773.
- Kollenkark, J. C., C. S. T. Daughtry, M. E. Bauer and T. L. Housley. 1982. Effects of cultural practices on agronomic and reflectance characteristics canopies. *Agron. J.* 74:751-758.
- Kubowicz, B. D., L. N. Vanderhoef and J. B. Hanson. 1982. ATP-dependent calcium transport in plasmalemma preparations from soybean hypocotyls. *Plant Physiol.* 69:187-191.
- Kulik, M. M. and R. W. Yaklich. 1982. Evaluation of vigor tests in soybean seeds: Relationship of accelerated aging, cold, sand bench, and speed of germination tests to field performance. *Crop Sci.* 22:766-770.
- Kulik, M. M. and R. W. Yaklich. 1982. Relationship of the appearance of soybean seeds to seed-borne infection by *Diaporthe phaseolorum* var. *sojae* and other aspects of seed quality. *Seed Sci. Technol.* 10:335-342.
- Kulik, M. M., R. W. Yaklich and R. L. Garcia. 1982. The influence of the soybean foliar fertilisation on the results of several laboratory and greenhouse tests of seed germination and vigour, and seed-borne fungal infection. *Seed Sci. Technol.* 10:321-325.
- Kwon, S. H., J. R. Kim, J. H. Oh and K. H. Chung. 1978. Evaluation of Korean soybean germplasm. Korea Atomic Energy Research Institute, Seoul. 262-page bulletin.

- Layzell, D. B. and T. A. LaRue. 1982. Modeling C and N transport to developing soybean fruits. *Plant Physiol.* 70:1290-1298.
- Lazarovits, G. and E. W. B. Ward. 1982. Relationship between localized glyceollin accumulation and metalaxyl treatment in the control of Phytophthora rot in soybean hypocotyls. *Phytopathology* 72:1217-1221.
- Leath, S. and R. B. Carroll. 1982. Screening for resistance to *Fusarium oxysporum* in soybean. *Plant Dis.* 66:1140-1143.
- Leffel, R. C. 1981. The future of public soybean improvement programs. Proc. 11th Soybean Seed Res. Conf. Chicago. December.
- Lersten, N. R. 1981. Testa topography in Leguminosae, subfamily Papilionoideae. *Proc. Iowa Acad. Sci.* 88:180-191.
- Lin, Jianxing, Xingtian Zhang, Huixia Bai, Fan Zhang and Can Zhao. 1982. Purification identification and electron microscope of viruses infecting soybean plant. *Soybean Science* 1:57-60. (In Chinese, with English summary)
- Lin, Y., R. A. Moreau and A. H. C. Huang. 1982. Involvement of glyoxysomal lipase in the hydrolysis of storage triacylglycerols in the cotyledons of soybean seedlings. *Plant Physiol.* 70:108-112.
- Lindemann, W. C., G. E. Ham and G. W. Randall. 1982. Soil compaction effects on soybean nodulation,  $N_2(C_2H_4)$  fixation and seed yield. *Agron. J.* 74: 307-311.
- Lindemann, W. C., G. W. Randall and G. E. Ham. 1982. Tillage effects on soybean nodulation,  $N_2(C_2H_4)$  fixation, and seed yield. *Agron. J.* 74: 1067-1070.
- Lyon, G. D. and P. Albersheim. 1982. Host-pathogen interactions. XXI. Extraction of a heat-labile elicitor of phytoalexin accumulation from frozen soybean stems. *Plant Physiol.* 70:406-409.
- Mahlstede, J. P. 1982. Future of public varieties. *Iowa Certified Seed News.* May-June 1982. pp. 2-4.
- Munavar, F. and A. G. Wollum II. 1982. Response of soybean plants to high root temperature as affected by plant cultivar and *Rhizobium* strain. *Agron. J.* 74:138-142.
- Marcus-Wynne, L. and D. W. Rains. 1982. Simultaneous measurements of  $NH_4^+$  absorption and  $N_2$  fixation by *Glycine max* L. response to temperature, pH and external nitrogen concentration. *Plant Physiol.* 69:460-464.
- Markhart, A. H. III. 1982. Penetration of soybean root systems by abscisic acid isomers. *Plant Physiol.* 69:1350-1352.
- Marshall, D. R. and P. Broue. 1981. The wild relatives of crop plants indigenous to Australia and their use in plant breeding. *J. Austral. Inst. Agric. Sci.* 1981:149-154.

- Masamune, T., M. Anetai, M. Takasugi and N. Katsui. 1982. Isolation of a natural hatching stimulus, glycinoeclepin A, for the soybean cyst nematode. *Nature* 297:495-496.
- Mason, H. L., W. R. Fehr, W. F. Cady, J. B. Bahrenfus and B. K. Voss. 1981. Iowa soybean yield test report. Cooperative Extension Service AG 18-1 Dec. 1981.
- Mason, S. C., J. J. Vorst, B. J. Hankins and D. A. Holt. 1982. Standard, cold, and tetrazolium germination tests as estimators of field emergence of mechanically damaged soybean seed. *Agron. J.* 74:546-550.
- McCann, J., V. D. Luedders and V. H. Dropkin. 1982. Selection and reproduction of soybean cyst nematodes on resistant soybeans. *Crop Sci.* 22: 78-80.
- McGee, D. C. 1981. Soybean seed health. Full color pamphlet Cooperative Extension Service Pm-990, 4 pages.
- Mikami, B., S. Aibara and Y. Morita. 1982. Distribution and properties of soybean  $\beta$ -amylase isozymes. *Agric. Biol. Chem.* 46:943-953.
- Miller, A. R. and L. W. Roberts. 1982. Regulation of tracheary element differentiation by exogenous L-methionine in callus of soya bean culti-vars. *Ann. Bot.* 50:111-116.
- Miller, W. A. and K. W. Roy. 1982. Effects of benomyl on the colonization of soybean leaves, pods and seeds by fungi. *Plant Dis.* 66:918-920.
- Minor, H. C. and E. H. Pascal. 1982. Variation in storability of soybeans under simulated tropical conditions. *Seed Sci. Technol.* 10:131-139.
- Moore, D. L., R. M. Lister, T. S. Abney and K. L. Athow. 1982. Evaluation of virus contents in soybean by enzyme-linked immunosorbent assay. *Plant Dis.* 66:790-793.
- Newell, C. A. 1981. Distribution of *Glycine tabacina* (Labill.) Benth. in the West-central Pacific. *Micronesia* 17(1-2):59-65.
- 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.
- Nickell, C. D., F. W. Schwenk and W. T. Schapaugh, Jr. 1982. Registration of Douglas soybean. *Crop Sci.* 22:160.
- Noel, K. D., M. Carneol and W. J. Brill. 1982. Nodule protein synthesis and nitrogenase activity of soybeans exposed to fixed nitrogen. *Plant Physiol.* 70:1236-1241.
- Nooden, L. D. and B. J. Murray. 1982. Transmission of the monocarpic senescence signal via the xylem in soybean. *Plant Physiol.* 69:754-756.

- Ogbuehi, S. N. and J. R. Brandle. 1982. Influence of windbreak-shelter on soybean growth, canopy structure, and light relations. *Crop Sci.* 22: 269-273.
- O'Keefe Van Der Linden, J. 1981. Soybean honey production in Iowa. *Am. Bee J.* 121:723-725, 731.
- O'Neill, S. C. and A. C. Leopold. 1982. An assessment of phase transitions in soybean membranes. *Plant Physiol.* 70:1405-1409.
- Osmond, D. L., R. F. Wilson and C. D. Raper, Jr. 1982. Fatty acid composition and nitrate uptake of soybean roots during acclimation to low temperature. *Plant Physiol.* 70:1689-1693.
- Palmer, R. G., M. C. Albertsen and C. W. Johns. 1983. Pollen movement to two male-sterile soybean mutants grown in two locations. *J. Hered.* 74: 55-57.
- Parrish, D. J., A. C. Leopold and M. A. Hanna. 1982. Turgor changes with accelerated aging of soybeans. *Crop Sci.* 22:666-669.
- Pearen, J. R. and D. J. Hume. 1982. Non-destructive estimation of <sup>14</sup>C in soybeans immediately after labelling. *Crop Sci.* 22:669-671.
- Peterson, D. J. and H. H. Edwards. 1982. Effects of temperature and leaf wetness period on brown spot disease of soybeans. *Plant Dis.* 66:995-998.
- Philips, D. V. and H. R. Boerma. 1982. Two genes for resistance to Race 5 of *Cercospora sojina* in soybeans. *Phytopathology* 72:764-766.
- Polacco, J. C. and R. B. Sparks, Jr. 1982. Patterns of urease synthesis in developing soybeans. *Plant Physiol.* 70:189-194.
- Polacco, J. C., A. L. Thomas and P. J. Bledsoe. 1982. A soybean seed urease-null produces urease in cell culture. *Plant Physiol.* 69:1233-1240.
- Provvidenti, R., D. Gonsalves and P. Ranalli. 1982. Inheritance of resistance to soybean mosaic virus in *Phaseolus vulgaris*. *J. Hered.* 73: 302-303.
- Pulver, E. L., F. Brockman and H. C. Wien. 1982. Nodulation of soybean cultivars with *Rhizobium* spp. and their response to inoculation with *R. japonicum*. *Crop Sci.* 22 1065-1070.
- Pueppke, S. G. and T. Hymowitz. 1982. Screening of the genus *Glycine* subgenus *Glycine* for the 120,000 Dalton seed lectin. *Crop Sci.* 22:558-560.
- Pueppke, S. G., U. K. Benny and T. Hymowitz. 1982. Soybean lectin from seeds of the wild soybean, *Glycine soja* Seib. & Zucc. *Plant Sci. Lett.* 26:191-197.
- Ralston, Edward J. and John Imsande. 1982. Entry of oxygen and nitrogen into intact soybean nodules. *J. Exp. Bot.* 33:208-214.
- Reicosky, D. C., T. C. Kaspar and H. M. Taylor. 1982. Diurnal relationship between evapotranspiration and leaf water potential of field-grown soybeans. *Agron.* 74:667-673.

- Reicosky, D. A., J. H. Orf and C. Poneleit. 1982. Soybean germplasm evaluation for length of the seed filling period. *Crop Sci.* 22:319-322.
- Reicosky, D. C., H. R. Rowse, W. K. Mason and H. M. Taylor. 1982. Effect of irrigation and row spacing on soybean water use. *Agron. J.* 74: 958-964.
- Rennie, R. J., S. Dubetz, J. B. Bole and H. H. Muendel. 1982. Dinitrogen fixation measured by  $^{15}\text{N}$  isotope dilution in two Canadian soybean cultivars. *Agron. J.* 74:725-730.
- Reynolds, P. H. S., M. J. Boland, D. G. Blevins, K. R. Schubert and D. D. Randall. 1982. Enzymes of amide and ureide biogenesis in developing soybean nodules. *Plant Physiol.* 69:1334-1338.
- Robacker, D. C., P. K. Flottum, D. Sammataro and E. H. Erickson. 1982. Why soybeans attract honey bees. *Am. Bee J.* 481-485.
- Robinson, M. L. and G. M. Carman. 1982. Solubilization of microsomal-associated phosphatidylinositol synthase from germinating soybeans. *Plant Physiol.* 69:146-149.
- Rose, J. L., J. A. G. Irwin, M. J. Ryley, P. W. Langdon and L. B. Jenner. 1982. Reaction of soybean cultivars to races of *Phytophthora megasperma* f. sp. *glycinea* present in Queensland. *Aust. J. Agric. Res.* 33:763-771.
- Roy, K. W. 1982. Seedling diseases caused in soybean by species of *Colletotrichum* and *Glomerella*. *Phytopathology* 72:1093-1096.
- Roy, K. W. and W. A. Miller. 1983. Soybean stem canker incited by isolates of *Diaporthe* and *Phomopsis* spp. from cotton in Mississippi. *Plant Dis.* 67:135-137.
- Rufty, T. W., C. D. Raper, Jr. and W. A. Jackson. 1982. Nitrate uptake, root and shoot growth and ion balance of soybean plants during acclimation to root-zone acidity. *Bot. Gaz.* 143:5-14.
- Sabinski, F., R. H. Barchhaus, H. G. Fromme and F. Spener. 1982. Dynamics of galactolipids and plastids in nonphotosynthetic cells of *Glycine max* suspension culture. A morphological and biochemical study. *Plant Physiol.* 70:610-615.
- Sanford, J. O. 1982. Straw and tillage management practices in soybean-wheat double cropping. *Agron. J.* 74:1032-1035.
- Sale, P. W. G. and L. C. Campbell. 1982. Late senescence oil losses in soybeans. *Crop Sci.* 22:1189-1192.
- Saliba, M. R., L. E. Schrader, S. S. Hirano and C. D. Upper. 1982. Effects of freezing field-grown soybean plants at various stages of podfill on yield and seed quality. *Crop Sci.* 22:73-78.

- Sapra, V. U., T. Mebrahtu and L. M. Mugwira. 1982. Soybean germplasm and cultivar aluminum tolerance in nutrient solution and Bladen clay loam soil. *Agron. J.* 68:687-690.
- Secor, J., D. M. Ford and R. Shibles. 1982. Ontogenetic changes in ribulose-1,5-biphosphate carboxylase-oxygenase activity in soybean leaves. *Plant Sci. Lett.* 27:147-154.
- Secor, J., D. R. McCarty, R. Shibles and D. E. Green. 1982. Variability and selection for leaf photosynthesis in advanced generations of soybeans. *Crop Sci.* 22:255-259.
- N. Seyedin, J. S. Burris, C. E. LaMotte and I. C. Anderson. 1982. Temperature-dependent inhibition of hypocotyl elongation in some soybean cultivars. I. Localization of ethylene evolution and role of cotyledons. *Plant Cell Physiol.* 23:427-431.
- Singh, B. B. and J. K. Mligo. 1981. Free nodulation of local soybean lines in Tanzania. *Crop Res. Bull.* 1(1):24-26.
- Skokut, T. A., J. E. Varner, J. Schaefer, E. O. Stejskal and R. A. McKay. 1982. [ $^{15}\text{N}$ ] NMR determination of asparagine and glutamine nitrogen utilization for synthesis of storage protein in developing cotyledons of soybean in culture. *Plant Physiol.* 69:308-313.
- Skokut, T. A., J. E. Varner, J. Schaefer, E. O. Stejskal and R. A. McKay. 1982.  $^{15}\text{N}$ - and  $[^{13}\text{C}]$  NMR determination of utilization of glycine for synthesis of storage protein in the presence of glutamine in developing cotyledons of soybean. *Plant Physiol.* 69:314-316.
- Skorupska, H. and J. Nawracala. 1980. Observation of pollen grains of soybean plants in the male-sterile line Urbana  $ms_1$ . *Genet. Polon.* 21: 63-68.
- Snyder, R. L., R. E. Carlson and R. H. Shaw. 1982. Yield of indeterminate soybeans in response to multiple periods of soil-water stress during reproduction. *Agron. J.* 74:855-859.
- Spielman, A., P. Schürmann and E. Stutz. 1982. Gel electrophoretic characterisation of protein fractions from soybean during seed development. *Plant Sci. Lett.* 24:137-145.
- Starzinger, E. K., S. H. West and K. Hinson. 1982. An observation on the relationship of soybean seed coat colour to viability maintenance. *Seed Sci. Technol.* 10:301-305.
- Stelly, D. M. and R. G. Palmer. 1982. Variable development in anthers of partially male-sterile soybeans. *J. Hered.* 73:101-108.
- St. Martin, S. K. 1982. Effective population size for the soybean improvement program in maturity groups 00 to IV. *Crop Sci.* 22:151-152.
- Streeter, J. G. 1982. Synthesis and accumulation of nitrite in soybean nodules supplied with nitrate. *Plant Physiol.* 69:1429-1434.

- Sumarno and W. R. Fehr. 1982. Response to recurrent selection for yield in soybeans. *Crop Sci.* 22:295-299.
- Sullivan, D., N. Brisson, B. Goodchild and D. P. S. Verma. 1982. Molecular cloning and organization of two leghaemoglobin genomic sequences of soybean. *Nature* 289:516-518.
- Swamy, G. S. and D. T. N. Pillay. 1982. Characterization of *Glycine max* cytoplasmic, chloroplastic and mitochondrial tRNAs and synthetases for phenylalanine, tryptophan and tyrosine. *Plant Sci. Lett.* 25:73-84.
- Tajima, S. and T. A. LaRue. 1982. Enzymes for acetaldehyde and ethanol formation in legume nodules. *Plant Physiol.* 70:388-392.
- Tan-Wilson, A. L., B. R. Rightmire and K. A. Wilson. 1982. Different rates of metabolism of soybean proteinase inhibitors during germination. *Plant Physiol.* 70:493-497.
- Tan-Wilson, A. L. and K. A. Wilson. 1982. Nature of proteinase inhibitors released from soybeans during imbibition and germination. *Phytochemistry* 21:1547-1551.
- Taylor, B. H. and C. E. Caviness. 1982. Hilum color variation in soybean seed with imperfect black genotype. *Crop Sci.* 22:682-683.
- Thomas, D. A. and M. André. 1982. The response of oxygen and carbon dioxide exchanges and root activity to short term water stress in soybean. *J. Exp. Bot.* 33:393-405.
- Thorne, J. H. 1982. Characterization of the active sucrose transport system of immature soybean embryos. *Plant Physiol.* 70:953-958.
- Thorne, J. H. 1982. Temperature and oxygen effects on <sup>14</sup>C-photosynthate unloading and accumulation in developing soybean seeds. *Plant Physiol.* 69:48-53.
- Tilton, V. R. and N. R. Lersten. 1982. An annotated bibliography and subject index on female reproductive anatomy and fertilization in angiosperms. *Proc. Iowa Acad. Sci.* 80:23-43.
- Tooley, P. W. and C. R. Grau. 1982. Identification and quantitative characterization of rate-reducing resistance to *Phytophthora megasperma* f. sp. *glycinea* in soybean seedlings. *Phytopathology* 72:727-733.
- Touchton, T. J. and J. W. Johnson. 1982. Soybean tillage and planting method effects on yield of double-cropped wheat and soybeans. *Agron. J.* 74:57-59.
- Tully, R. E. 1982. A new technique for measuring permeability of dry soybean pods to water. *Crop Sci.* 22:437-440.
- Tyler, D. D. and J. R. Overton. 1982. No-tillage advantages for soybean seed quality during drought stress. *Agron. J.* 74:344-347.

- Uratsu, S. L., H. H. Keyser, D. F. Weber and S. T. Lim. 1982. Hydrogen uptake (HUP) activity of *Rhizobium japonicum* from major U.S. soybean production areas. *Crop Sci.* 22:600-602.
- Vendeland, J. S., D. K. Bruck and T. R. Sinclair. 1982. Differential starch accumulation in the leaf mesophyll layers of soybean. *Crop Sci.* 22: 1251-1252.
- Vendeland, J. S., T. R. Sinclair, S. C. Spaeth and P. M. Cortes. 1982. Assumptions of plastochnon index: Evaluation with soya bean under field drought conditions. *Ann. Bot.* 50:673-680.
- Vig, K. 1982. Soybean (*Glycine max* (L.) Merrill) as a short-term assay for study of environmental mutagens. A report of the U.S. Environmental Protection Agency Gene-Tox program. *Mutat. Res.* 99:339-347.
- Voldeng, H. D., J. F. Seitzer and L. S. Donovan. 1982. Maple Presto soybeans. *Can. J. Plant Sci.* 2:501-503.
- Walker, A. K. and R. L. Cooper. 1982. Adaptation of soybean cultivars to low-yield environments. *Crop Sci.* 22:678-680.
- Ward, E. W. B. and G. Lazarovits. 1982. Temperature-induced changes in specificity in the interaction of soybeans with *Phytophthora megasperma* f. sp. *glycinea*. *Phytopathology* 72:826-830.
- Weaver, P. B. and J. R. Wilcox. 1982. Heritabilities, gains from selection, and genetic correlations for characteristics of soybeans grown in two row spacings. *Crop Sci.* 22:625-629.
- Wells, R., L. L. Schulze, D. A. Ashley, H. R. Boerma and R. H. Brown. 1982. Cultivar differences in canopy apparent photosynthesis and their relationship to seed yield in soybeans. *Crop Sci.* 22:886-890.
- Wilson, D. O., F. C. Boswell, K. Ohki, M. B. Parker, L. M. Shuman and M. D. Jellum. 1982. Changes in soybean seed oil and protein as influenced by manganese nutrition. *Crop Sci.* 22:948-952.
- Wittenbach, V. A. 1982. Effect of pod removal on leaf senescence in soybeans. *Plant Physiol.* 70:1544-1548.
- Wofford, T. J. and F. L. Allen. 1982. Variation in leaflet orientation among soybean cultivars. *Crop Sci.* 22:999-1004.
- Wolf, W. J., F. L. Baker and R. L. Bernard. 1981. Soybean seed-coat structural features: pits, deposits and cracks. *Scanning Electron Microsc.* 3:531-544.
- Xu, Z.-H., M. R. Davey and E. C. Cocking. 1982. Callus formation from root protoplasts of *Glycine max* (soybean). *Plant Sci. Lett.* 24:105-110.
- Yabuuchi, S., R. M. Lister, B. Axelrod, J. R. Wilcox and N. C. Nielsen. 1982. Enzyme-linked immunosorbent assay for the determination of lipoxygenase isoenzymes in soybean. *Crop Sci.* 22:333-337.

- Yasuda, K. 1979. General situation of vegetable proteins for foods in Japan. J. Am. Oil Chem. Soc. 56:338-340.
- Yost, R. S. and R. L. Fox. 1982. Influence of mycorrhizae on the mineral contents of cowpea and soybean grown in an oxisol. Agron. J. 74:475-481.
- Young, D. H., H. Köhle and H. Kauss. 1982. Effect of chitosan on membrane permeability of suspension-cultured *Glycine max* and *Phaseolus vulgaris* cells. Plant Physiol. 70:1449-1454.
- Young, L. D. 1982. Reproduction of differentially selected soybean cyst nematode populations on soybeans. Crop Sci. 22:385-388.
- Zar, B., J. W. Jones, K. J. Boote and L. C. Hammond. 1982. Total resistance to water flow in field soybeans: II. Limiting soil moisture. Agron. J. 74:99-105.
- Zeiher, C., D. B. Egli, J. E. Leggett and D. A. Reicosky. Cultivar differences in N redistribution in soybeans. Agron. J. 74:375-379.
- Zhang Zheng-Dong, Ma Gui-Zhi, Li Liang-Bi and Zhou Pei-Zhen. 1981. The molecular arrangement of the light-harvesting chlorophyll a/b protein of soybean thylakoid. Photobiochem. Photobiophys. 2:329-336.
- Zinnen, T. M. and J. B. Sinclair. 1982. Thermotherapy of soybean seeds to control seedborne fungi. Phytopathology 72:831-834.
- Zurfluh, L. L. and T. J. Guilfoyle. 1982. Auxin- and ethylene-induced changes in the population of translatable messenger RNA in basal sections and intact soybean hypocotyl. Plant Physiol. 69:338-340.
- Zurfluh, L. L. and T. J. Guilfoyle. 1982. Auxin-induced changes in the population of translatable messenger RNA in elongating sections of soybean hypocotyl. Plant Physiol. 69:322-327.