BIBLIOGRAPHY

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Adams, C.A. and Novellie, L. (1975) Composition and structure of spherosomes isolated from ungerminated seeds of Sorghum biocolor (L. Moench.) Plant Physiol. 55, 1-6.

Afridi, M.M.R.K. and Hewitt, E.J. (1965) The inducible formation and stability of nitrate reductase in higher plants II Effect of environmental factors, antimetabolites and amino acids on induction. J. Exp. Bot. 16, 628-645.

Albaum, H.G. and Cohen, P.P. (1943) Transamination and protein synthesis in germinating oat seedlings. J. Biol. Chem. 149, 19-27.

Altman, A. (1982 a) Retardation of radish leaf senescence by polyamines. Physiol. Plant. 54, 189-193.

Altman, A. (1982 b) Polyamines and wounded storage tissues : Inhibition of RNase activity and solute leakage. Physiol. Plant. 54, 194-198.

Altman, A. and Bachrach, U. (1981) Involvement of polyamines in plant growth and senescence : In 'Advances in polyamine research'. Vol. 3 (Caldarera, C.M., Zappia, V.A and Bachrach, U. eds.) Raven Press, New York. pp. 365-375.

Altman, A., Friedman, R. and Levin, R.N. (1982) Arginine and ornithine decarboxylase, the polyamine biosynthetic enzymes of Mung bean seedlings. Plant Physiol. 69, 876-879.

Altman, A., Friedman, R. and Levin, N. (1983 a) Alternative metabolic pathways for polyamine biosynthesis in plant development : In 'Advances in polyamine research'. Vol. 4 (Bachrach, U., Kaye, A. and Chayen, R. eds.) Raven Press, New York. pp. 395-408).

Altman, A., Friedman, R. and Levin, N. (1983 b) : In 'Proc. 11th International Conference on Plant Growth Substances'. cf. Altman, A., Friedman, R. and Levin, N. (1983a) Alternative metabolic pathways for polyamine biosynthesis in plant development : In 'Advances in polyamine research'. Vol. 4 (Bachrach, U., Kaye, A. and Chayen, R. eds.) Raven Press, New York. pp. 395-408).

Altman, A., Kaur-Sawhney, R. and Galston, A.W. (1977) Stabilization of oat leaf protoplasts through polyamine-mediated inhibition of senescence. Plant Physiol. 60, 570-574.

Ames, B.N. and Dubin, D.T. (1960) The role of polyamines in the neutralization of bacteriophage deoxyribonucleic acid. J. Biol. Chem. 235, 769-775.

Anguillesi, M.C., Grilli, J. and Floris, C. (1980) Rate of synthesis of spermine and spermidine in germinating seeds of Glycine, Helianthus and Triticum. Planta 148, 24-27.

Apelbaum, A., Burgoon, A.C., Anderson, J.D., Lieberman, M., Ben-Crie, R. and Mattoo, A.K. (1981) Polyamines inhibit

biosynthesis of ethylene in higher plants. Plant Physiol. 68, 453-456.

Apelbaum, A., Ickeson, I., Burgoon, A.C. and Lieberman, M. (1982) Inhibition by polyamines of macromolecular synthesis and its implication for ethylene production and senescence processes. Plant Physiol. 70, 1221-1223.

Archer, M., Clark, S.D., Thilly, J.E. and Tannenbaum, S.R. (1971) Environmental nitroso compounds : reaction of nitrite with creatine and creatinine. Science 174, 1341-1343.

Ashley, D.A., Jackson, W.A. and Volk, R.J. (1975) Nitrate uptake and assimilation by wheat seedlings during initial exposure of nitrate. Plant Physiol. 55, 1102-1106.

Ashton, F.M. (1976) Mobilization of storage proteins of seeds. Ann. Rev. Plant Physiol. 27, 95-117.

Aslam, M. (1981) Reevaluation of anaerobic nitrite production as an index for the measurement of metabolic pool of nitrate. Plant Physiol. 68, 305-308.

Aslam, M., Huffaker, R.C., Rains, D.W. and Prasad Rao, K. (1979) Influence of light and ambient CO_2 concentration on nitrate assimilation by intact barley seedlings. Plant Physiol. 63, 1205-1209.

Aslam, M. and Oaks, A. (1975) Effect of glucose on the induction of nitrate reductase in corn roots. Plant Physiol. 56, 634-639.

Aslam, M., Oaks, A. and Huffaker, R.C. (1976) Effect of light and glucose on the induction of nitrate reductase and on the distribution of nitrate in etiolated barley leaves. Plant Physiol. 58, 588-591.

Atmar, V.J., Daniels, G.R. and Kuehn, G.D. (1978) Polyamine stimulation of phosphorylation of nonhistone acidic proteins in nuclei and nucleoli from Physarum polycephalum. Eur. J. Biochem. 90, 29-37.

Auberger, P., Samson, M., Le Cam, G. and Le Cam, A. (1983) Effects of polyamines on cyclic AMP-mediated stimulation of amino acid transport in isolated rat hepatocytes. J. Cell Physiol. 117, 204-210.

Bachrach, U. (1973) ed. 'Functions of naturally occurring polyamines'. Academic Press, New York.

Bachrach, U. and Cohen, I. (1961) Spermidine in the bacterial cell. J. Gen. Microbiol. 26, 1-9.

Bagni, N. (1966) Aliphatic amines and a growth factor of coconut milk as stimulating cellular proliferation of Helianthus tuberosus (Jerusalem artichoke) in vitro. Experientia 22, 732-733.

Bagni, N. (1967) Identificazione di alcuni factori di crescita nel succo di pomodero. G. Botanico Ital. 101, 81-85.

Bagni, N. (1968) Aumento di RNA indotto da poliammine durante le prime fasidi crescita di Helianthus tuberosus. G. Botanico. Ital. 102, 546-547.

Bagni, N. (1970) Metabolic changes of polyamines during the germination of Phaseolus vulgaris. New Phytol. 69, 159-164.

Bagni, N. (1979) Polyamines as sole nitrogen sources for Helianthus tuberosus : In 'Nitrogen assimilation of plants' (Hewitt, E.J. and Cutting, C.V. eds.), Academic Press, New York. pp. 585-588.

Bagni, N., Caldarera, C.M. and Moruzzi, G. (1967) Spermine and Spermidine distribution during wheat growth. Experientia 23, 139-143.

Bagni, N., Corsini, E. and Serafini-Fracassini, D. (1971) Growth factors and nucleic acid synthesis in Helianthus tuberosus I Reversal of actinomycin-D inhibition by spermidine. Plant Physiol. 24, 112-117.

Bagni, N. and Serafini-Fracassini, D. (1974) The role of polyamines as growth factors in higher plants and their mechanism of action : In 'Plant growth substances'. Hirokawa and Co., Tokyo.

Bagni, N. and Serafini-Fracassini, D. (1979) Polyamines and plant tumours. Ital. J. Biochem. 28, 392-394.

Bagni, N.,Serafini-Fracassini, D. and Torrigiani, P. (1981 a) Polyamines and growth in higher plants : In 'Advances in polyamine research' Vol. 3 (Caldarera, C.M., Zappia, V.A. and Bachrach, U. eds.) Raven Press, New York pp. 377-388.

Bagni, N., Serafini-Fracassini, D. and Torrigiani, P. (1982) Polyamines and cellular growth processes in higher plants : In 'Plant growth substances' (Wareing, P.F. ed.) Academic Press, New York. pp. 473-482.

Bagni, N., Torrigiani, P. and Barbieri, P. (1981 b) Effects of various inhibitors of polyamine synthesis on growth of Helianthus tuberosus. Med. Biol. 59, 403-409.

Bagni, N., Torrigiani, P. and Barbieri, P. (1983) In vitro and in vivo effect of ornithine and arginine decarboxylase inhibitors of plant tissue culture : In 'Advances in polyamine research' Vol. 4 (Bachrach, U., Kaye, A.M. and Chayen, R. eds.) Raven Press, New York. pp. 176-192.

Barash, I., Mor, H. and Sadon, T. (1975) Evidence for ammonium dependent de novo synthesis of glutamate dehydrogenase in detached oat leaves. Plant Physiol. 56, 856-858.

Barash, I., Sadon, T. and Mor, H. (1973) Induction of a specific isozyme of glutamate dehydrogenase by ammonia in oat leaves. Nature (New Biol.) 244, 150-152.

Barash, I., Sadon, T. and Mor, H. (1974) Relations of glutamate dehydrogenase level to free amino acids, amides and ammonia in excised oat leaves. Plant Cell Physiol. 15, 563-566.

Barnes, R.L. (1962) Formation of γ-guanidinobutyric acid in pine tissues. Nature 193, 781.

Bayley, J.M., King, J. and Gamborg, O.L. (1972) Effect of the source of inorganic nitrogen on growth and enzymes of nitrogen assimilation in soybean and wheat cells in suspension cultures. Planta 105, 15-24.

Beatriz, E., Gomez-Lepe, Y., Stadelman, O.Y., Palta, J.P. and Stadelman, E.J. (1979) Effect of octylguanidine on cell permeability and other protoplasmic properties of Alium cepa epidermal cells. Plant Physiol. 64, 131-137.

Beevers, L. (1968) Protein degradation and proteolytic activity in the cotyledons of germinating pea seeds (Pisum sativum). Phytochemistry 7, 1837-1844.

Beevers, L., Flesher, D. and Hageman, R.H. (1964) Studies on the pyridine nucleotide specificity of nitrate reductase in higher plants and its relationship to sulfhydryl level. Biochim. Biophys. Acta 89, 453-464.

Beevers, L. and Hageman, R.H. (1969) Nitrate reduction in higher plants. Ann. Rev. Plant Physiol. Vol. 20, 495-522.

Beevers, L. and Hageman, R.H. (1972) The role of light in nitrate metabolism in higher plants. Photophysiol. 7, 85-113.

Beevers, L. and Storey, R. (1976) Glutamate synthetase in developing cotyledons of Pisum sativum. Plant Physiol. 57, 862-866.

Bentley, K.W. and Truscoe, R. (1969) Effect of guanidine derivatives on urate oxidase activity. Enzymologia 37, 285-313.

Berlin, J. (1981) Formation of putrescine and cinnamoyl putrescines in tobacco cell cultures. Phytochemistry 20, 53-55.

Bernheim, F. (1970) The effects of spermine, spermidine, calcium chloride and cysteine hydantoin on the shrinking and swelling of cells of a strain of Pseudomonas aeruginosa exposed to heat or streptomycin. Microbios. 2, 261-267.

Bertossi, F., Bagni, N., Moruzzi, G. and Caldarera, C.M. (1965) Spermine as a new growth-promoting substance for Helianthus tuberosus (Jerusalem artichoke) in vitro. Experientia 21, 80-83.

Bidwell, R.G.S. and Durzan, D.J. (1975) Some recent aspects of nitrogen metabolism : In 'Historical and current aspects of plant physiology'. (A symposium honouring Steward, F.C.)

Davies, P.J. ed. The New York State College of Agriculture and Life Sciences at Cornell University, Ithaca, New York. pp. 152-225.

Birecka, H., DiNolfo, T.E., Martin, W.B. and Frohlich, M.W. (1984) Polyamines and leaf senescence in pyrrolizidine alkaloid-bearing Heliotropium plants. Phytochemistry 23, 991-997.

Boldt, A., Miersch, J. and Reinbothe, H. (1971) The metabolism of agmatine in fruit bodies of the fungus Panus tigrinus (Bull. ex Fr. Sing.) Phytochemistry 10, 731-738.

Bourne, W.F. and Miflin, B.J. (1970) An ATP dependent reduction of nitrate to ammonia by a cell free particulate system from barley roots. Biochem. Biophys. Res. Commun. 40, 1305-1308.

Bourne, W.F. and Miflin, B.J. (1973) Studies on nitrite reductase in barley. Planta 111, 47-56.

Buczek, J. (1979) Ammonium and potassium effect on nitrate assimilation in cucumber seedlings (Cucumis sativus cv. Monaskyrsti) Acta Soc. Bot. Pol. 48, 157-170.

Bulen, W.A. (1956) The isolation and characterization of glutamate dehydrogenase from corn leaves. Arch. Biochem. Biophys. 62, 175-178.

Butt, V. and Beevers, H. (1961) The regulation of pathways of glucose catabolism in maize roots. Biochem. J. 80, 21-27.

Butz, R.G. and Jackson, W.A.(1977) A mechanism for nitrate transport and reduction. Phytochemistry 16, 409-417.

Bycroft, B.W. and King, T.J. (1972) Crystal structure of streptolidine, a guanidine-containing amino acid. J. Chem. Soc. Chem. Communs. 1972, 652-653.

Byrde, R.J.W., Clifford, D.R. and Woodcock, K. (1962) Fungicidal activity and chemical constitution XI The activity of n-alkyl guanidine acetates. Ann. Appl. Biol. 50, 291-298.

Cabanne, F., Martin-Tanguy, J. and Martin, C. (1977) Phenolamines associees a l'induction florales et a l'etat reproducteur du Nicotiana tabacum var. xanthi n.c. Physiol. Veg. 15, 429-443.

Canvin, D.T. and Atkins, C.A. (1974) Nitrate, nitrite and ammonia assimilation by leaves : Effect of light, carbon dioxide and oxygen. Planta 116, 207-224.

Chou, K.H. and Splittstoesser, W.E. (1972) Glutamate dehydrogenase from pumpkin cotyledons. Plant Physiol. 49, 550-554.

Chrispeels, M.J. and Boulter, D. (1975) Control of storage proteins metabolism in the cotyledons of germinating mung beans : role of endopeptidase. Plant Physiol. 55 : 1031-1037.

Cocucci, S. and Bagni, N. (1968) Polyamine-inducible activation of protein synthesis in ribosomal preparation from Helianthus tuberosus tissue. Life Sci. 7, 113-120.

Cohen, E., Arad, S.S., Heimer, Y.M. and Mizrahi, Y. (1982) Participation of ornithine decarboxylase in early stages of tomato fruit development. Plant Physiol. 70, 540-543.

Cohen, S.S. (1971) ed. 'Introduction to polyamines', Prentice-Hall Inc., New York.

Cohen, S.S., Balint, R. and Sindhu, R.K. (1981) The synthesis of polyamines from methionine in intact and disrupted leaf protoplasts of virus infected Chinese cabbage. : Plant Physiol. 68, 1150-1155.

Cohen, S.S. and Lichtenstein, J. (1960) Polyamines and ribosome structure. J. Biol. Chem. 235, 2112-2116.

Cohen, S.S., Morgan, S. and Streibel, E. (1969) The polyamine content of the t-RNA of E. coli. Proc. Natl. Acad. Sci. U.S.A. 64, 669-676.

Cohen, A.S., Popovic, R.B. and Zalik, S. (1979) Effect of polyamines on chlorophyll and protein content, photochemical activity and chloroplast ultrastructure of barley leaf discs during senescence. Plant Physiol. 64, 717-720.

Coleman, R.G. and Richards, F.J. (1956) Physiological studies in plant nutrition XVIII Some aspects of nitrogen metabolism in barley and in other plants in relation to potassium deficiency. Ann. Bot. 20, 393-409.

Craddock, V.M. (1968) The reaction of N-methyl-N'-nitro-N-nitrosoguanidine with deoxyribonucleic acid. Biochem. J. 106, 921-922.

Cresswell, C.F., Hageman, R.H., Hewitt, E.J. and Hucklesby, D.P. (1965) The reduction of nitrate, nitrite and hydroxylamine to ammonia by enzymes from Cucurbita pepo L. in the presence of reduced benzyl viologen as electron donor. Biochem. J. 94, 40-53.

Cresswell, R.C. and Syrett, P.J. (1979) Ammonium inhibition of nitrate uptake by the diatom Phaeodactylum tricornutum. Plant Sci. Lett. 14, 321-325.

Croy, L.I. and Hageman, R.H. (1970) Relationship of nitrate reductase activity to grain protein production in wheat. Crop. Sci. 10, 280-285.

Dai, Y.R. and Galston, A.W. (1981) Simultaneous phytochrome-controlled promotion and inhibition of arginine decarboxylase activity in buds and coleoptiles of etiolated peas. Plant Physiol. 67, 266-269.

Dai, Y.R., Kaur-Sawhney, R. and Galston, A.W. (1982) Promotion by gibberellic acid of polyamine biosynthesis in internodes of light-grown dwarf peas. Plant Physiol. 68, 103-105.

Dalling, M.J., Halloran, G.M. and Wilson, J.H. (1975) Relation between nitrate reductase activity and grain nitrogen productivity in wheat. Aust. J. Agric. Res. 26, 1-10.

Dalling, M.J., Tolbert, N.E. and Hageman, R.H. (1972 a) Intracellular location of nitrate reductase and nitrite reductase I Spinach and tobacco leaves. Biochim. Biophys. Acta 283, 505-512.

Dalling, M.J., Tolbert, N.E. and Hageman, R.H. (1972 b) Intracellular location of nitrate reductase and nitrite reductase II Wheat roots. Biochim. Biophys. Acta 283, 513-519.

Datta, N., Rao, L.V.M., Guha-Mukherjee, S. and Sopory, S.K. (1983) Activation and stabilization of nitrate reductase by NADH in wheat and maize. Phytochemistry 22, 821-824.

Deletang, J. (1974) Presence de caffeoyl putrescine de caffeoyl spermidine et de dicaffeoyl spermidine chez Nicotiana tabacum. Ann. Tabac. (Sect. 2) 11, 123-126.

Dhindsa, R.S., Dhindsa, P.P. and Thorpe, T.R. (1981) Leaf senescence : correlated with increased levels of membrane permeability and lipid peroxidation and decreased levels of suproxide dismutase and catalase. J. Exp. Bot. 33, 93-101.

Dougall, D.K. and Bloch, J. (1976) A survey of the presence of glutamate synthase in plant cell suspension culture. Can. J. Bot. 54, 2924-2927.

Dumortier, F., Flores, H.E., Shekhawat, H.S. and Galston, A.W. (1983) Gradients of polyamines and their biosynthetic enzymes in coleoptiles and roots of corn. Plant Physiol. 72, 915-918.

Durzan, D.J. (1968 a) Nitrogen metabolism of Picea glauca I Seasonal changes of free amino acids in buds, shoot apices and buds during the onset of dormancy. Can. J. Bot. 46, 909-919.

Durzan, D.J. (1968 b) Nitrogen metabolism of Picea glauca II Diurnal changes of free amino acids, amides and guanidino compounds in roots, buds and leaves during the onset of dormancy of white spruce saplings. Can. J. Bot. 46, 921-928.

Durzan, D.J. and Steward, F.C. (1967) The nitrogen metabolism of Picea glauca (Moench) Voss and Pinus banksiana Lamb. as influenced by mineral nutrition. Can. J. Bot. 45, 696-710.

Ebell, L.F. and McMullan, E.E. (1970) Nitrogenous substances associated with differential cone production responses of Douglas fir to ammonium and nitrate fertilization. Can. J. Bot. 48, 2169-2177.

Echevarria, C., Maurino, S.G. and Maldonado, J.M. (1984) Reversible inactivation of maize leaf nitrate reductase. Phytochemistry 23, 2155-2158.

Eck, H.V. and Hageman, R.H. (1974) Nitrate reductase activity in Sudangrass cultivars. Crop Sci. 14, 283-287.

Elrich, G.L. and Hageman, R.H. (1973) Nitrate reductase activity and its relationship to accumulation of vegetative and grain nitrogen in wheat (Triticum aestivum). Crop Sci. 13, 59-66.

Emes, M.J. and Fowler, M.W. (1978) The intracellular location of the enzymes of nitrate assimilation in the apices of seedling pea roots. Planta 144, 249-253.

Endo, H. and Takahashi, K. (1973) Nitrosated arginine derivative, a powerful mutagen. Biochem. Biophys. Res. Commun. 52, 254-262.

Evans, H.J. and Nason, A. (1953) Pyridine nucleotide reductase from higher plants. Plant Physiol. 28, 233-254.

Ferrari, T.E. and Varner, J.E. (1969) Substrate induction of nitrate reductase in barley aleurone layers. Plant Physiol. 44, 85-88.

Ferrari, T.E. and Varner, J.E. (1970) Control of nitrate reductase activity in barley aleurone layers. Proc. Natl. Acad. Sci. U.S.A. 65, 729-736.

Ferrari, T.E., Yoder, O.C. and Filner, P. (1973) Anaerobic nitrite production by plant cells and tissues : Evidence for two nitrate pools. Plant Physiol. 51, 423-431.

Filner, P. (1966) Regulation of nitrate reductase in cultured tobacco cells. Biochim. Biophys. Acta 118, 299-310.

Flayeh, K.A.M., Najati, S.I., Al-Delymi, A.M. and Hajar, M.A. (1984) 1,3-diaminopropane and spermidine in Cucumis sativus (cucumber). Phytochemistry 23, 989-990.

Flores, H.E. and Galston, A.W. (1982) Polyamines and plant stress. Activation of putrescine biosynthesis by osmotic shock. Science 217, 1259-1261.

Flores, H.E., Young, N.D. and Galston, A.W. (1984) Polyamine metabolism and plant stress : In 'Cellular and

molecular biology of plant stress' UCLA symposia on molecular and cellular biology, New Series, Vol. 22 (Key, J.L. and Tsune, K. eds.) Alan, R. Liss. Inc. New York.

Forest, J.C. and Wightman, F. (1971) Metabolism of amino acids in plants I Changes in the soluble amino acid fractions of bushbean seedlings (Phaseolus vulgaris L.) and the development of transaminase activities. Can. J. Biochem. 49, 709-720.

Fowden, L. (1979) Nitrogen : The keystone to plant growth and metabolism : In 'Nitrogen assimilation of plants' (Hewitt, E.J. and Cutting, C.V. eds) Academic Press, New York. pp. 1-14.

Friedman, R., Altman, A. and Bachrach, U. (1982) Polyamines and root formation in mung bean hypocotyl cuttings. Plant Physiol. 70, 844-848.

Fuhrer, J., Kaur-Sawhney, R., Shih, L-M. and Galston, A.W. (1982) Effects of exogenous 1,3-diaminopropane and spermidine on senescence of oat leaves II Inhibition of ethylene biosynthesis and possible mode of action. Plant Physiol. 70, 1597-1600.

Gale, E.F. (1946) The bacterial amino acid decarboxylases. Adv. Enz. 6, 1-3.

Gallina, C., Marta, C., Colombo, C. and Romeo, A. (1971) Capreomycidine and 3-guanidinoproline from viomycidine. Tetrahedron 27, 4681-4685.

Galston, A.W. (1983) Polyamines as modulators of plant development. Bioscience 33, 382-388.

Galston, A.W., Altman, A., and Kaur-Sawhney, R. (1978) Polyamines, ribonuclease and the improvement of oat leaf protoplasts. Plant Sci. Lett. 11, 69-79.

Galston, A.W. and Kaur-Sawhney, R. (1982) Polyamines : Are they a new class of plant growth regulators? In 'Plant growth substances (Wareing, P.F. ed.) Academic Press, New York. pp. 451-461.

Gandhi, A.P., Sawhney, S.K. and Naik, M.S. (1973) Activation of nitrate reductase from rice seedlings by NADH. Biochem. Biophys. Res. Commun. 55, 291-296.

Gary-Bobo, C.M. (1970) Effect of Ca^{2+} on the water and non-electrolyte permeability of phospholipid membranes. Nature 228, 1101.

Goldmann, A., Thomas, D.W. and Morel, G. (1969) Sur la structure de la nopaline metabolite anormal de certaines tumeurs de crown gall. C.R. Acad. Sci. Paris 268, 852-854.

Goldsmith, J., Livoni, J.P., Norberg, C.L. and Segel, I.H. (1973) Regulation of nitrate uptake in Penicillium chryosgenum by ammonium ion. Plant Physiol. 52, 362-367.

Gomez-Puyou, A., Sandoval, F., Lotina, B. and Tuena De Gomez-Puyou, M. (1973) Guanidine sensitive transport of sodium and potassium in mitochondria. Biochem. Biophys. Res. Commun. 52, 74-78.

Goodman, P.J., Fothergill, M. and Hughes, D.M. (1974) Variation in nitrate reductase, nitrite and nitrite reductase in some grasses and cereals. Ann. Bot. 38, 31-37.

Goren, R., Palavan, N. and Galston, A.W. (1982 a) Changes in polyamine titer in etiolated pea seedling following red light treatment. Plant Cell Physiol. 23, 19-26.

Goren, R., Palavan, N. and Galston, A.W. (1982 b) Separating phytochrome effects on arginine decarboxylase activity from its effect on growth. J. Plant Growth Regulation 1, 61-74.

Granstedt, R.C. and Huffaker, R.C. (1982) Identification of the leaf vacuole as a major nitrate storage pool. Plant Physiol. 70, 410-413.

Guggenheim, M. (1958) Die biogenen amine in der pflanzenwelt': In 'Encyclopedia of Plant Physiology' Vol. 8. Springer Verlag, Berlin. pp. 887-988.

Guilfoyle, T.J. and Hanson, J.B. (1973) Increased activity of chromatin-bound ribonucleic acid polymerase from soybean hypocotyl with spermidine and high ionic strength. Plant Physiol. 51, 146-148.

Hageman, R.H. (1979) Integration of nitrogen assimilation in relation to yield : In 'Nitrogen assimilation of plants' (Hewitt, E.J. and Cutting, C.V. eds.) Academic Press, New York. pp. 591-611.

Hageman, R.H. and Flesher, D. (1960) Nitrate reductase activity in corn seedlings as affected by light and nitrate content of nutrient medium. Plant Physiol. 35, 700-708.

Hageman, R.H. and Hucklseby, D.P. (1971) Nitrate reductase from higher plants. Methods in Enzymology 23, 491-503.

Hageman, R.H., Reed, A.J., Femmer, R.A., Sherrad, J.H. and Dalling, M.J. (1980) Some new aspects of the *in vivo* assay for nitrate reductase in wheat (*Triticum aestivum* L.) leaves. Plant Physiol. 65, 27-32.

Ham, R.G. (1964) Putrescine and related amines as growth factors for a mammalian cell line. Biochem. Biophys. Res. Commun. 14, 34-38.

Hardy, S.J.S. and Turncock, G. (1971) Stabilization of 70S ribosomes by spermine. Nature (New Biol.) 229, 17-19.

Harold, F.M. (1964) Stabilization of Streptococcus faecalis protoplasts by spermine. J. Bacteriol. 88, 1416-1420.

Harper, J.E. and Hageman, R.H. (1972) Canopy and seasonal profiles of nitrate reductase in soybeans (Glycine max). Plant Physiol. 49, 146-154.

Hasnain, E.S., Khan, M.A. and Upadhyaya, K.C. (1980) Effect of polyamines on thermal damage of Chlamydomonas reinhardii protoplasts. Ind. J. Expt. Biol. 18, 1037-1040.

Hasse, K. and Schurer, K. (1962) Derivate des γ-aminobutyraldehyds and d-amino valeraldehyds. Biochim. Z. 336, 20-34.

Hatch, M.D. and Mau, S.L. (1973) Activity, location and role of aspartate aminotransferase and alanine aminotransferase isoenzymes in leaves with C-4 pathway of photosynthesis. Arch. Biochem. Biophys. 156, 195-206.

Heby, O. (1981) Role of polyamines in the control of cell proliferation and differentiation. Differentiation 19, 1-20.

Hedley, C.L. and Stoddart, J.L. (1971) Light stimulation of alanine aminotransferase activity in dark-grown leaves of Lolium tumulentum as related to chlorophyll formation. Planta 100, 309-324.

Hedley, C.L. and Stoddart, J.L. (1972) Patterns of protein synthesis in Lolium tumulentum II During seed development. J. Exp. Bot. 23, 502-510.

Heimer, Y.M., Arad, S.M. and Mizrahi, Y. (1982) Participation of ornithine decarboxylase in early stages of tomato fruit development. Plant Physiol. 70, 540-543.

Heimer, Y.M. and Filner, P. (1971) Regulation of the nitrate assimilation pathway in cultured tobacco cells III The nitrate uptake system. Biochim. Biophys. Acta 230, 362-372.

Heimer, Y.M., Mizrahi, Y. and Bachrach, U. (1979) Ornithine decarboxylase activity in rapidly proliferating plant cells. FEBS Lett. 104, 146-148.

Herbst, E.J. and Snell, E.E. (1948) Putrescine as a growth factor for Hemophilus parainfluenza. J. Biol. Chem. 176, 989-990.

Hewitt, E.J. (1975) Assimilatory nitrate-nitrite reduction. Ann. Rev. Plant Physiol. 26, 73-100.

Hewitt, E.J., Hucklesby, D.P. and Notton, B.A. (1976) Nitrate metabolism : In 'Plant Biochemistry' (Bonner, J. and Varner, J.E. eds.) Academic Press, New York. pp. 633-672.

Hewitt, E.J., Hucklesby, D.P., Mann, A.F., Notton, B.A. and Rucklidge, G.J. (1979) Regulation of nitrate assimilation in plants : In 'Nitrogen assimilation of Plants' (Hewitt, E.J. and Cutting, C.V. eds.) 1979, Academic Press, New York. pp. 255-287.

Hill, J.M. and Mann, P.J.G. (1968) Some properties of plant diamine oxidase, a copper containing enzyme : In 'Recent aspects of nitrogen metabolism of plants' (Hewitt, E.J. and Cutting, C.V. eds.) Academic Press, London. pp.149-161.

Hiwatari, Y. (1926) Uber die stickstoifhatigen Bestandteile der fruchte von Citrus grandrs Osbeck, Form Butan Hayat. J. Biochem. (Tokyo) 7, 169-173.

Hochstein, L.I. and Dalton, B.P. (1968) Factors affecting the cation requirement of a halophilic NADH dehydrogenase. Biochim. Biophys. Acta 167, 638-640.

Hog, K., Hartvigsen, M.B. and Rasmussen, O.S. (1983) Critical evaluation of the in vivo nitrate reductase assay for detection of two nitrate pools in wheat leaves. Physiol. Plant. 59, 141-147.

Hohlt, H.E., Maynard, D.M. and Barker, A.V. (1970) Ammonium tolerance of some cultivated Solanaceae. J. Am. Soc. Hort Sci. 95, 345-348.

Hsiao, T.C. (1970) Rapid changes in level of polyribosomes in Zea mays in response to water stress. Plant Physiol. 46, 281-285.

Hucklesby, D.P., Dalling, M.J. and Hageman, R.H. (1972) Some properties of two forms of nitrite reductase from corn (Zea mays) scutellum. Planta 104, 220-233.

Igarashi, K., Kashiwagi, K., Aoki, R., Kajima, M. and Hirose, S. (1979) Comparative studies on the increase by polyamines of fidelity of protein synthesis in E. coli and wheat germ cell free system. Biochem. Biophys. Res. Commun. 91, 440-448.

Igarashi, K., Kojima, M., Wantanabe, Y., Maeda, K. and Hirose, S. (1980) Stimulation of polypeptide synthesis by spermidine at the level of initiation in rabbit reticulocytes and wheat germ cell-free systems. Biochem. Biophys. Res. Commun. 97, 480-486.

Ihle, J.N. and Dure, L.S. (1972) The developmental biochemistry of cotton seed embryogenesis and germination I Purification and properties of carboxypeptidases from germinating cotyledons. J. Biol. Chem. 247, 5034-5040.

Ingle, J., Joy, K.W. and Hageman, R.H. (1966) The regulation of enzymes involved in the assimilation of nitrate in higher plants. Biochem. J. 100, 577-588.

Jackson, W.A., Flesher, D. and Hageman, R.H. (1973) Nitrate uptake by darkgrown corn seedlings : Some characteristics of apparent induction. Plant Physiol. 51, 120-127.

Jacobson, J.V. and Varner, J.E. (1967) Gibberellic acid induced synthesis of protease by isolated aleurone layers of barley. Plant Physiol. 42, 1596-1600.

Jacobson, J.V. and Zwar, J.A. (1974) Gibberellic acid causes increased synthesis of RNA which contains poly (A) in barley aleurone tissue. Proc. Natl. Acad. Sci. U.S.A. 71, 3290-3293.

Jamdar, S.C. (1979) Hepatic lipid metabolism : Effect of spermine, albumin and Z protein on microsomal lipid formation. Arch. Biochem. Biophys. 195, 81-94.

Jänne, J., Pöso, H. and Raina, A. (1978) Polyamines in rapid growth and cancer. Biochim. Biophys. Acta 473, 241-293.

Jawali, N., Ramakrishna, J., Sainis, J.K. and Sane, P.V. (1979) Inhibition of the nitrate reductase complex by dibromothymoquinone. Z. Naturforsch. 34c, 529-531.

Jawali, N., Sainis, J.K. and Sane, P.V. (1978) Hydroxylamine inhibition of the nitrate reductase complex from Amaranthus. Phytochemistry 17, 1527-1530.

Jawali, N. and Sane, P.V. (1984) Inhibition of the nitrate reductase complex from spinach by oxylamines. Phytochemistry 23, 225-228.

Jones, R.W. and Sheard, R.W. (1973) Nitrate reductase activity of dark grown and light exposed etiolated field peas (Pisum arvense) . Can. J. Bot. 51, 27-35.

Jones, R.W. and Sheard, R.W. (1975) Phytochome, nitrate movement and induction of nitrate reductase in etiolated pea terminal buds. Plant Physiol. 55, 954-959.

Jordan, W.R. and Huffaker, R.C. (1972) Influence of age and light on the distribution and development of nitrate reductase in greening barley leaves. Physiol. Plant. 26, 296-301.

Joy, K.W. (1969) Nitrogen metabolism of Lemna minor II Enzymes of nitrate assimilation and some aspects of their regulation. Plant Physiol. 44, 849-853.

Joy, K.W. and Hageman, R.H. (1966) The purification and properties of nitrite reductase from higher plants and its dependence on ferredoxin. Biochem. J. 100, 263-273.

Kanamori, T. and Matsumoto, H. (1972) Glutamine synthetase from rice plant roots. Arch. Biochem. Biophys. 125, 404-412.

Kapoor, M. and Bray, D.F. (1968) Feedback inhibition of glutamine synthetase of Neurospora crassa by nicotinamide adenine dinucleotide. Biochemistry 7, 3583-3589.

Kapoor, M., Bray, D.F. and Ward, G.W. (1968) Anthranilic acid as a feedback inhibitor of glutamine synthetase of Neurospora crassa. Arch. Biochem. Biophys. 128, 810-814.

Katz, S. and Miller, J.E. (1972) Medium effects of urea and guanidine hydrochloride on volumetric changes produced by protonation of carboxylate groups. J. Phys. Chem. 76, 2778-2780.

Kaur-Sawhney, R., Altman, A. and Galston, A.W. (1978) Dual mechanisms in polyamines mediated control of ribonuclease activity in oat leaf protoplasts. Plant Physiol. 62, 158-160.

Kaur-Sawhney, R., Flores, H.E. and Galston, A.W. (1980) Polyamine induced DNA synthesis and mitosis in oat leaf protoplasts. Plant Physiol. 65, 368-371.

Kaur-Sawhney, R., Flores, H.E. and Galston, A.W. (1981) Polyamine oxidase in oat leaves : a cell wall localized enzyme. Plant Physiol. 68, 494-498.

Kaur-Sawhney, R. and Galston, A.W. (1979) Interaction of polyamines and light on biochemical processes involved in leaf senescence. Plant, Cell and Environment, 2, 189-196.

Kaur-Sawhney, R., Shih, L.M., Cegielska, T. and Galston, A.W. (1982 a) Inhibition of protease activity by polyamines. Relevance for control of leaf senescence. FEBS Lett. 145, 345-349.

Kaur-Sawhney, R., Shih, L.M. and Galston, A.W. (1982 b) Relation of polyamine biosynthesis to the initiation of sprouting in potato tubers. Plant Physiol. 69, 411-415.

Kawakita, A.I. (1904-1905) On the behaviour of guanidine to plants. Bull. Coll. Agric. Tokyo Imp. Univ. Japan VI pp. 181-183.

Kende, H. and Shen, T.C. (1972) Nitrate reductase in Agrostemma githago : comparison of inductive effects of nitrate and cytokinin. Biochim. Biophys. Acta 286, 118-125.

Kessler, E. (1964) Nitrate assimilation by plants. Ann. Rev. Plant Physiol. 15, 157-172.

Khan, A.A. (1977) ed. "The Physiology and biochemistry of seed dormancy and germination". North Holland Publishing Co., New York.

Kim, K. and Tchen, T.T. (1962) Putrescine-α-ketoglutarate transaminase in E. coli. Biochem. Biophys. Res. Commun. 9, 99-102.

Kirk, P.R. and Leech, R.M. (1972) Amino acid biosynthesis by isolated chloroplasts during photosynthesis. Plant Physiol. 50, 228-234.

Kleczkowski, K. and Wielgat, B. (1968) Carbamoylation of putrescine in plant material. Bull. Acad. Polon. Sci. Ser. Sci. Biol. 61, 521-526.

Klepper, L., Flesher, D. and Hageman, R.H. (1971) Generation of reduced nicotinamide adenine dinucleotide for nitrate reductase in green leaves. Plant Physiol. 48, 580-590.

Koroleva, T.N., Alekseeva, M.V., Shutov, A.D. and Vaintraub, I.A. (1973) Sov. Plant Physiol. (Engl. transl.) 20, 650-653. cf. Ashton, F.M.(1976) Mobilization of storage properties of seeds. Ann. Rev. Plant Physiol. 27, 95-117.

Kretovich, W.L. (1965) Some problems of amino acids and amide biosynthesis in plants. Ann. Rev. Plant Physiol. 16, 141-154.

Kuttan, R., Radhakrishnan, A.N., Spande, T. and Witkop, B. (1971) Sym-homospermidine, a naturally occurring polyamine. Biochem. 10, 361-365.

Lea, P.J. and Miflin, B.J. (1974) An alternative route for nitrogen assimilation in higher plants. Nature (London) 251, 614-616.

Lea, P.J. and Thurman, D.A. (1972) Intracellular location and properties of plant L-glutamate dehydrogenase. J. Exp. Bot. 23, 440-449.

Lee, J.A. and Stewart, G.R. (1978) Ecological aspects of nitrogen assimilation. Adv. Bot. Res. 6, 1-43.

Leech, R.M. and Kirk, P.R. (1968) An NADP-dependent L-glutamate dehydrogenase from chloroplasts of Vicia faba L. Biochem. Biophys. Res. Commun. 32, 685-690.

Le Rudulier, D. and Goas, G. (1971) Mise en evidence et dosage de quelques amines dans les plannues de soja hispida Moench. privees de leurs cotyledons et cultivees en presence de nitrates d'uree et de chlorure d'ammonium. C.R. Acad. Sci. Paris 273, 1108-1110.

Le Rudulier, D. and Goas, G. (1977) Diamine oxidase in young Glycine max plants. Phytochemistry 16, 509-511.

Le Rudulier, D. and Goas, G. (1979) Conmbution l'etude de l'accumulan'on de put chezdes Planres cultivecs en nutrition smetment ammoniacle. C.R. Acad. Sci. (Paris) Ser. D. 288, 1387-1390.

Lips, S.H. (1975) Enzyme content of plant microbodies as affected by experimental procedures. Plant Physiol. 55, 598-601.

Lips, S.H., Kaplan, D. and Roth-Bejerano, N. (1973) Induction of nitrate reductase by nitrite in bean seed cotyledons. Eur. J. Biochem. 37, 589-592.

Lips, S.H. and Roth-Bejerano, N. (1969) Light and Hormones : interchangeability in the induction of nitrate reductase. Science 166, 109-110.

Locwood, D.H. and East, L.E. (1974) Studies on the insulin-like actions of polyamines on lipid and glucose metabolism in adipose tissue cells. J. Biol. Chem. 249, 7717-7722.

Losada, M., Panaque, A., Ramirez, J.M. and del Campo, F.F. (1963) Mechanism of nitrite reduction in chloroplasts. Biochem. Biophys. Res. Commun. 10, 298-303.

Losada, M., Panaque, A., Aparicio, P.J., Vega, J.M., Cardenas, J. and Herrera, J. (1970) Inactivation and repression by ammonium of the nitrate reducing systems in Chlorella. Biochem. Biophys. Res. Commun. 38, 1009-1011.

Macgregor, R.K. and Mahler, H.R. (1967) RNA synthesis in intact rat liver nuclei. Arch. Biochem. Biophys. 120, 136-157.

Magalhaes, A.C., Neyra, C.A. and Hageman, R.H. (1974) Nitrite assimilation and amino nitrogen synthesis in isolated spinach chloroplasts. Plant Physiol. 53, 411-415.

Mann, A.F., Stewart, G.R. and Fentem, P.A. (1979) Identification of two forms of glutamine synthetase in barley Hordeum vulgare). Biochem. Biophys. Res. Commun. 88, 515-521.

Mann, A.F., Fentem, P.A. and Stewart, G.R. (1980) Tissue localization of barley (Hordeum vulgare) glutamine synthetase isoenzymes. FEBS Lett. 110, 265-267.

Martinoia, E., Heck, U. and Wiemken, A. (1981) Vacuoles as storage compartments for nitrate in barley leaves. Nature 289, 292-294.

Martin-Tanguy, J., Martin, C. and Gallert, M. (1973) Presence de composes aromatiq ues i'es la put dans diver Nicotina virose's C.R. Acad. Sci. (Paris) Ser D 276, 1433-1436.

Matsumoto, H., Wakiuchi, N. and Takahashi, E. (1971) Changes of some mitochondrial enzyme activities of cucumber leaves during ammonium toxicity. Physiol. Plant. 25, 353-357.

Mattoo, A.K., Fuchs, Y. and Chalutz, E. (1981) Regulatory aspects of ethylene biosynthesis in higher plants and microorganisms. Israel J. Bot. 30, 55-59.

Mayer, A.M. and Poljakoff-Mayber, A. (1963) eds. "The germination of seeds". MacMillan, New York. pp. 236.

Meers, J.L., Tempest, D.W. and Brown, C.M. (1970) Glutamine (amide) : 2-oxoglutarate aminotransferase oxido-reductase (NADP), an enzyme involved in the synthesis of glutamate by some bacteria. J. Gen. Microbiol. 64, 187-194.

Mehta, P. and Srivastava, H.S. (1980) Comparative stability of ammonium and nitrate induced nitrate reductase activity in maize leaves. Phytochemistry 19, 2527-2530.

Michael, G., Martin, P. and Owssia, T. (1970) In "Nitrogen nutrition of the Plant" (ed. Kirkby, E.A.) University of Leeds.

Miflin, B.J. (1975) In "Fertilizer use and Protein Production". pp. 53-74. International Potash Institute, Switzerland.

Miflin, B.J. and Lea, P.J. (1976) The pathway of nitrogen assimilation in plants. Phytochemistry 15, 873-885.

Miflin, B.J. and Lea, P.J. (1977) Amino acid metabolism. Annu. Rev. Plant Physiol. 28, 299-329.

Moeller, M., Robbins, G.S., Burger, W. and Prentice, N. (1970) Carboxypeptidase from germinated barley and its action on casein. J. Agric. Food Chem. 18, 886-890.

Mohanty, B. and Fletcher, J.S. (1976) Ammonium influence on the growth and nitrate reductase activity of scarlet rose suspension culture. Plant Physiol. 58, 152-155.

Montague, M., Armstrong, T.A. and Joworski, E.G. (1978) Polyamine metabolism in embryonic cells of Daucus carota I Changes in intracellular content and rates of synthesis. Plant Physiol. 62, 430-433.

Montague, M., Armstrong, T.A. and Jaworski, E.G. (1979) Polyamine metabolism in embryonic cells of Daucus carota II Changes in arginine decarboxylase activity. Plant Physiol. 63, 341-345.

Morel, G. (1971) Deviations du me'tabolism azote' des tissus de crown-gall. Coll. Internat. CNRS no. 193. Les Cultures de tissus de plantes. pp. 463-471.

Morilla, C.A., Boyer, J.S. and Hageman, R.H. (1973) Nitrate reductase activity and polyribosomal content of corn (Zea mays L.) having low leaf water potential. Plant Physiol. 51, 817-824.

Mukhopadhyay, A., Choudhari, M.M., Sen, K. and Ghosh, B. (1983) Changes in polyamines and related enzymes with loss of viability in rice seeds. Phytochemistry 22, 1547-1551.

Naik, B.I., Mehta, K.K. and Srivastava, S.K. (1976) Changes in polyamine levels on infection of plants by Cuscuta reflexa. Indian J. Biochem. Biophys. 13, 306-307.

Naik, B.I., Sharma, V. and Srivastava, S.K. (1980) Interaction between growth regulators and polyamine effects on membrane permeability. Phytochemistry 19, 1321-1322.

Naik, B.I. and Srivastava, S.K. (1978) Effect of polyamines on tissue permeability. Phytochemistry 17, 1885-1887.

Naik, B.I. and Srivastava, S.K. (1981) Role of sulfhydryl group and polyamines in controlling tissue permeability. Ind. J. Exp. Biol. 19, 479-480.

Neyra, C.A. and Hageman, R.H. (1974) Dependence of nitrite reduction on electron transport in chloroplasts. Plant Physiol. 54, 480-483.

Neyra, C.A. and Hageman, R.H. (1975) Nitrate uptake and induction of nitrate reductase in excised corn roots. Plant Physiol. 56, 692-695.

Neyra, C.A. and Hageman, R.H. (1978) Pathway for nitrate assimilation in Corn (Zea mays L.) leaves, cellular distribution of enzymes and energy sources for nitrate reduction. Plant Physiol. 62, 618-621.

Nicholas, J.C., Harper, J.E. and Hageman, R.H. (1976) Nitrate reductase activity in soybeans (Glycine max (L.) Merr.) I Effects of light and temperature. Plant Physiol. 58, 731-735.

Nicklish, A., Geske, W. and Kohl, J.G. (1976) Relevance of glutamate synthase and glutamate dehydrogenase to the nitrogen assimilation of primary leaves of wheat. Biochem. Physiol. Pflanzen. 170, 85-90.

Nishimura, M., Bhusauwang, P., Strzalka, K. and Akazawa, T. (1982) Developmental formation of glutamine synthetase in greening pumpkin cotyledons and its subcellular localization. Plant Physiol. 70, 353-356.

Nowakowski, T.Z., Cunningham, R.K. and Nielsen, K.F. (1965) Nitrogen fractions and soluble carbohydrates in Italian rye grass I Effects of soil temperature, form and levels of nitrogen. J. Sci. Food Agric. 16, 124-134.

Oaks, A. (1979) Nitrate reductase in roots and its regulation : In "Nitrogen assimilation of plants" (Hewitt, E.J. and Cutting, C.V. eds.) Academic Press, New York. pp. 217-226.

Oaks, A., Wallace, W. and Stevens, D. (1972) Synthesis and turnover of nitrate reductase in corn roots. Plant Physiol. 50, 649-654.

O'Neal, T.D. and Joy, K.W. (1973) Localization of glutamine synthetase in chloroplasts. Nature (New Biol.) 246, 61-62.

O'Neal, T.D. and Joy, K.W. (1974) Glutamine synthetase of pea leaves : Divalent cation effects, substrate specificity and other properties. Plant Physiol. 54, 773-779.

O'Neal, T.D. and Joy, K.W. (1975) Pea leaf glutamine synthetase. Regulatory properties. Plant Physiol. 55, 968-974.

Osterhout, W.J.V. (1942) Increased irritability in Nitella due to guanidine. J. Gen. Physiol. 26, 65-73.

Pahlich, E. and Joy, K.W. (1971) Glutamate dehydrogenase from pea roots : Purification and properties of enzymes. Can. J. Biochem. 49, 127-138.

Palavan, N. and Galston, A.W. (1982) Polyamine biosynthesis and titre during various developmental stages of Phaseolus vulgaris. Plant Physiol. 55, 437-444.

Pellipe, G.M., Dale, J.E. and Marriott, C. (1975) The effects of irradiance on uptake and assimilation of nitrate by young barley leaves. Ann. Bot. 39, 43-55.

Penner, D. and Ashton, F.M. (1966) Proteolytic enzyme control in squash cotyledons. Nature 212, 935-936.

Penner, D. and Ashton, F.M. (1967) Hormonal control of proteinase activity in squash cotyledons. Plant Physiol. 42, 791-796.

Pilet, P.E., Pratt, R. and Roland, J.C. (1972) Morphology, ribonuclease and transaminase of root protoplasts. Plant Cell Physiol. 13, 297-309.

Pisano, J.J., Abraham, D. and Undenfriend, S. (1963) Biosynthesis and deposition of γ-guanidinobutyric acid in mammalian tissues. Arch. Biochem. Biophys. 100, 324-329.

Popovic, R.B., Kyle, D.J., Cohen, A.S. and Zalik, S. (1979) Stabilization of thylakoid membranes by spermine during stress induced senescence of barley leaf discs. Plant Physiol. 64, 721-726.

Priebe, A., Klein, H. and Jagor, H.J. (1978) Role of polyamines in SO_2 polluted pea plants. J. Exp. Bot. 52, 1035-1048.

Pusztai, A. and Duncan, I. (1971) Changes in proteolytic enzyme activities and transformation of nitrogenous compounds in the germinating seeds of kidney bean (Phaseolus vulgaris). Planta 96, 317-325.

Radin, J.W. (1974) In vivo assay of nitrate reductase in cotton leaf discs : Effect of oxygen and ammonium. Plant Physiol. 53, 458-463.

Raina, A. (1963) Studies on the determination of spermidine and spermine and their metabolism in the development of chick embryo. Acta Physiol. Scand. 60 (Suppl. 218), 7-8.

Ramakrishna, S. and Adiga, P.R. (1974) Amine biosynthesis in Lathyrus sativus seedlings. Phytochemistry 13, 2161-2166.

Ramakrishna, S. and Adiga, P.R. (1975) Amine levels in Lathyrus sativus seedlings during development. Phytochemistry 14, 63-68.

Rao, K.P. and Rains, D.W. (1976) Nitrate absorption by barley I Kinetics and energetics. Plant Physiol. 57, 55-58.

Rathnam, C.K.M. and Edwards, G.E. (1976) Distribution of nitrate-assimilating enzymes between mesophyll protoplasts and bundle sheath cells in leaves of three groups of C_4 plants. Plant Physiol. 57, 881-885.

Reinbothe, H. and Mothes, K. (1962) Urea, ureides and guanidines in plants. Ann. Rev. Plant Physiol. 13, 129-150.

Relimpio, A.M., Aparicio, P.J., Paneque, A. and Losada, M. (1971) Specific protection against inhibitors of NADH-nitrate reductase complex from spinach. FEBS Lett. 17, 226-230.

Rhodes, D., Rendon, G.A. and Stewart, G.R. (1975) Control of glutamine synthetase level in Lemna minor. Planta 125, 201-211.

Rhodes, D., Rendon, G.A. and Stewart, G.R. (1976) The regulation of ammonia assimilating enzymes in Lemna minor. Planta 129, 203-210.

Rhodes, D., Sims, A. and Stewart, G.R. (1979) Glutamine synthetase and the control of nitrogen assimilation in Lemna minor L. In 'Nitrogen assimilation in plants' (Hewitt, E.J. and Cutting, C.V. eds.) Academic Press, New York. pp. 501-528.

Richards, J.J. and Coleman, R.G. (1952) Occurrence of putrescine in K^+-deficient barley. Nature (London) 170, 460.

Richardson, M. (1977) The proteinase inhibitor of plants and microorganisms. Phytochemistry 16, 159-169.

Rijven, A.H.Q.C. and Prakash, V. (1971) Action of kinetin on cotyledons of fenugreek. Plant Physiol. 47, 59-64.

Ritenour, G.L., Joy, K.W., Bunning, J. and Hageman, R.H. (1967) Intracellular localization of nitrate reductase, nitrite reductase and glutamic acid dehydrogenase in green leaf tissue. Plant Physiol. 42, 233-237.

Rosenthal, S.M. and Dubin, D.T. (1962) Metabolism of polyamines by Staphylococcus. J. Bacteriol. 84, 859-863.

Sahulka, J., Gaudinova, A. and Hodacova, V. (1975) Regulation of glutamate dehydrogenase and nitrate reductase levels in excised pea roots by exogenously supplied sugar. Z. Pflanzenphysiol. 75, 392-404.

Santarius, J.A. and Stocking, C.R. (1969) Intracellular localization of enzymes in leaves and chloroplast membrane permeability to compounds involved in amino acid synthesis. Z. Naturforsch. 24B, 1170.

Sasakawa, H. and Yamamoto, Y. (1979) Effects of red, far red and blue light on enhancement of nitrate reductase activity and on nitrate uptake in etiolated rice seedling. Plant Physiol. 63, 1098-1101.

Sawhney, S.K., Naik, M.S. and Nicholas, D.J.D. (1978) Regulation of NADH supply for nitrate reduction in green plants via photosynthesis and mitochondrial respiration. Biochem. Biophys. Res. Commun. 81, 1209-1216.

Schrader, L.E., Ritenour, G.L., Eilrich, G.L. and Hageman, R.H. (1968) Some characteristics of nitrate reductase from higher plants. Plant Physiol. 43, 930-940.

Schulze, E. (1892) cf. Bidwell, R.G.S. and Durzan, D.J. (1975) Some recent aspects of nitrogen metabolism : In "Historical and current aspects of plant physiology" (Davies, P.S. ed.) Published by New York State College of Agriculture and Life Science. Cornell University, Ithaca, New York. pp. 152-225.

Sechi, A.M., Carbini, L., Landi, L., Pasquali, P. and Lenaz, G. (1978) Inhibition of phospholipase A_2 and phospholipase C by polyamines. Arch. Biochem. Biophys. 186, 248-254.

Sen, K. (1983) Studies on polyamines in rice seeds (Oryza sativa L.) in relation to their regulatory roles on the activities of some important enzymes. Ph.D. thesis, University of Calcutta, India.

Sen, K., Choudhari, M.M. and Ghosh, B. (1981) Changes in polyamine contents during development and germination of rice seeds. Phytochemistry 20, 631-633.

Serafini-Fracassini, D. and Alessandri, M. (1983) Polyamines and morphogenesis in Helianthus tuberosus explants : In "Advances in polyamine research" Vol. 4 (Bachrach, U., Kaye, A.M. and Chayen, P. eds.) Raven Press, New York. pp. 419-426.

Serafini-fracassini, D., Bagni, N., Cionni, P.G. and Bennici, A. (1980) Polyamines and nucleic acids during the first cell cycle of Helianthus tuberosus tissue after the dormancy break. Planta 148, 332-337.

Serra, J.L., Llama, M.J. and Cadenas, E. (1978) Nitrate utilization by the diatom Skeletonema costatum.Plant Physiol. 62, 991-994.

Shain, Y. and Mayer, A.M. (1965) Proteolytic enzymes and endogenous trypsin inhibitor in germinating lettuce seeds. Physiol. Plant. 18, 853-859.

Shaner, D.L. and Boyer, J.S. (1976) Nitrate reductase activity in maize (Zea mays L.) leaves I Regulation by nitrate flux. Plant Physiol. 58, 499-504.

Shapiro, B.M. and Stadtman, E.R. (1970) Glutamine synthetase (Escherichia coli) : In 'Methods in Enzymology, 17 A, 910-936.

Shaw, K. (1972) Min. Agr. Fish Fd. Closed Conf. FEC43 (restricted) cf. Hewitt, J., Hucklesby, D.P., Mann, A.F., Notton, B.A. and Ruckledge, G.J. (1979) In "Nitrogen assimilation of plant" (Hewitt, J. and Cutting, C.E. eds.) Academic Press, New York. pp. 255-287.

Shen, T.C., Funkhouser, E.A. and Guerrero, M.G. (1976) NADH and NAD(P)H - nitrate reductases in rice seedlings. Plant Physiol. 58, 292-294.

Shepard, D.V. and Thurman, D.A. (1973) Effect of nitrogen sources upon the activity of L-glutamate dehydrogenase of Lemna gibba. Phytochemistry 12, 1937-1946.

Shibuya, S. and Makizumi, S. (1953) Biochemical studies on guanidine derivatives VIII Distribution of extractable guanidine derivatives in animals and plants. J. Ja. Biochem. Soc. 25, 210-213.

Shih, L.M., Kaur-Sawhney, R., Fuhrer, J., Samanta, S. and Galston, A.W. (1982) Effects of exogenous 1,3-diamino-

propane and spermidine on senescence of oat leaves I Inhibition of protease activity, ethylene production and chlorophyll loss as related to polyamine content. Plant Physiol. 70, 1592-1596.

Sims, A.P. (1976) Regulation of glutamine metabolism in fungi with particular reference to the food yeast Candida utilis: In "Perspectives of Experimental Biology" (Sunderland, N. ed.) Vol. II, Pergamon Press, Oxford. pp. 247-261.

Sims, A.P. and Folks, B.F. (1964) A kinetic study of the assimilation of amino acids in an exponentially growing culture of Candida utilis. Proc. Royal Soc. Ser. B 159, 479-502.

Singh, R.P. and Srivastava, H.S. (1982) Assimilation of inorganic nitrogen and glutamate dehydrogenase activity in maize seedlings. Biochem. Physiol. Pflanzen. 177, 633-642.

Singh, R.P. and Srivastava, H.S. (1983) Regulation of glutamate dehydrogenase activity by amino acids in maize seedlings. Physiol. Plant. 57, 549-554.

Sloan, C.H. and Sublett, B.J. (1966) Colourimetric method of analysis for nitrates in tobacco. Tobacco Science 10, 121-125.

Smith, B.P. and Williams, H.H. (1951) Transaminase studies in germinating seeds. Arch. Biochem. Biophys. 31, 366-374.

Smith, H. (1974) The biochemistry of photomorphogenesis : In 'MTP international review of science', Biochemistry Series, Vol. II. Butterworths, London. pp. 159-198.

Smith, T.A. (1963) L-arginine carboxylyase of higher plants and its relation to potassium nutrition. Phytochemistry 2, 241-252.

Smith, T.A. (1969) Agmatine iminohydrolase in maize. Phytochemistry 8, 2111-2117.

Smith, T.A. (1970 a) The biosynthesis and metabolism of putrescine in higher plants. Ann. N.Y. Acad. Sci. 171, 988-1001.

Smith, T.A. (1970 b) Putrescine, spermidine and spermine in higher plants. Phytochemistry 9, 1479-1486.

Smith, T.A. (1970 c) Polyamine oxidase in higher plants. Biochem. Biophys. Res. Commun. 41, 1452-1456.

Smith, T.A. (1971) The occurrence, metabolism and functions of amines in plants. Biol. Rev. 46, 201-241.

Smith, T.A. (1972) The physiology of the polyamines and related compounds. Endeavour 31, 22-28.

Smith, T.A. (1977 a) Recent advances in the biochemistry of plant amines. Progress in phytochem. Vol. 4 (Reinhold, L., Harborne, J.B. and Swain, T. eds.) Pergamon Press, New York. pp. 27-82.

Smith, T.A. (1977 b) Homospermidine in Rhizobium and legume root nodules. Phytochemistry 16, 278-279.

Smith, T.A. and Best, G.R. (1977) Polyamines in barley seedlings. Phytochemistry 16, 841-843.

Smith, T.A., Best, G.R., Abbot, A.J. and Clements, E.D. (1978) Polyamines in Paul's scarlet rose suspension culture. Planta 144, 63-68.

Smith, T.A., Negrel, Y. and Bird, C.R. (1983) The cinnamic acid amides of the di- and polyamines : In "Advances in polyamine research" Vol. 4 (Bachrach, U., Kaye, A. and Chayen, R. eds.) Raven Press, New York. pp. 347-370.

Splittstoesser, W.E., Chu, M.C., Stewart, S.A. and Splittstoesser, S.A. (1976) Alanine amino transferase from Cucurbita moschata cotyledons. Plant Cell Physiol. 17, 83-89.

Srivastava, H.S. (1974) In vivo activity of nitrate reductase in maize seedlings. Indian J. of Biochem. Biophys. 11, 230-236.

Srivastava, H.S. (1980) Regulation of nitrate reductase activity in higher plants. Phytochemistry 19, 725-733.

Srivastava, S.K. and Rajbabu, P. (1983 a) Effect of amines and guanidines on ATPase from maize scutellum. Phytochemistry 22, 2675-2679.

Srivastava, S.K. and Rajbabu, P. (1983 b) Effect of amines and guanidines on peroxidase from maize scutellum. Phytochemistry 22, 2681-2686.

Srivastava, S.K. and Rajbabu, P. (1984) Interaction of polyamines and guanidines with phytochrome in modulating the bound peroxidase and ATPase in maize scutellum. Phytochemistry (communicated).

Srivastava, S.K. and Smith, T.A. (1982 a) Inhibition of growth in higher plants by homologous series of guanidines and its reversal by spermine. Ann. Bot. 50, 265-275.

Srivastava, S.K. and Smith, T.A. (1982 b) Effect of some oligoamines and guanidines on the membrane permeability in higher plants. Phytochemistry 21, 997-1008.

Srivastava, S.K., Vashi, D.J. and Naik, B.I. (1983) Control of senescence by polyamines and guanidines in young and mature barley leaves. Phytochemistry 22, 2151-2154.

Srivenugopal, K. and Adiga, P.R. (1980) Coexistence of two pathways of spermidine biosynthesis in Lathyrus sativus seedlings. FEBS Lett. 112, 260-264.

Stadtman, E.R., Ginsburg, A., Ciardi, J.E., Yeh, J., Hennig, S.B. and Shapiro, B.M. (1970) Multiple molecular forms of glutamine synthetase produced by enzyme catalyzed adenylation and deadenylation reactions. Adv. Enzyme Regul. 8, 99-118.

Stevens, T.L. (1970) Biochemical role of naturally occurring polyamines in nucleic acid synthesis. Biol. Rev. 45, 1-27.

Stewart, G.R. (1972) The regulation of nitrite reductase level in Lemna minor. J. Exp. Bot. 23, 171-183.

Stewart, G.R., Mann, A.F. and Fentem, P.A. (1980) Enzymes of glutamate formation : glutamate dehydrogenase, glutamine synthetase and glutamate synthase : In "The Biochemistry of Plants" Vol. 5 (Miflin, B.J. ed.) Academic Press, New York. pp. 271-327.

Stewart, G.R. and Rhodes, D. (1977) A comparison of the characteristics of glutamine synthetase and glutamate dehydrogenase from Lemna minor. New Phytol. 79, 257-268.

Stewart, G.R. and Rhodes, D. (1978) Nitrogen metabolism of halophytes III Enzymes of ammonia assimilation. New Phytol. 80, 307-316.

Stewart, G.R. and Smith, H. (1972) Effect of abscisic acid on nucleic acid synthesis and the induction of nitrate reductase in Lemna polyrhiza. J. Exp. Bot. 23, 875-885.

Storey, R. and Beevers, L. (1978) Enzymology of glutamine metabolism related to senescence and seed development in pea (Pisum sativum L.).Plant Physiol. 61, 494-500.

Stout, E.R. and Mans, R.J. (1967) Partial purification and properties of RNA polymerase from maize. Biochim. Biophys. Acta 134, 327-336.

Stregonov, B.P., Shevyakova, N.I. and Lapina, L.P. (1960). Mechanism of toxic effects of salts on plants. Fiziol. Ustoichivosti Rast. Spornik : 649-653.

Stulen, I., Koch-Bosma, T. and Koster, A. (1971) An endogenous inhibitor of nitrate reductase in radish cotyledons. Acta Bot. Neerl. 20, 389-396.

Suresh, M.R. and Adiga, P.R. (1977) Putrescine sensitive (artificial) and insensitive (biosynthetic) s-adenosyl-L-methionine decarboxylase activities of Lathyrus sativus seedlings. Eur. J. Biochem. 79, 511-518.

Suresh, M.R., Ramkrishna, S. and Adiga, P.R. (1978) Regulation of arginine decarboxylase and putrescine levels in Cucumis cotyledons. Phytochemistry 17, 57-63.

Sze, H. and Ashton, F.M. (1971) Dipeptidase development in cotyledons of Cucurbita maxima during germination. Phytochemistry 10, 2935-2942.

Tabor, C.W. (1960) The stabilizing effect of spermine and related amines on mitochondria and protoplasts. Biochem. Biophys. Res. Commun. 2, 117-120.

Tabor, H. (1960) Stabilization of bacteriophage T5 by spermine and related polyamines. Biochem. Biophys. Res. Commun. 3, 382-385.

Tabor, H. and Tabor, C.W. (1964) Spermidine, spermine and related amines. Pharmacol. Rev. 16, 245-300.

Takeo, T. (1979) Glutamate dehydrogenase from tea (Camellia sinensis) rootlet. Agric. Biol. Chem. 43, 2257-2263.

Tappel, A.L. (1968) Automatic measurement of proteolytic enzymes. Anal. Biochem. 23, 466-469.

Tempest, D.W., Meers, J.L. and Brown, C.M. (1970) Synthesis of glutamate in Aerobactor aerogenes by a hitherto unknown route. Biochem. J. 117, 405-407.

Teraoka, H. and Tanaka, K. (1973) Effect of polyamines on the binding of dihydro streptomycin and N-acetyl phenyl t-RNA to ribosomes from E. coli. Eur. J. Biochem. 40, 423-429.

Thimann, K.V. (1980) ed. "Senescence in Plants" CRC Press, Boca Raton, Fl. pp. 85-115.

Thomas, H. and Stoddart, J.L. (1974) Subcellular distribution of alanine aminotransferase in leaves of Lollium temulentum. Phytochemistry 13, 1053-1058.

Thurman, D.A., Palin, C. and Laycock, M.V. (1965) Isoenzymatic nature of L-glutamic acid dehydrogenase of higher plants. Nature (London) 207, 193-194.

Tinker, P.B.H. (1979) Uptake and consumption of soil nitrogen in relation to agronomic practice : In "Nitrogen assimilation of Plants" (Hewitt, E.J. and Cutting, C.V. eds.) Academic Press, New York. pp. 101-122.

Tonhazy, N.E., White, N.G. and Umbreit, W.W. (1950) A rapid method for the estimation of glutamic aspartic transaminase in tissues and its application to radiation sickness. Arch. Biochem. 28, 36-42.

Torrigiani, P. and Serafinni-Fracassini, D. (1979) Early DNA synthesis and polyamines in mitochondria from activated

parenchyma of Helianthus tuberosus. Z. Pflanzenphysiol. 97, 353-359.

Travis, R.L., Huffaker, R.C. and Key, J.L. (1970) Light induced development of polyribosomes and the induction of nitrate reductase in corn leaves. Plant Physiol. 46, 800-805.

Travis, R.L. and Key, J.L. (1971) Correlation between polyribosome level and the ability to induce nitrate reductase in dark grown corn seedlings. Plant Physiol. 48, 617-620.

Tsay, R. and Ashton, F.M. (1974) De novo synthesis and hormonal regulation of a dipeptidase in Cucurbita maxima. Phytochemistry 13, 1759-1763.

Tsenova, E.N. (1975) Changes in glutamate dehydrogenase activity in pea and corn plants under the influence of ammonium and nitrate ions. Fiziol. Rast. 1, 30-40.

Tursh, G.P. (1969) Enzymes of glutamine metabolism in myocardium. Fed. Proc. 23, 1305-1310.

Tyler, B.M. (1978) Regulation of the assimilation of nitrogenous compounds. Ann. Rev. Biochem. 47, 1127-1162.

Vaidyanathan, C.S. and Street, H.E. (1959) Nitrate reduction by aqueous extracts of excised tomato roots. Nature (London) 184, 531.

Varma, J.P. (1968) Inhibition of tobacco necrosis virus by guanidine carbonate. Virology 36, 305-308.

Varner, J.E. (1960) The optical specificity of glutamine synthetase. Arch. Biochem. Biophys. 90, 7-11.

Varner, J.E., Balce, L.V. and Huang, R.C. (1963) Senescence of cotyledons of germinating peas. Influence of axis tissue. Plant Physiol. 38, 89-92.

Vega, J.M. and Kamin, H. (1977) Spinach nitrite reductase : Purification and properties of siroheme containing iron sulfur enzymes. J. Biol. Chem. 252, 896-909.

Villanueva, V.R., Adlakha, R.C. and Cantera-Soler, A.M. (1978) Changes in polyamine concentration during seed germination. Phytochemistry 17, 1245-1249.

Wagner, E. (1975) The molecular basis of circadian rythms, Life Sciences Report Vol. I. Dahlem Konferenzen. pp. 215-218.

Wakamiya, T., Shiba, T., Kaneko, T., Sakakibara, H. and Take, T. (1973) Chemical studies on tuberactinomycin V Structures of guanidinoamino acids in tuberactinomycins. Bull. Chem. Soc. Japan 46, 949-954.

Walbot, V., Capdevila, A. and Dure, L.S. (1974) Action of 3' d adenosine (cordycepin) and 3' d cytidine on the

translation of stored m-RNA of cotton cotyledons. Biochem. Biophys. Res. Commun. 60, 103-110.

Wallace, W. (1973) The distribution and characteristics of nitrate reductase and glutamate dehydrogenase in the maize seedlings. Plant Physiol. 52, 191-196.

Wallace, W. (1974) Purification and properties of a nitrate reductase inhibiting enzyme. Biochim. Biophys. Acta 341, 265-276.

Wallace, W. (1975) A re-evaluation of the nitrate reductase content of the maize root. Plant Physiol. 55, 774-777.

Wallace, W. and Pate, J.S. (1967) Nitrate assimilation in higher plants with special reference to cocklebur (Xanthium pennysylvanicum Wallr.). Ann. Bot. 31, 213-228.

Wallsgrove, R.M., Harel, F., Lea, P.J. and Miflin, B.J. (1977) Studies on glutamate synthase from the leaves of higher plants. J. Exp. Bot. 28, 588-596.

Wallsgrove, R.M., Lea, P.J. and Miflin, B.J. (1979) Distribution of the enzymes of nitrogen assimilation within the pea leaf cells. Plant Physiol. 63, 232-236.

Washitani, I. and Sato, S. (1977) Studies on the function of protoplastids in the metabolism of in vivo cultured

tobacco cells I Localization of nitrite reductase and NADP-dependent glutamate dehydrogenase. Plant Cell Physiol. 18, 117-125.

Weissman, G.S. (1972) Influence of ammonium and nitrate nutrition on enzymatic activity in soybean and sunflower. Plant Physiol. 49, 138-140.

Weitzel, G., Renner, R. and Guglielmi, H. (1972) Metabolic effects of arginine derivatives 2 Antilipolytic action of arginyl compounds. Z. Physiol. Chem. 353, 535-538.

Wells, G.N. and Hageman, R.H. (1974) Specificity for nicotinamide adenine dinucleotide by nitrate reductase from leaves. Plant Physiol. 54, 136-141.

Williams, G.R. and Novelli, G.D. (1968) Ribosome changes following illumination of dark grown plants. Biochim. Biophys. Acta 155, 183-192.

Willis, A.J. and Yemm, E.W. (1955) The respiration of barley plants VIII Nitrogen assimilation and the respiration of root system. New Phytol. 54, 163-181.

Wilson, S.B. and Bonner, W.B. (1970) Effects of guanidine inhibitors on mung bean mitochondria. Plant Physiol. 46, 21-24.

Woodcock, D. (1968) Agricultural and horticultural fungicides - past, present and future. Chem. in Britain 4, 294-300.

Wray, J.L. and Filner, P. (1970) Structural and functional relationships of enzyme activities induced by nitrate in barley. Biochem. J. 119, 715-725.

Wright, M.J. and Davidson, K.L. (1964) Nitrate accumulation in crops and nitrate poisoning in animals. Adv. Agron. 16, 197-247.

Yatsu, L.Y. and Jacks, T.Y. (1968) Association of lysosomal activity with aleurone grains in plant seeds. Arch. Biochem. Biophys. 124, 466-471.

Yoder, O.C. and Scheffer, R.P. (1973) Effects of Helminthosporium carbonum toxin on nitrate uptake and reduction by corn tissues. Plant Physiol. 52, 513-517.

Yomo, H. and Iinuma, H. (1966) Production of gibberellin-like substance in the embryo of barley during germination. Planta 71, 113-118.

Yomo, H. and Varner, J.E. (1973) Control of formation of amylases and proteases in the cotyledons of germinating peas. Plant Physiol. 51, 708-713.

Yoshida, D. and Mitake, T. (1966) Agmatine and N-carbamyl-putrescine as intermediates in the formation of nicotine by tobacco plants. Plant and Cell Physiol. 7, 303-305.

Young, N.D. and Galston, A.W. (1983) Putrescine and acid stress, induction of arginine decarboxylase activity and putrescine accumulation by low pH. Plant Physiol. 71, 767-771.

Yu, M.H. and Spencer, M.S. (1969) Conversion of L-leucine to certain keto acids by a tomato enzyme preparation. Phytochemistry 8, 1173-1178.

Yu, Y.B., Adams, D.O. and Yang, S.F. (1979) 1-amino-cyclopropane-1-carboxylate synthase, a key enzyme in ethylene biosynthesis. Arch. Biochem. Biophys. 198, 280-286.

Zhurkin, V.B., Lysov, Y.P. and Ivanov, V.I. (1980) Interaction of spermine with different forms of DNA, a conformational study. Biopolymers 19, 1415-1434.

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