BIBLIOGRAPHY

.

.

- Acharya, U.T., Prakash, L. and Prathapasenan, G. 1990. Effect of gibberellic acid on seedling growth and carbohydrate metabolism during germination of rice [*Oryza sativa* L. var. GR.3] under saline condition. *J. Agro. Crop Sci.* 165, 6-13.
- Acharya, U.T., Prakash, L. and Prathapasenan, G. 1991. Interactive effect of NaCl and GA₃ on oxygen uptake and activity of some respiratory enzymes during germination of rice (*Oryza sativa* L. var. GR-3]. *Proc. Intern. Seed Symposium* Jodhpur, India, pp. 309-312.
- Al Helal, A.A. and Al-Hubashi, I. 1995. Effect of interaction between sodium chloride and temperature on germination of rice grains from Saudi Arabia. *Arab Gulf J. Sci. Res.* 13, 583-590.
- Altman, A. 1982. Polyamines and wounded storage tissues. Inhibition of RNAse activities and solute leakage. *Physiol. Plant.* 54, 194-198.
- Amarsinghe, V. and Carlson, J.E. 1994. Subcellular localization of polyamines in embryogenic callus of white spruce (*Picea glauca*) Can. J. Bot. 72, 788-793.
- Aslam, M., Qureshi, R.H and Ahmed, N. 1993. A rapid screening technique for salt tolerance in rice (*Oryza sativa* L.) *Flant and Soil* **150**, 99-107.
- *Avilova, L.D., Lyakhova, N.F. and Gon Charov, Yu.F. 1983. Effect of sodium cholride on DNA state root cell nuclei of germinating barely seed. *Izhvestiya severo Kavkazskogo Nauchnogo Tsentra Vysshei Shkoly, Estesvennykh Nauk.* 2, 86-88.
- Babu, V.R. and Ramesh Babu, V. 1985. Seed germination, water uptake and seed reserve utilization of rice (*Oryzą sativa* c.v. Jaya) under growth regulator and salinity stressed conditions. *Sped Res.* 13, 129-135.

Bacic, A. and Stone, B.A. 1981. Chemistry and organization of aleurone cell wall components from wheat and barely. *Aust J. Plant Physiol.* **8**, 475-495.

!

- Balki, A.S. and Padole, V.R. 1982. Effect of pre-soaking seed treatments with plant hormones on wheat under conditions of soil salinity. J. Ind. Soil Sci. 30, 361-365.
- Barendse, G.W.M. 1984. Hormonal regulation of enzyme synthesis and activity. In "Aspects of Physiology and Biochemistry of plant Hormones", S.S. Purohit (ed.), pp 1-68. Kalyani Publishers. New Delhi.
- Barger, J.D. and E.D. Delamater. 1948. The use of thionyl chloride in the preparation of Schiff's reagent. *Science* 108, 121-122.
- Basu, R. and Ghosh, B. 1991. Polyamines in various rice (*Oryza sativa*) genotypes with respect to sodium chloride salinity. *Physiol Plant.* 82, 575-581.
- Begum, F., Karmoker, J.L., Fattah, Q. A and Maniruzzaman, A.F.M 1992. The effect of salinity on germination and its correlation with K⁺, Na⁺, Cl⁻ accumulation in germinating seeds of Tritieum aestivum L. cv. Akbar. *Plant Cell Physiol* 33, 1009-1014.
- Benjavongkulchai, E. and Spencer, M.S. 1989. Barely aleurone xylanase:its biosynthesis and possible role. *Can.J. Bot*. 67, 297-302.
- Besford, R., Richardson, C., Campos, J. and Tiburcio, A, 1993. Effect of polyamines on stabilisation of molecular complexes in thylakoid membranes of osmotically stressed oats leaves. *Planta* 189, 201-206.
- Bharadwaj, S.N. and Rao, I.M. 1960. Physiological studies on salt tolerance in crop plants IX. Effect of NaCl and Na₂CO₃ on seedling respiration and growth of wheat and gram. *Ind. J. Plant Physiol.* 3, 56-71.

- Black, M. 1972. Control processes in germination and dormancy. J.J. Head and O.E. Lowerstem (eds). Oxford Biology Readers, Oxford University Press, London.
- Bliss, R.D., Platt Aloia, K.A. and Thomson, W.W. 1984. Changes in plasmalemma organization in cowpea radicle during imbibition in water and NaCl solution. *Plant Cell Environ.* 7, 601-606.

.

- Bliss, R.D., Platt Aloia, K.A. and Thomson, W.W 1986. The inhibitory effect of NaCl on Barley germination. *Plant Cell Environ.* 9, 727-733.
- Boucaud, J. and Ungar, I.A. 1976. Hormonal control of germination under saline conditions of three halophytic taxa in the genus *Suaeda*. *Physiol. Plant*. 37, 143-148.
- Bowonder, B. 1993.: Air pollution, Economy, Energy, Environmental regulations, Environmental trends, Food, Industry, Population, Resource use, Services and Water. Background papers, World Resources Institute, Washington, DC.
- Bozcuk, S. 1981. Effects of kinetin and salinity on germination of tomato, barley and cotton seeds. *Ann. Eot.* 48, 81-84.
- *Bozcuk, S. 1990. Interaction between salt and kinetin on seed germination of some crop plants. *Doga, Turk Botanik Dergisi* 14, 139-149.
- *Bozcuk, S. 1991. Effect of salinity on germination and determination of salt tolerance in some crop plants. *Doga, Turk Biyoloji Dergisi* 15, 144-155.
- Briggs, D.E. 1973. Hormones and carbohydrate metabolism in germinating cereal grains. In "Biosynthesis and its control in Plants" B.V. Milborrow (ed.), pp. 219-277. Academic Press, New York.
- Bronner, R. 1975. Simultaneous demonstration of lipid and starch in plant tissues. *Stain Tech.***50**, 1-4.

ł

- Bush, D.S., Sticher, L., Van Huystee, R., Wagner, D. and Jones, R.J. 1989. The calcium requirement for stability and enzymatic activity of two isoforms of barley aleurone ∞-amylase. J. Biol. Chem. 264, 19392 - 19398.
- Buttrose, M.S. 1963. Ultrastructure of the developing aleurone cells of wheat grain. Aust. J. Biol. Sci. 16, 768-774.
- *Campos, I.S. and Assuncoa, M.V. 1990. Effect of sodium chloride on germination and seedling vigour in rice. *Pesquisa agropecuaria Brasileira* 25, 837 - 843.
- Carter, D.L. 1975. Problems of salinity in agricultrure. In "Plants in saline environment", A. Poljakoff-Mayber and J. Gale (eds.), pp. 22-29. Springer-verlag, New York.
- Chabot, J.F. and Leopold, A.C. 1982. Ultrastructural changes of membranes with hydration in soyabean seeds. *Amer. J. Bot.* 69, 623-633.
- Chen Rufang and Jones, R.L. 1974. Studies on the release of barley aleurone cell proteins. *Planta* **119**, 207-220.
- Ciamporova, M. 1980. Ultrastructure of cortical cells of maize root under water stress conditions. *Biol. Plant.* 22, 444-449.
- Cocucci, S. and Bagmi, N. 1968. Polyamine induced activation of protein synthesis in ribosomal preparation from *Helianthus tuberosus* tissue. *Life Sci.* 7, 113-120.
- Colborne, A.J., Morris, G. and Laidman, D.L. 1976. The formation of endoplasmic reticulum in the aleurone cells of germinating wheat. An ultrastructural study. J. Exp. Bot. 27, 759-767.
- Cowan, I.R., Rose, P.D. and Horne, L.G. 1992. *Dunaliella salina*: A model system for studying response of plant cells to stress. *J. Exp. Bot*. **43**, 1535-1547.

1

Cramer, G.R., Lauchli, A. and Polito, V.S. 1985. Displacement of Ca²⁺ by Na⁺ from the plasmalemma of root cells. A primary response to salt stress. *Flant Physiol.* **79**, 207-211.

.

- De La Guardia, M.D. and Benlloch, M. 1980. Effects of potassium and gibberellic acid on stem growth of whole sunflower plants. *Physiol. Plant.* 49, 443-448.
- Dell' Aquila, A. and Spada, P. 1993. The effect of salinity stress upon protein synthesis of germinating wheat embryos. *Ann. Bot.* 72, 97-101.
- Deng, X., Joly, R.J. and Hahn, D.T. 1989. Effects of plant water deficit on the daily carbon balance of leaves of cacao seedlings. *Physiol. Plant.* 77, 407-412.
- Dhingra, H.R. and Varghese, T.M. 1985a. Effect of salt stress on viability, germination and endogenous levels of some metabolites and ions in maize (Zea mays L) pollen. Ann. Bot. 55, 415-420.
- Dhingra, H.R. and Varghese, T.M. 1985b. Effect of growth regulators on the *invitro* germination and tube growth of maize (*Zea mays* L.) pollen from plants raised under sodium chloride salinity. *New Phytol.* 100, 563-569.
- Dhingra, H.R. and Varghese, T.M. 1990. Effect of NaCl salinity on the activity of some of the oxido-reductases of maize pollen. *Ind. J. Plant Physiol.* 33, 262-265.
- Doig, R.I., Colborne, A.J., Morris, G. and Laidman, D.L. 1975. The induction of glyoxysomal enzyme activities in the aleurone cells of germinating wheat. *J. Exp. Bot.* 26, 387-398.
- Dubey, R.S., Sharma, K.N. and Singh, B. 1987. Salinity induced adenosine triphosphatase activity in germinating rice seeds. *Ind. J. Plant Physiol*. 30, 256-260.

- Dubey, R.S. and Sharma, K.N. 1990. Behaviour of phosphatases in germinating rice in relation to salt tolerance. *Plant Physiol. and Biochem.* 28, 17-26.
- Dubey, R.S. and Rani, M. 1990. Influence of sodium chloride salinity on peptidase activities and the status of total aminoacids in germinating rice seeds of differing salt tolerance. *Trop. Sci.* 30, 133-145.
- Duffus, C.M. and Slaughter, J.C. 1980. Seeds and Their Uses. John Wiley & Sons, New York.
- *Durusoy, M., Tipirdamaz, R. and Bozcuk, S. 1995. Effect of exogenously applied spermidine and gibberellic acid on alpha-amylase activity of germinating barley seeds under salinity stress. *Turkish J. Biol.* **19**, 111-118.
- Echevarria, I., Reynaldo, I. and Maindardi, S. 1995. Some aspects of nitrogen metabolism in rice seeds germinating at two NaCl concentrations. I. Amistad' 82 variety. *Cultivos Tropicales* 16, 43-45.
- Ehrlich, P.R. and Ehrlich, A.H. 1990. The Population Explosion. Simon & Schuster, New York.
- Einspahr, K.J., Maeda, M. and Thompson, G.A. Jr. 1988. Concurrent changes in *Dunaliella salina* ultrastructure and membrane phospholipid metabolism after hyperosmotic shock. *The J. Cell Biol.* 107, 529-38.
- *El Sayed, H. and El Haak, M.A. 1994. Promotion of seed germination and seedling growth by proline in water or salt stressed cereals. *Alexandria J. Agri Res*, 39, 371-384.
- Epstein, E. 1972. Mineral Nutrition of Plants. Principles and perspectives. John Wiley and Sons Inc., New York.
- Evans, P.T. and Malmberg, R.L. 1989. Do polyamines have roles in plant developments? Ann. Rev. Plant Physiol. Flant Mole. Biol. 40, 235-269.

- Fisher, D.B., 1968. Protein staining of ribboned Epon sections for light microscopy *Histochemie* 16, 92-96.
- Flores, H. 1991. Changes in polyamine metabolism in response to abiotic stress. In "Biochemistry and Physiology of Polyamines in Plants" Slocum, R.D. and Flores, H.E. (eds.), pp 213-228. CRC Press, Boca Raton.
- Flores, H. and Filner, D. 1985. Polyamine catabolism in higher plants: Characterisation of pyrroline dehydrogenase *J. Plant growth Regul.* 3, 277-291.
- Flores, H.E., Galston, A.W. 1982. Polyamines and plant stress: activation of putrescine biosynthesis by osmotic shock. *Science* 217, 1259-1261.
- Flores, H.E., Protacio, C.M., and Signs, M.V. 1989. Primary and secondary metabolism of polyamines in plants. *Recent Adv. Phytochem.* 23, 329-393.
- Flores, H.E., Young, N.D. and Galston, A.W. 1984. Polyamine metabolism and plant stress. In "Cellular and Molecular Biology of Plant Stress". KEY, J.L., and T. Kosuge (eds), UCLA Symposia on Molecular and Cellular Biology, New Series 22, pp 1-22. Alan R. Liss Inc., New York.
- Flowers, T.J. 1975. In "Ion transport in plant cells and tissues". D.A.Baker and J.L.Hall (eds.), pp 309-334, North Holland, Amsterdam.
- Flowers, T.J., Troke, P.F. and Yeo, A.R , 1977. The mechanism of salt tolerance in halophytes. Ann. Rev. Plant. Physiol. 28, 89-121.
- Flowers, T.J. and Yeo, A.R. 1981. Variability in the resistance of sodium chloride salinity within rice (*Oryza sativa*L.) varieties. *New Phytol.* 88, 363-373.
- Francois, L.E., Maas, E.V., Donovan, T.J. and Youngs, V.L. 1986. Effect of salinity on grain yield and quality, vegetative growth and germination of semi-dwarf and durum wheat. Agro. J. 78, 1053-1058.

- Gahan, P.B. 1984. Plant Histochemistry and Cytochemistry An Introduction. Academic Press, Inc. (London) Ltd.
- Galston, A.W. and Kaur-Sawhney, R. 1990. Polyamines in Plant Physiology. *Plant Physiol.* 94, 406-410.
- Giddings, T.H. and Hanson, A.D. 1982. Water stress provokes a generalized increase in phosphatidylcholine turnover in barley leaves. *Planta* 155, 493-501.
- Gill, K.S. and Singh, O.S. 1985. Effect of salinity on carbohydrate metabolism during Paddy (Oryza sativa L.) seed germination under salt stress conditions. Ind. J. Exp. Biol. 23, 384-386.
- Gilory, S. and Jones, R.L. 1994. Perception of gibberellin and abscisic acid at the external face of the plasma membrane of barley (*Hordeum vulgare* L.) alcurone protoplasts. *Plant Physiol.* 104, 1185-1192.
- Glauert, A.M. 1975. Fixation, Dehydration and embedding of biological specimens. In "Practical Methods in Electron microscopy" (ed.) Glauert. Part I, Vol. 3. North Holland Publishing Co. New York.
- Gomes Filho, E., Prisco, J.T., Campos, F.A.P. and Eneas Filho, J. 1983. Effect of NaCl salinity *invivo* and *invitro* on ribonuclease activity of *Vigna unguiculata*cotyledons during germination. *Physiol. Plant.* 59, 183-188.
- Gong, M. and Yang, X.F. 1994. Effect of calcium on salt resistance in maize seedlings. *Flant Physiol. Commun.* 30, 429-432.
- Gracia, L.A. and Guardiola, J.L. 1981. Effect of gibberellic acid on ion uptake selectivity in pea (*Pisum*) seedlings. *Planta* **513**, 494-496.
- Greenway, H. and Munns, R. 1980. Mechanism of salt tolerance in nonhalophytes. Ann. Rev. Plant. Physiol. 31, 149-190.
- Grist, D.H. 1965. Rice. Western Printing Services, Bristol.

- Gubler, F., Ashford, A.E. and Jacobsen, J.V 1987. The release of α -amylase through gibberellin treated barley aleurone cell walls. *Planta* **172**, 155-161.
- Guglielminetti, L. Yamaguchi, J., Perata, P. and Alpi, A. 1995 Amylolytic activities in cereal seeds under aerobic and anaerobic conditions. *Plant Physiol.* **109**, 1069-1076.
- Guye, M.G., Vigh, L. and Wilson, J.M. 1986: Polyamine titre in relation to chillsensitivity in *Phaseolus* sp. *J. Exp. Bot* **37**, 1036-1043.
- Hall, J.L. and Flowers, T.J. 1973. The effect of salt on protein synthesis in the halophyte *Suaeda maritima*. *Planta* **110**, 361-368.
- Hamada, A.M. 1994. Alleviation of the adverse effects of NaCl on germination of maize grains by calcium. *Biol. Plant.* **36**, 623-627.
- Hampson, C.R. and Simpson, G.M. 1990. Effects of temperature, salt, and osmotic potential on early growth of wheat (*Triticum aestivum*).
 I.Germination. *Can. J. Bot.* 68, 524-528.
- Hanson, J.B. 1984. The function of calcium in plant nutrition. In "Advances in Plant Nutrition." P.B. Tinker and A.Lauchli (eds.), Vol. I, pp. 149-208. Pracger, New York
- *Hatata, M. and Farah, M. 1982. Specific effects of certain salts on carbohydrate metabolism in young corn seedlings. Acta Societatis Botanicorum Poloniae 5, 81-90.
- Hiatt, A.C. and Malmberg, R.L. 1988. Utilization of putrescine in tobacco cell lines resistant to inhibitors of polyamine synthesis. *Plant Physiol.* 86, 441-446.
- *Hsu, S.C. and Sung, J.M. 1981. Effects of salinity on growth, ion relation and nitrate reductase activity in barley. *Proc. Natl. Sci. Council*, Republic of China. 5, 124-129.

Huang, J. and Redmann, R.E. 1995. Salt tolerance of *Hordeum* and *Brassica* species during germination and early seedling growth. *Can. J. Plant Sci.* 75, 815-819.

,

- Ilan, I. 1971. Evidence of hormonal regulation of selectivity of ion uptake by plant cells. *Physiol. Plant.* 25, 230-233.
- Jacobsen, J.V. and Knox, R.B. 1973. Cytochemical localization and antigenicity of α-amylase in barley aleurone tissue. *Planta* **112**, 213-224.
- Jacobsen, J.V., Zwar, J.A. and Chandler, P.M. 1985. Gibberellic acid responsive protoplasts from mature aleurone of Himalaya barley. *Planta* 163, 430-438.
- Jarvis, B.C., Yasmin, S., and Coleman, M.T. 1985. RNA and protein metabolism during adventitious root formation in stem cuttings of *Phaseolus aureus* cv Berkin. *Physiol Flant.* 64, 53-59.
- Jaya, M.V., Prakash, L. and Prathapasenan, G. 1990. Amelioration of the toxic effects on NaCl salinity on seedling growth, nitrate uptake and nitrate reductase activity of rice (*Oryza sativa* L. var. Bhura Rata) by GA. J. Singapore Natl. Aca. Sci. 18 & 19, 94-96.
- Johnson, R.C. 1991. Salinity resistance, water relations and salt content of crested and tall wheatgrass accessions. *Crop Sci.* **31**, 730-734.
- Jones, R.L. 1969. Gibberellic acid and fine structure of barley aleurone cells. I. Changes during the lag phase of α-amylase synthesis. *Planta* 87, 119-133.
- Jones, R.L. 1973. Gibberellins: their physiological role. Ann. Rev. Plant Physiol. 24, 571-598.
- Jones, R.L. 1980. Quantitative and qualitative changes in the endoplasmic reticulum of barley aleurone cells. *Planta* **150**, 70-81.

- Jones, R.L. 1985. Protein synthesis and secretion by the barley aleurone: A perspective. *Israel J. Bot.* 34, 377-395.
- Jones, R.L. and Jacobsen, J.V. 1991. Regulation of synthesis and transport of secreted proteins in cereal aleurone. In "International Review of Cytology, A survey of Cell Biology" K.W. Jean and M.Friedlander (eds.), 126, Academic Press, Inc. USA.
- Jones, R.L. and Price, J.M. 1970. Gibberellic acid and the fine structure of barley aleurone cells. *Planta* 94, 191-202.
- Juliano, J.B. and Aldama M.J., 1937. Morphology of Oryza sativa L. Philippine Agr. 26: 1-134.
- Kabar, K. 1990. Comparison of kinetin and gibberellic acid effects on seed germination under saline conditions. *Phyton* **30**, 291-298.
- *Kabar, K. and Kocacaliskan, I. 1990. Interactions among salinity (NaCl), polyphenol oxidase and growth regulators in the germination of wheat seeds. *Doga, Turk Botanik Dergisi* 14, 235-245.
- Kaneko, Y., Matsushima, H. and Morohashi, Y. 1991. Localization of amylase activity in cotyledons of germinated mung bean seeds. Can. J. Bot. 69, 1501-1506.
- Karmoker, J.L. 1984. Hormonal regulation of ion transport in plants. In "Hormonal Regulation of Plant Growth and Development" S.S.Purohit (ed.), Vol.I, pp. 219-264. Agro Botanical Publishers, Bikaner, India.
- Kaufman, P.B., Dayanandan, P., Takeoka, Y., Bigelow, W.C., Jones, J.D., and Iler,
 R. 1981. Silica in the shoots of higher plants. In "Silicon and siliceous structures in biological systems." T.L. Simpson and B.E. Volcani (eds.), pp. 409-499. Springer-Verlag, New York.

- Kaur-Sawhney, R., Flores, H.E., Galston, A.W. 1980. Polyamine induced DNA-Synthesis and mitosis in Oat leaf protoplasts. *Plant Physiol.* **65**, 368-371
- Kent, L.M. and Lauchli, A. 1985. Germination and seedling growth of cotton:Salinity - calcium interactions. *Plant Cell Environ.* 8, 155-159.
- Khan, M.A. and Unger. I.A. 1985. The role of hormones in regulating the germination of polymorphic seeds and early seedling growth of *Atriplex triangularis* under saline conditions. *Physiol. Plant.* **63**, 109-113.
- Khatun, S. and Flowers, T.J. 1995. Effects of salinity on seed set in rice. *Plant, Cell and Environ.* 18, 61-67.
- *Kiss, A.S. 1979. Germination stimulation by magnesium and the mechanism of action. Acta Agronomica Academiae Scientiarum Hungaricae 28, 384-390.
- Klinguer, S., Martin-Tanguy, and Martin, C. 1986. Potassium nutrition, growth bud formation and amine and hydroxycinnamic - acid amide contents in leaf explants of *Nicotiana tabacum* cv Xanthi N.C. cultivated *in vitro. Flant Physiol.* 82, 561-565.
- *Kocacaliskan, I. 1990. Effect of salinity on polyphenol oxidase during seed germination. *Doga, Turk Botanik Dergisi* 15, 41-49.
- Krishnamurthy, R., Anbazhagan, M. and Bhagwat, K.A. 1987. Effect of NaCl on the inorganic ions, growth and yield of rice. *Oryza* 24, 66-69.
- Lachno, D.R. and Baker, D.A. 1986. Stress induction of abscisic acid in maize roots. *Physiol. Plant*. 68, 215-221.
- Laidman, D.L., Colborne, A.J., Doig, R.L. and Varty, K. 1974. In "Mechanisms of regulation of plant growth". R.L. Bieleski, A.R. Ferguson and M.M.Cresswell (eds.), pp. 581-90. Proc. R. Soc., New Zealand.

- Lauchli, A. 1976. In "Transport and Transfer Processes in Plants. I.F. Wardlaw and J.S. Passionura, (eds.), Academic Press, New York.
- Lauriere, C., Doyen, C., Thevenot, C. and Daussant, J. 1992. B β-amylases in cereals: A study of the maize β-amylase system. *Plant Physiol* 100, 887-893.
- Leopold, A.C. 1975. Plant Growth and Development. Tata McGraw-Hill Publishing Company Limited, New Delhi.
- Levitt, J. 1972. Responses of Plants to Environmental Stresses. Vol I, Chilling, freezing and high temperature stresses. Academic Press, New York.
- Levitt, J. 1980. Responses of Plants to Environmental Stresses. Vol.II, Water radiation, salt and other stresses. Academic Press. New York.
- Lin, J.Y. 1985. Effects of plant growth regulators on seed germination and seedling growth of maize under saline stress. J. Agr. Assoc. China 131, 1-9.
- Lin, C.L. and Kao, C.H. 1995. NaCl stress in rice seedlings : Starch mobilization and the influence of gibberellic acid on seedling growth. *Botanical Bulletin of Academia Sinica* **36**, 169-173.
- Lutts, S., Kinet, J.M. and Bouharmount, J. 1995. Changes in plant response to NaCl during development of rice (*Oryza sativa* L.) varieties differing in salinity resistance. *J. Exp. Bot.* 46, 1843-1852.
- Mac Gregor, A.W., Mac Dougall, F.H., Mayer, C. and Daussant, J. 1984. Changes in levels of α-amylase components in barley tissues during germination and early seedling growth. *Plant Physiol*. **75**, 203-206.
- Mass, E.V. 1984. Salt tolerance of plants. In "Handbook of Plant Science in Agriculture" B.R.Cristie (ed.), CRC Press Inc. Boca Raton, Florida.

- Mass, E.V. and Nieman, R.H. 1978. Physiology of plant tolerance to salinity. In
 "Crop Tolerance to Suboptimal land Conditions". Jung. G.A. (ed.), pp. 277-299. American Society of Agronomy Specialists Pub. 32.
- Mass, E.V. and Poss, J.A. 1989. Salt sensitivity of wheat at various growth stages. *Irrigation Science* **10**, 29-40.
- Mayer, A.M. 1977. Metabolic control of germination. In "The Physiology and Biochemistry of Seed Dormancy and Germination", Khan, A.A. (ed.), pp. 357-381. Elsevier, The Netherlands..
- Mittal, R. and Dubey, R.S. 1990. Effect of NaCl salinity on RNA level as well as activity and molecular forms of ribonuclease in germinating rice seeds differing in salt tolerance. *Ind. J. Plant Physiol.* 35, 174-181.
- Mittal, R. and Dubey, R.S. 1991. Behaviour of peroxidases in rice: Changes in enzyme activity and isoforms in relation to salt tolerance. *Plant Physiol. Biochem.* 29, 31-40.
- Mittal, R. and Dubey, R.S. 1992a Behaviour of polyphenol oxidase, IAA oxidase and catalase in germinating rice in relation to salt tolerance. J. Agro. Crop Sci. 169, 270-280.
- Mittal, R. and Dubey, R.S. 1992b. Mitochondrial acid phosphatase and adenosine triphosphatase activities in germinating rice seeds following NaCl salinity stress. *Ind. J. Plant Physiol.* 35, 174-181.
- Mohamed, Y.A.H. and Hamada, E.A.M. 1988. Salinity stress and DNAse I in wheat (*Triticum aestivum* cv. Sakha 69) seedlings. *Pakistan J. Biochem.* 21, 17-20.
- Munns, R. 1985. Na⁺, K⁺ and Cl⁻ in xylem sap flowing to shoots of NaCl treated Barley. *J. Exp. Bot*. **36**, 441-445.

- Naqvi, S.M. and Ansari, R. 1974. Estimation of diffusible auxin under saline growth conditions. *Experimentia* **30**, 350-354.
- Nishizawa, N. and Mori, S. 1977. Invagination of plasmalemma. Its role in the absorption of macromolecules in rice roots. *Plant Cell Physiol.* 18, 767-782.
- Nishizawa, N. and Mori, S. 1978. Endocytosis (heterophagy) in plant cells:Involvement of ER and ER derived vesicles. *Plant Cell Physiol.* 19, 717-730.
- Okamoto, K. and Akazawa, T. 1979. Enzymatic mechanisms of starch breakdown in germinating rice seeds. 7. Amylase formation in the epithelium. *Plant Physiol.* 63, 336-340.
- Okamoto, K., Kitano, H. and Akazawa, T. 1980. Biosynthesis and excretion of hydrolases in germinating cereal seeds *Flant Cell Physiol*. 21, 201-204.
- Osmond,C.B. and Greenway, H. 1972. Salt responses of carboxylation enzymes from species differing in salt tolerance *Plant Physiol.* **49**, 260-263
- Panaullah, G.M., Saleque, M.A., Joyenuddin, M. and Bhuiyan, N.I. 1990. Influence of water potential in germination of direct seeded rice. *Intl. Rice Res. Newsletter* 15, 2.
- Parekh, T.V. and Chatpar, H.S. 1989. Effect of salt stress on the respiratory activity of *Aspergillus sydowii*. *Current Microbiology* **19**, 297-301.
- Penning De Vries, F.W.T. 1975. The cost of maintenance respiration in plant cells. *Ann. Bot.* **39**, 77-92.
- Perata, P., Guglielminetti, L. and Alpi, A. 1997. Mobilization of endosperm reserves in cereal seeds under anoxia. *Ann. Bot.* **79**, 49-56.
- Perata P., Pozueta-Romero, J., and Akazawa T. 1993. Effect of anoxia on starch breakdown in rice and wheat seeds. *Planta* **188**, 611-618.

- Petruzzelli, L., Melillo, M.T., Zacheo, T.B., Taranto, G. and Blevg Zacheo, T. 1992. Physiological and ultrastructural changes in isolated wheat embryos during salt and osomotic shock. *Ann. Bot.* 69, 25-31.
- Poljakoff-Mayber, A and Gale, J., 1975. In "Plants in saline environments" A. Poljakoff-Mayber and J. Gale (eds.), pp. 91-92. Springer-Verlag, Berlin Heidelberg, New York.
- Prakash, L. 1988. Response of paddy (*Oryza sativa* L. var GR-3) to saline environment. Ph.D. Thesis, The M.S. University of Baroda, Baroda, India.
- Prakash, L. Dutt, M. and Prathapasenan, G., 1988. NaCl alters contents of nucleic acids, protein, polyamines and the activity of agmatine deiminase during germination and seedling growth of rice (*Oryza sativa*L.). *Aust. J. Plant Physiol.* 15, 769-776.
- Prakash, L. and Prathapasenan, G. 1988a. Effect of NaCl salinity and putrescine on shoot growth, tissue ion concentration and yield of rice (*Oryza sativaL*. var. GR-3). J. Agro. Crop Sci. 160, 325-334.
- Prakash, L. and Prathapasenan, G. 1988b. Putrescine reduces NaCl induced inhibitation of germination and early seedling growth of rice (*Oryza sativa* L.). *Aust J. Plant Physiol.* 15, 761-767.
- Prakash, L. and Prathapasenan, G. 1990. NaCl and gibberellic acid induced changes in the content of auxin and the acitivities of cellulose and pectin lyase during leaf growth in rice (*Oryza sativa*). Ann. Bot. 65, 251-257.
- Ramagopal, S. 1988. Regulation of protein synthesis in root, shoot and embryonic tissues of germinating barely during salinity stress. *Plant Cell Environ*.11, 502-511.

- Rani, V.R. and Reddy, A.R. 1994. Salt stress responsive polypeptides in germinating seeds and young seedlings of indica rice (*Oryza sativa* L./J. *Plant Physiol.* 143, 250-253.
- Ranki, H. and Sopanen, T. 1984. Secretion of α-amylase by the aleurone layer and the scutellum of germinating barley grain. *Plant Physiol*. **75**, 710-715.
- Ranki, H., Mendez-Lozano, J. and Sopanen, T. 1994. Three carboxypeptidases occurring in the starchy endosperm of germinating barley grain have different sites of synthesis (aleurone layer, localization). *Physiol. Plant.* 91, 90-96.
- Reddell, P., Foster, R.D. and Bowen, G.D. 1986. The effects of sodium chloride on growth and nitrogen fixation in *Casuarina obesa* Miq. *New Phytol.* 102, 397-408.
- *Reggiani, R., Bozo, S. and Bertani, A. 1994. Changes in polyamine metabolism in seedlings of three wheat (*Triticum aestivumL.*) cultivars differing in salt sensitivity. *Plant Sci. Limerick* 102, 121-126.
- Reynolds, E.S. 1963. The use of lead citrate at high pH as an electron opaque stain in electron microscopy. J. Cell Biol. 17, 208-212.
- Rhodes, P.R. and Matsuda, K. 1976. Water stress, rapid polyribosome reduction and growth. *Plant Physiol.* 58, 631-635.
- Riedell, W.E. 1987. Effects of Ca²⁺ and polyamines on Na⁺ and Rb⁺ influx in excised maize roots. *Physiol. Plant.* 69, 299-304.
- Robert, R. 1994. The "Second India" Revisited: Population, Poverty and Environmental Stress over two decades. World Resources Institute, Washington D.C.

- Roberts, D.R., Dumbroff, K.B. and Thompson, J.E. 1985. Exogenous polyamines alter membrane fluidity in bean leaves-A basis for potential misinterpretation of their true physiological role. *Planta* 167, 395-401.
- Roberts, E.H. and Smith, R.D. 1977. Dormancy and the pentose phosphate pathway. In "The Physiology and Biochemistry of Seed Dormancy and Germination", Khan, A.A. (ed.), pp.385-406. Elsevier, The Netherlands.
- ^aRoth, H. 1989. The influence of NaCl or Na₂SO₄ substrate salinity on the growth and dry matter production of *Triticum aestivum* L., *Hordeum vulgare* L. and *Oryza sativa* L. under laboratory conditions. *Beitrage Zuv. Tropischen Landwirtschaft und Veterinarmedizin* 27, 305-311.
- Roy, D., Basu, N., Bhunia, A. and Banerjee, S.K. 1993. Counteraction of exogenous L-proline with NaCl in salt sensitive cultivar of rice. *Biol. Plant.* 35, 69-72.
- Roy, D., Bhunia, A., Basu, N., Chakraborty, A. and Banerjee, S.K. 1992. Influence of NaCl stress on phytase and nuclease activities in germinating seed of two rice varieties. *Ind. J. Plant Physiol.* 35, 213-217.
- Rugolo, M., Antognoni, F., Flamigni, A. and Zannoni, D. 1991. Effects of polyamines on the oxidation of exogenous NADH by Jerusalem artichoke (*Helianthus tuberosus*) mitochondria. *Plant Physiol*. **95**, 157-163.
- Sadhana K. and Dubey, R.S. 1990. Salinity induced accumulation of polyamines in germinating rice seeds differing in salt tolerance. *Trop. Sci.* 30, 229-240.
- Sadhana K. and Dubey, R.S. 1994. Behaviour of malate, isocitrate and glucose 6 phosphate dehydrogenases in germinating rice in relation to salt tolerance. *Trop. Sci.* 34, 231-240.

- Salim, M. and Pitman, M.G. 1983. Effects of salinity on ion uptake and growth of mung bean plants (*Vigna radiataL.*). Aust J. Plant Physiol. 10, 395-407.
- Sanwo, M.M. and DeMason, D.A. 1994. Gibberellic acid (GA₃)-induced enhancement of ∞-amylase activity in the aleurone of shrunken-2 maize kernels. *Amer. J. Bot.* 81, 987-996.
- Schmitt, N. and Dizengremel, P. 1989. Effect of osmotic stress on mitochondria isolated from etiolated mung bean and *Sorghum* seedlings. *Plant Physiol. Biochem.* 27, 17-26.
- Schuurink, R.C., Sedee, N.J.A. and Wang, M. 1992. Dormancy of the barley grain is correlated with gibberellic acid responsiveness of the isolated aleurone layer. *Plant Physiol.* 100, 1834-1839.
- Scott, T.K. 1984. Hormonal Regulation of Development II. The functions of hormones from the level of the cell to the whole plant. Encyclopedia of Plant Physiology, New Series, Vol.10. Springer-Verlag, Berlin
- Serefini-Fracassini, D. 1991. Cell cycle dependent changes in plant polyamine metabolism. In "Biochemistry and physiology of polyamines in plants. Slocum, R.D. and Flores, H.E. (eds.), pp. 93-103, CRC Press, Boca Raton.
- Sexton, R. and Hall, J.L. 1978. Enzyme cytochemistry. In "Electron Microscopy and Cytochemistry of Plant Cells" J.L.Hall (ed.), pp. 63-147. Elsevier/North Holland Biomedical Press, Amsterdam, The Netherlands.
- Shainberg, I. 1975. Salinity of soils Effects of salinity on the physics and chemistry of soils. In "Plants in Saline Environments" A. Poljakoff -Mayber and J Gale (eds.), pp. 39-40 Springer-Verlag, Berlin.
- Sharma, S.K. 1986. Mechanism of tolerance in rice varieties differing in sodicity tolerance. *Plant Soil* 93, 141-145.
- Sharma, S.K. and Gupta, I.C. 1986. Saline Environment and Plant Growth. Agro Botanical Publishers, India.

- Sheoran, I.S. and Garg, O.P. 1978. Effect of salinity on the activities of RNase, DNase and protease during germination and early seedling growth of mung bean. *Physiol. Plant.* 46, 147-150.
- Shininger, T.L. 1975. The morphological, anatomical and cytological effects of gibberellins. In "Gibberellins and Plant Growth" H.N. Krishnamoorthy (ed.) pp. 203-224, Wiley Eastern Limited, New Delhi.
- Simmonds, J.A. and Simpson, G.M. 1971. Increased participation of pentose phosphate pathway in response to after ripening and gibberellic acid treatment in caryopsis of *Avena fatua*. *Can. J. Bot* **49**, 1833-1840.
- Singh, G. and Singh, H. 1980. Effect of growth regulators on the growth parameters of chick pea grown under different salinity levels. *Ind. J. Agr. Sci.* 50, 23-30.
- Skadsen, R.W. 1993. Aleurones from a barley with low ∞-amylase activity become highly responsive to gibberellin when detached from the starchy endosperm. *Plant Physiol*. 1-2, 195-203.
- Slocum, R.D., Kaur-Sawhney, R., Galston, A.W. 1984. The physiology and biochemistry of polyamines in plants. Arch. Biochem. Biophys 235, 283-303.
- Smith, T.A. 1985. Polyamines. Ann. Rev. Plant Physiol. 36, 117-143.
- Smith, M.M., Hodson, M.J., Opik, H. and Wainwright, S.J. 1982. Salt induced ultrastructural damage to mitochondria in root tips of a salt sensitive ecotype of Agrostis stolonifera J.Exp. Bot. 33, 886-895.
- Soni, S.L. and Parry, D.W. 1973. Electron probe microanalysis of silicon deposition in the inflorescence bracts of the rice plant (*Oryza sativa*). *Amer. J. Bot.* 60, 111-116.

- Srivastava, S.K. and Smith, T.A. 1982. The effect of some oligoamines and guanidines on membrane permeability in higher plants. *Phytochem.* 21, 997-1008.
- Starck, Z. and Kozinska, M. 1980. Effect of phytohormones on absorption and distribution of ions in salt-stressed bean plants. Acta. Soc. Bot. Pol. 49, 111-126.
- Steer, M.W. 1988. The role of calcium in exocytosis and endocytosis of plant cell. *Physiol. Plant.* **79**, 213-220
- Stiborova, M., Ksinska, S. and Leblova, S. 1987. Mechanism of NaCl action on alcohol dehydrogenase and ribulose 1,5-biphosphate carboxylase from Barley. (*Hordeum vulgareL.*). *Eiologia* 42, 1191-1200
- *Sugimoto, K., Takeuchi, Y. and Toyama, M. 1985. Studies on the salt injury in indica rice. I. Germination percentage and transpiration as affected by various concentrations of sodium chloride. *Bulletin of the Faculty of Agriculture, Tottori University* 37, 205-211.
- Tabor, C.W. and Tabor, H. 1984. Polyamines. *Ann. Rev. Biochem.* 53, 749-790.
- Taiz, L. and Honigman, W.A. 1976. Production of cell wall hydrolyzing enzymes by barley aleurone layers in response to gibberellic acid. *Plant Physiol.* 58, 380-386.
- Taiz, L. and Jones, R.L. 1970. Gibberellic acid, B-1,3-glucanase and the cell walls of barley aleurone layers. *Planta* **92**, 73-94.
- Thevenot, C., Simond, C.E. and Daussant, J. 1991. Contribution of aleurone layer and scutellum to ∞-amylase synthesis and secretion in wheat and rice grains. *Physiol. Plant.* 82, 249-256.

- Thomson, W.W. and Platt-Aloia 1982. Ultrastructure and membrane permeability in cowpea seeds. *Plant Cell Environ.* 5, 367-373.
- Torres, W. and Echevarria, I. 1994 Germination and seedling growth of rice (Oryza sativa L.) at different NaCl concentrations. Cultivos Tropicales 15, 44-47.
- Varner, J.E. and Ho, D.T.H. 1977. Hormonal control of enzyme activity in higher plants. In "Regulation of Enzyme Synthesis and Activity in Higher Plants" H. Smith (ed.), pp 83-91, Academic Press, London.
- Varner, J.E. and Mense, R.M. 1972. Characteristics of the process of enzyme release from secretory plant cells. *Plant Physiol.* **49**, 187-189.
- Varty, K. and Laidman, D.L. 1976. The pattern and control of phospholipid metabolism in wheat aleurone tissue. J. Exp. Bot. 27, 748-758.
- Vegis, A. 1964. Dormancy in higher plants. Ann. Rev. Plant Physiol. 15, 185-224.
- Victoria, D. 1994. Population and the development. In "Population, Development and the environment". Cherry Fellow (ed.), Background papers, WWF International, Switzerland.
- Vigil, E.L. and Ruddat, M. 1973. Effect of gibberellic acid and actinomycin D on the formation and distribution of rough endoplasmic reticulum in barley aleyrone cells. *Plant Physiol.* 51, 549-558.
- Walker, M.A., Roberts, D.R., Shih, C.Y. and Dumbroff, E.B. 1985. A requirement for polyamines during the cell division phase of radicle emergence in seeds of *Acer saccharum*. *Plant Cell Physiol.* 26, 967-972.
- Watson, M.L., 1958. Staining of tissue sections for electron microscopy with heavy metals. J. Biochem. Biophys. Cytol. 4: 475-478.

- Weinstein, L., Kaur-Sawhney, R., Rajam, M.V., Wettlaufer, S., Galston, A.W. 1986. Cadmium induced accumulation of putrescine in oat and bean leaves. *Flant Physiol.* 82, 641-645
- Weselake, R.J., MacGregor, A.W. and Hill, R.D. 1985. Effect of endogenous barley ∞-amylase inhibitor on hydrolysis of starch under various conditions. J. Cereal Sci. 3, 249-259.
- Werker, E., Lerner, H.R., Weimberg, R. and Poljakoff-Mayber, A. 1983. Structural changes occurring in nuclei of barley root cells in response to a combined effect of salinity and ageing. *Amer. J. Bot.* 70, 222-225.
- Wolf, O., Munns, R., Tonnet, M.L. and Jeschke W.D. 1990. Concentrations and transport of solutes in xylem and phloem along the leaf axis of NaCl treated *Hordeum vulgare. J. Exp. Bot.* 41, 1133-1141.
- Wolf, O., Munns, R., Tonnet, M.L. and Jeschke, W.D. 1991. The role of the stem in the partitioning of Na⁺ and K⁺ in salt treated barley. *J. Exp. Bot.* 42, 697-704.
- Wood, A. and Paleg, L.G. 1972. The influence of GA₃ on the permeability of model membrane systems. *Plant Physiol.* **50**, 103-108.
- Wood, A. and Paleg, L.G. 1974. Alteration of liposomal membrane fluidity by gibberellic acid. *Aust J. Flant Physiol.* 1, 31-40.
- Wrobel, R. and Jones, B.L. 1992. Appearance of endoproteolytic enzymes during the germination of Barley. *Plant Physiol.* 100, 1508-1516.
- Wu, S.C. and Kuniyuki, A.H. 1985. Isolation and culture of almond protoplasts. *Plant Sci.* 41, 55-60.
- *Yasseen, B.T., Sulaiman, E.D. and Muhammad, A.A. 1988. Growth of prophyll and proline accumulation due to the effect of NaCl stress and temperature in two barley cultivars. *Iraqi J. Agri Sci* 6, 97-110.

- Yeo, A.R. and Flowers, T.J. 1983. Varietal differences in the toxicity of sodium ions in rice leaves. *Physiol. Plant.* 59, 189-195.
- Yeo, A.R., Karmer, D. Lauchli, A. and Gullasch, J. 1977. Ion distribution in salt stressed mature Zea mays roots in relation to ultrastructure and retention of sodium. J. Exp. Bot. 28, 17-29.
- Yeo, A.R., Yeo, M.E., Caporn, S.J.M., Lachno,D.R. and Flowers,T.J. 1985. The use of ¹⁴C-ethane diol as a quantitative tracer for the transpirational volume flow of water and an investigation of the effects of salinity upon transpiration, net sodium accumulation and endogenous ABA in individual leaves of *Oryza sativa* L. *J. Exp. Bot.* **36**, 1099-1109.
- Yoo, B.Y. 1970. Ultrastructural changes in cells of pea embryo radicles during germination J. Cell Bio. 45, 158-171
- Yoshida, S., Ohnishi, Y. and Kitagishi, K. 1962. Histochemistry of silicon in the rice plant III. The presence of cuticle-silica double layer in the epidermal tissue. *Soil Sci. and Plant Nutrition* 8, 1-5.
- Zimmermann, V. 1978. Physics of turgor and osmoregulation. Ann. Rev. Plant Physiol. 29, 121-148.
- Zhang, W.H. and Liu, Y.L. 1992. The mitigative calcium on salt stress in barley seedlings. *Plant Physiol. Commun.* 28, 176-179.
- Zheleva, D., Tsonev, T., Sergiev, I. and Karanov, E. 1994. Protective effect of exogenous polyamines against atrazine in pea plants. J. Plant Growth Regul. 13, 203-211.

*original not referred