



BIBLIOGRAPHY

- Abou-Zied, E.N. and Bakry, M.Y. (1978). The effects of GA₃, CCC and B-9 upon growth, development and organic compounds in *Primula obconica*. *Scientia Horticulturae*, **9** (2): 175-180.
- Adams, R. P., Habte, M., Park, S. and Dafforn, M.R. (2005) Preliminary comparison of Vetiver root essential oil from cleansed (bacteria and fungus free) versus non-cleansed (normal) Vetiver plants. *Biochemical Systematics and Ecology*, **36** (3): 177-182.
- Adams, R. P.; Habte, M.; Park, S. and Dafforn, M .R. (2004). Preliminary comparison of Vetiver root essential oils from cleansed (bacteria- and fungus-free) versus non-cleansed (normal) Vetiver plants. *Biochemical Systematics and Ecology*, **32**: 1137-1144.
- Adams, R. P.; Zhong, M. Srifah, P. and Sangduen, N. (1998). DNA genetic diversity of *Vetiveria zizanioides* (poaceae). *Phytologia*, **85**(2):85-95. ✓^a
- Adams, R. P.; Zhong, M. Y.; Turuspekov, D.M.R. and Veldkamp, J.F. (1998). DNA fingerprinting reveals clonal nature of *Vetiveria zizanioides* (L.) Nash, Graminae and source of potential new germplasm. *Molecular ecology*, **7**: 813-818. ✓^b
- Adzet, T. (2002). Phenolic compounds with biological and pharmacological activity. In: *Herbs Species and Medicinal Plants* (vol. I) (eds.) Craker, L. E. and Simon, J.E. (Publ.) CBS Press London, pp-167-183.
- Akhila, A.; Sharma, P. K. and Thakur, K. S. (1987). Biosynthesis of khusimol and allokhusiol in *Vetiveria zizanioides*. *Fototerapia*, **58**(4):243-248.
- Akman, Z. (2009). Effects of plant growth regulators on nutrient content of young wheat and barley plants under saline conditions. *Journal of Animal and Veterinary Advances*, **8** (10):2018-2021.
- Ali, M. B. , Hahn, E. J. and Paek, K. Y. (2007). Methyl jasmonate and salicylic acid induced oxidative stress and accumulation of phenolics in *Panax ginseng* bioreactor root suspension cultures. *Molecules*, **12**: 607-621.

- Andersen, N.H. (1970). Biogenetic implications of the antipodal sesquiterpenes of Vetiver oil. *Phytochem*, **9**:145-151.
- Andra, S. S.; Dattab, R.; Sarkar, D.; Makrisd, K. C.; Mullence, C. P.; Srifah, S. V. and Bache, S.B.H. (2009). Induction of lead of binding phytochelatin in Vetiver grass (*Vetiveria zizanioides*). *Environ. Qual.*, **38** : 868-877.
- Angin, I.; Turan, M.; Ketterings, U. M. and Cackiol, A. (2008). Humic acid addition enhances B and Pb phytoextraction by Vetiver grass (*Vetiveria zizanioides* (L.) Nash). *Water Air Soil Pollut.*, **88**: 335-343.
- Arnon, D. I. (1949). Cupper enzymes isolated chloroplasts: Polyphenol oxidase in *Beta vulgaris*. *Plant Physiol.*, **24**: 1-15.
- Barrett-Lennard, E. G.; Robson, A. D. and Greenway, H. (1982). Effect of phosphorus deficiency and water deficit on phosphatase from wheat leaves. *J. Expt. Bot.*, **33**: 682-693.
- Be, L. V.; Tan, V. T.; Vyen, N. T. T. and Dung, L.V..(2008). Low cost micropropagation of Vetiver (*V. zizanioides* L.). *AUJT.*, **12**(1):18-24.
- Beevers, L. and Hageman, R. H. (1969). Nitrate reduction in higher plants. *Ann. Rev. Plant Physiol.*, **20**: 495-522.
- Belakbir, A., Lamrani, Z. and Romero, L. (1996). Effects of bioregulators on iron and manganese concentrations in leaves and fruits of pepper plants. *Journal of Plant Nutrition*. **19** (8 & 9):1269 – 1277.
- Benjaporn, B.; Preeda, P.; Sombun, T.; DeLaune, R. D. and Aroon, J. (2005) Phytoaccumulation of Lead by Sunflower (*Helianthus annuus*), Tobacco (*Nicotiana tabacum*), and Vetiver (*Vetiveria zizanioides*). *Journal of Environmental Science and Health, Part A*, **40** (1) : 117 – 137.
- Bertea, C. M.; Scannerini, S. D.; Agostino, G.; Mucciarelli, M.; Cammuso, W.; Bossi, S. Buffa, G. and Maffei, M. (2001). Evidences for C4 NADP-ME photosynthetic pathway in *Vetiveria zizanioides* Stapf. *Plant Biosystems*, **135** (3): 249-262.

- Besford, R. T. (1980). A rapid tissue test for diagnosis in tomato plant. *Ann. Bot.*, **45**: 225-227.
- Bewley, J.D. and Black, M. (1994). *Seeds, Physiology of development and germination.* (Publ) Plenum Press, New York and London.
- Bhattacharya, A. K. and Rajeswara Rao, B. R. (1996). Effect of triacontanol and mixtalol on rose-scented geranium (*Pelargonium* sp.). *J. Essent. Oil Res.*; **8**: 383.
- Bhatwadekar, S. V., Pednekar, P. R., Chakravarti, K. K. and Paknikar, S. K. (1982). A survey of sesquiterpenoids of Vetiver oil. In: *Cultivation and utilization of aromatic plants.* (eds). Atal, C.K. and Kapur, B.M.. RRL, CSIR, Jammu-Tawi, pp-412-426.
- Bittenbender H. C., Dilley D. R., Wert V. and. Ries S. K. (1978). Environmental Parameters Affecting Dark Response of Rice Seedlings (*Oryza sativa* L.) to Triacontanol. *Plant Physiology.* **61**: 851-854.
- Boo, H. O. ; Chon, S. U. and Lee, S. Y. (2006). Effects of temperature and plant growth regulators on anthocyanin synthesis and phenylalanine ammonia-lyase activity in chicory (*Cichorium intybus* L.) *Journal of horticultural science and biotechnology*, **81** (3): 478-482.
- Bor, N.L. (1960). *Grasses of Burma, Ceylon, India and Pakistan*, Pergamon Press, Oxford.
- Brandt, R.; Kraft, S. R.; Markl, N.; Infante, C. and Broll, G. (2006). Potential of Vetiver (*Vetiveria zizanioides* (L.) Nash) for phytoremediation of petroleum hydrocarbon contaminated soils in Venezuela. *International J of Phytoremediation*, **8** (4): 273-284.
- Buchi, G.; Hauser, A. and Limacher, J. (1977). The synthesis of khusimone. *Journal of Organic Chemistry*, **42**(20):3323-3324.
- Butler, L.G. (1992). Antinutritional effects of condensed and hydrolysable tannins. In: *Plant polyphenols* (eds.) Hemingway, R.W. and Laks, P.E.: pp- 693-698.

- Campbell, W. H. (1999). Nitrate reductase structure, function and regulation : Bridging the gap between biochemistry and physiology. *Annu. Rev. Plant Physiol. Plant Mol. Biol.*, **50**:277-303.
- Caspar, T. and Lacoppe, J. (1968). The effect of CCC and Amo-1618 on growth, catalase, peroxidase and indoleacetic acid oxidase activity of young barley seedlings. *Physiol.Plant.*, **21** (5): 1104 – 1109.
- Castro, P. R. C., Malavolta, E. and Oliveiraa, G. D. (1983). Effects of growth regulators on mineral nutrition of tomato. *Journal of Plant Nutrition*. **6** (8): 717 – 724.
- Chappell, J. (1995). Biochemistry and molecular biology of the iso-prenoid biosynthetic pathway. *Ann. Rev. Plant. Physiol. Mol. Biol.*, **46**: 521–547.
- Chattergy, S.; Pramanick, N.; Chattopadhyay, S.; Muniak, K. and Kolhapure S. A. (2005). Evaluation of the efficacy and safety of “Nourishing Baby Oil” in infantile xerosis. *The Antiseptic*, **102** (4): 179-182.
- Chen, F.; Wang, X. and Kim, H. (2003). Antioxidant, Anticarcinogenic and Termiticidal activities of Vetiver oil. The Third International Conference on Vetiver and Exhibition Vetiver and Water. October 6-9, 2003, Guangzhou, P. R. China, (eds.) Truong, P. and Xia H., In: *An Eco-Technology for Water Quality Improvement, Land Stabilization, and Environmental Enhancement*, China Agriculture Press, September 2003, p:546-549.
- Chidrawar, C. D. (1996). Germination studies in Soybean (*Glycine max* L.). A thesis submitted to Shivaji University, Kolhapur.
- Chiu, K. K., Ye, Z. H. and Wong, M. H. (2006). Growth of *Vetiveria zizanioides* and *Phragmatis australis* in Pb/Zn and sewage sludge: A greenhouse study. *Bioresource Technology*, **97** (1): 158-170.
- Cho, J. H., Kim, J. C., Kim, M. K. and Li, H. S. (2002) Fungicidal activities of 67 herb derived oils against six phytopathogenic fungi. *Agricultural Chemistry and Biotechnology*, **45** (4):202-207.

- Chomchalow, N. (2000). Techniques of Vetiver propagation with special referencing to Thailand. Pacific Rim Vetiver Network. Bangkok, Thailand. *Technical Bulletin* No. 2000 (1). :1-28.
- Chomchalow, N. (2001). The utilization of Vetiver as medicinal and aromatic plants with special reference to Thailand. Pacific Rim Vetiver Network, *Technical Bulletin* No. 2001 (1):1-18.
- Chomchalow, N. and Hicks, P.A. (2001). Health potential of Thai traditional beverages. *AUJT*, 5:20-30.
- *Chowdhury, S. R.; Tandon, P.K. and Chowdhury, A.R. (2009). Chemical Analysis of Essential Oil of *Vetiveria Zizanioides* (Linn.) Nash. Roots. *Indian J of Agricultural Biochem.*, 22(1):
- Chowdhury, S. R., Anand, P.S.B. and Kumar, A. (2009). Triaccontanol induced changes in kernel dry matter, carbohydrate content and yield of water chestnut (*Trapa bispinosa* L.) fruit. *Indian Journal of Plant Physiology*. 14(1): 88-91.
- Clarkson, D. T. and Hanson, J. B. (1980). The mineral nutrition of higher plants *Annu. Rev. Plant Physiol.*, 31: 239-298.
- Cooper, J.E. and Rao, J.R. (1992). Localized changes in flavonoid biosynthesis in roots of *Lotus pedunculastus* after infection by *Rhizobium loti*. *Plant Physiol.*, 100: 444-450.
- Coronado, M. A. G.; Lopez, C. T. and Saavedra, A. L. (1998). Effects of salicylic acid on the growth of roots and shoots in soybean. *Plant Physiol. and Biochem.* 36(8): 563-565.
- Cramer, W. A.; Furbacher, P. N.; Szczepaniak, A. and Tae, G. S. (1991). Electron transport between photosystem II and photosystem I. *Current Topics in Biogenetics*, 16: 179-222. In: *Vetiveria :The Genus Vetiveria*, (2000). (ed.) Maffei M., (Pub.) Taylor and Francis, CRC press, pp-191.
- Crawford, L.M.; Smith, M.; Bellissino, D. and Davis, R.W. (1988). Sequencing and nitrate regulation of the *Arabidopsis thaliana* mRNA coding nitrate

- reductase, a metalloflavoprotein with three functional domains. *Proc. Natl. Acad. Sci., USA*, **85**: 5006-5010.
- Crawford, N. M., Khan, M.L., Leustek, T. and Long, S.R. (2000). Nitrogen and sulphur. In: *Biochemistry and Molecular biology of plants*, (eds.) Buchanan, B., Gruissem, W. and Jones, R. (Publ.) American Society of Plant Physiologist, pp. 736-849.
- Cronquist, A. (1981). An integrated system of classification of flowering plants. In: *The New York Botanical Garden*, (Pub.) Columbia University Press.
- Cunningham, F. J. and Gantt, E. (1998). Genes and enzymes of carotenoid biosynthesis in plants. . *Ann. Rev. in Plant Physiol. and Plant Mol. Biol.*, **49**: 557-583.
- Czerpak, R., Dobrzyn, P., Krotke, A. and Kicinska, E. (2002). The effect of auxins and salicylic acid on chlorophyll and carotenoid contents in *Wolffia Arrhiza* (L.) Wimm. (*Lemnaceae*) growing on media of various trophicities. *Polish J. of Environ. Studies*. **11** (3): 231-235.
- Dagar, J. C.; Tomar, O. S.; Kumar, Y. and Yadav, R. K. (2004). Growing three aromatic grasses in different alkali soils in semi-arid region of Northern India. *Land Degradation and Development*, **15** (2):143-151.
- Dalton P.A.; Smith, R.J. and Truong, P. (1996) Vetiver grass hedges for erosion control on a cropped flood plain: hedge hydraulics. *Agricultural Water Management*, **31**: 91 – 104.
- Dauben, W. G. and Hart, D.J. (1977). A general method of preparing functionalized spirocycles synthesis of spiro vetivane sesquiterpene. *Journal of the American Chemical Society*, **99**(22):7307-7314.
- de la Rosa, M.A.; Vega, J.M. and Zumft, W.G. (1981). Composition and structure of assimilatory nitrate reductase from *Ankistrodesmus braunii* . *J Biol Chem.*, **256**: 5814-5819.

- Dekock, P. C.; Vaughan, D. and Hall, A. (1978). Effect of abscisic acid and benzyl adenine on the inorganic and organic composition of the duckweed, *Lemna Gibba* L. *New Phytol.*, **81**: 505-511.
- Deleo, P. and Sacher, J. A. C. (1970). Senescence: Association of synthesis of Acid phosphatase with banana ripening. *Plant Physiol.*, **46** (2): 208-211.
Demonstration and Extension. *Proceedings abstracts. International*
- Deshpande, R.S.; Bhaskar, S.; Hegde, N. and Neelkanta, N.T. (2008). Cultivation of medicinal crops and aromatic crops as means of diversification in agriculture. (Consolidated Report). (Ed.) Deshpande, R.S., (Publ.) Agricultural Development and Rural Transformation Centre, Institute for Social and Economic Change Nagarbhavi, Bangalore pp: 219.
- *Dey, P. M. (1990). (eds.) Methods in plant biochemistry. Vol II *Carbohydrates*. (Publ.) Acad. Press London.
- Dikshit, A. and Husain, A. (1984) Antifungal action of some essential oils against animal pathogens. *Fitoterapia*, **55** (3): 171-176.
- Dong, Z.; Xie, X.; Lu, X.; Guo, H. and Sun, X. (2003). Study on the genetic diversity of Vetiver grasss (*Vetiveria zizanioides*). In: *Proc the third international conference on Vetiver and exhibition Vetiver and water. An eco-technology for water quality improvement, land stabilization, and environmental enhancement*, (eds.): Truong, P. and Hanping, X. (publ.) The Vetiver Network China Agriculture Press .pp-6-9.
- Duff, S. M. G.; Lefebvre, D. D. and Plaxton, W. C. (1991). Purification, characterization of an acid phosphatase from *Brassica nigra* suspension cells. Comparison with phosphoenolpyruvate phosphatase. *Arch. Biochem. Biophys.*, **286**:226-232.
- Duff, S. M. G.; Sarath, G. and Plaxton, W. C. (1994). The role of phosphatase in plant phosphorus metabolism. *Physiol. Plant.*, **90**: 791-800.
- Dukpa, N.; Legha, P. K. and Dhunge, D. (1996). The effect of environment on adaptability, growth and development of Vetiver grass (*Vetiveria* ✓

- zizanioides* L.) In: *Vetiver: A Miracle Grass*, Chiang Rai (Thailand), 4-8 Feb.1996.
- Durner, J. and. Klessig, D. F. (1995). Inhibition of ascorbate peroxidase by salicylic acid and 2, 6-dichloroisonicotinic acid, two inducers of plant defense responses. *Proc. Natl. Acad. Sci.,* **92**: 11312-11316.
- El-Keltawi, N. E. and Croteaua, R. (1987). Influence of herbicides and growth regulators on the growth and essential oil content of sage. *Phytochemistry.* **26** (3):675-679.
- Epstein, E. (1972). Mineral nutrition of plants: Principles and Perspectives. (Publ.) John Wiley and Sons Inc. New York., London, Sydney, Toronto
- Eraslan, F., Inal, A., Gunesa, A. and Alpaslana, M. (2007). Impact of exogenous salicylic acid on the growth, antioxidant activity and physiology of carrot plants subjected to combined salinity and boron toxicity. *Scientia Horticulturae.* **113** (2): 120-128.
- *Esau, K. (1977). Anatomy of seed plants, 2nd edition, (Publ.):Wiley and Sons, New York.
- Fariduddin, Q., Hayat, S. and Ahmad, A. (2003), Salicylic Acid Influences Net Photosynthetic Rate, Carboxylation Efficiency, Nitrate Reductase Activity, and Seed Yield in *Brassica juncea*. *Photosynthetica* **41**(2): 281-284.
- Farooqi, A. H. A. and Sharma, S. (1998). Effect of growth retardants on growth and essential oil content in Japanese mint. *J. Plant Growth Regu.,* **7** (1): 39-45.
- *Farooqi, A. H. A., Khan A. and Srivastava A.K. (2010). Ameliorative effect of paclobutrazol and chlormequaton drought stressed plants of *Vetiveria Zizanioides*. *Ind. J. of Plant Physiol.,* **15** (1):
- Folin, O. and Denis, W. (1915). A calorimetric estimation of phenol and phenol derivatives in urine. *J. Biol. Chem.,* **22**: 305-308.

- Gamburg, K. Z. (1978). The influence of 1-naphthaleneacetic acid and (2-chloroethyl)-trimethylammonium chloride on the carotenoid content of tobacco tissue in suspension culture. *J. Biol. Plant.*, **20** (2): 93-97.
- Gangrade, S. K.; Srivastava, R. D.; Sharma, O. P.; Jain, N. K. and Trivedi, K. C. (1991). *In vitro* antifungal effect of the essential oils. *Indian Perfumer*, **35** (1): 46-49.
- Gangrade, S.K.; Srivastava, R. D.; Sharma, O. P.; Moghe, M. N. and Trivedi, K. C. (1990). Evaluation of some essential oils for antibacterial properties. *Indian Perfumer*, **34** (3):204-208.
- Ganguly, R.N., Trivedi, G.K. and Bhattacharya, S.C. (1978). Khusiol a biogenetically significant from Vetiver oil. *Indian J of Chem section B Organic Chem. including Medi. Chem.*, **16**(1):23-26.
- Gellate, K. ; Moorhead, G.B.G.; Duff, S.M.G. ; Lefebvre, D.D. and Plaxton, W.C. (1993). Purification of a potato tuber acid phosphatase having characteristics of a protein tyrosine phosphatase. *Plant Physiol.*, **102**:5-27.
- *George, E. F. (1993). Plant propagation by tissue culture. I. The technology. (Publ.) Edington: Exegetits ltd.
- George, M. M. and Subramanian, R. B. (1999). High frequency regeneration of *Vetiveria zizanioides* (l.) via mesocotyl culture. *Phytomorphology*, (**49**): 309-313.
- *Gianfagna, T. J., Durner, E. F. and Salas, S.Q. (1986). Evaluation of plant growth regulators as possible replacement compounds for Alar in apple production : *ISHS Acta Horticulturae* 239: VI International Symposium on Growth Regulators in Fruit Production.
- Gliozeris, S., Tamosiunas, A. and Stuopyte, L. (2007). Effect of some growth regulators on chlorophyll fluorescence in *Viola × wittrockiana* 'Wesel Ice'. *Biologija*, **53**(2): 24-27.

- Golbeck, J. M. (1992). Structure and function of photosystem-I. *Ann. Rev. Plant Physiol. Plant Mol. Biol.*, **43**: 293-324.
- Gopi, R.; Jaleel C. A.; Divyanair V., Azooz M.M. and Panneerselvam R. (2009). Effect of paclobutrazol and ABA on total phenol contents in different parts of holy basil (*Ocimum sanctum*). *Acad. J. of Plant Sci.*, **2** (2): 97-101.
- Grass Genera of the World- *Vetiveria* Bory. Watson, L. and Dallwitz, M. J. (<http://delta-intkey.com/grass/www/vetiveri.htm>).
- Greenfield, J.C. (1988). Vetiver Grass (*Vetiveria zizanioides*). A Method of Soil and Moisture Conservation. 2nd ed. The World Bank, New Delhi.
- Greppin, H. and Horn, R. (1969). Action of (+)-catechol on *Pseudomonas fluorescens*. *Experientia*, **25**: 429-430.
- Grimshaw, R.G. (1990). Vetiver Grass, The Hedge against Erosion. (Ed.) Grimshaw, R.G., (Publ.) The World Bank, Washington, D.C. pp: 74.
- Guangzhou, P. R. China, (Ed.): Paul Truong, and Xia Hanping, (Pub.): China Agriculture Press, pp:486-491.
- Gudrupa, I., Kruzmane, D. and Ievinsh, G. (2002). Effect of CCC and pH on shoot elongation in *Sedum rubrotinctum* R.T. Clausen. *Plant Science*, **163** (3): 647-651.
- Gupta, D. K., Srivastava, A. and Singh, V. P. (2008). Phytoremediation of induced lead toxicity in *Vigna mungo* (L.) Hepper by Vetiver grass. (ed.) Truong, P. TVNI. First Indian National Vetiver Workshop, Cochin, India, 23 Feb., 2008.
- Gurnani, D.; Shrivastava, D. K., Idnani, N. and Holkar, A. S. (2003). Correlation and path analysis in Vetiver (*Vetiveria zizanioides*). *J of Medicinal and Aromatic Plant Sci.*, **25**(4): 959-964.
- Gurudatt, P. S. ; Priti, V.; Shweta, S.; Ramesha, B. T.; Ravikanth, G.; Vasudeva, R.; Amna, T.; Deepika, S.; Ganeshaiyah, K. N.; Shaanker, R. U., Puri, S. and Qazi, N. (2010). Changes in the essential oil content and composition

of *Origanum vulgare* L. during annual growth from Kumaon Himalaya. *Curr. Sci.*, **98** (8): 1010-1012.

Hahlbrock, K. and Scheel, D. (1989). Physiology and molecular biology of phenylpropanoid metabolism. *Annu. Rev. Plant Physiol. Plant Mol. Biol.*, **40**: 347-369.

Halbrock, K. S. and Grisebach, H. (1979). Enzymic controls in the biosynthesis of lignin and flavonoids. *Annu. Rev. Plant Physiol.*, **30**:105-130.

Hamza, A.M. and Helaly, M.N.M. (1982). Interaction between chlormequat (ccc) and Gibberellin (GA3) on growth, flowering and mineral constituents of some ornamental plants. *Acta Hort. Growth Regulators*, **137**:197-210.

Hatch, M.D. and Slack, C.R. (1966). Photosynthesis by sugar-cane leaves. A new carboxylation reaction and the pathway of sugar formation. *Biochem J.*, **101**: 103-111.

Heller, W. and Forkmann, G. (1988). Biosynthesis. In: *The Flavonoids: Ad. in Res. Sci., 1980*. J. B. Harborne (eds.) Chapman and Hall, London: 399-425.

*Henrique, A., Campinhos E. N., Ono E. O. and de Pinho S. Z. (2006). Effect of plant growth regulators in the rooting of *Pinus* cuttings. *Braz. arch. biol. technol.* **49** (2) :

Hewitt, E.J. (1975). Assimilatory nitrate and nitrite reduction. *Annu Rev of Plant Physiol.*, **26**:75-54.

Hocking, P. G., Kuo, J. and Pate, J. S. (1980). Mineral nutrition of developing fruits of the western Australian Christmas tree. *Nuytsia floribanda*. *Aust. J. Bot.*, **28**(1):1-17.

Hongto, K.; Wattanatum, S. and Popan, P. (1996). Comparative study on growth, root system and yield of different ecotypes of Vetiver grass. *Conference Vetiver: A Miracle Grass*, Chiang Rai (Thailand), 4-8 Feb, 1996.

- Horiguchi, T. (1988). Mechanism of manganese toxicity and tolerance of plants IV. Effects of silicon on alleviation of manganese toxicity of rice plants. *Soil SciPlant Nutr.*, **34**: 65-73.
- Hormaetxe, K. ; Becerril, J. M.; Fleck, I.; Pinto, M. and Plazaola, J. (2005). Functional role of red (retro)- carotenoids as passive light filters in leaves of *Buxus sempervirens* L.; Increased protection of photosynthetic tissues ? *J. Exp. Bot.*, **56** (420): 2629-2636.
- <http://prvn.rdpb.go.th/files/icv/CP-5-9.DOC> Application of vetiver grass technology in offsite pollution control: Tolerance to herbicides under selected wetland conditions R. Cull, H. Hunter, M. Hunter, P. Truong Queensland Department of Natural Resources, Brisbane, Queensland, Australia
- http://www.Vetiver.org/AUS_Research%20Proposal%20vet%20oil.pdf Luu, T. D. A Ph. D. Thesis Proposal. Development of process for purification of α and β -vetivone from Vetiver essential oil and investigation of effects of heavy metals on quality and quantity of extracted Vetiver oil. School of Chemical Sciences and Engineering. University of New South Wales University, Sidney.
- Huang, J.H.H.; Yang, J.; Chen, Y.; Liu, Y.; Li, N. and Nie, C. (2004). Chemical components of *Vetiveria zizanioides* volatiles. *Yingyong-Shengtai-Xuebao*, **15**(1):170-172.
- Ingham, L. M.; Paker, M. L. and Waldron, K. W. (1998). Peroxidase: Changes in soluble and bound forms during maturation and ripening of apples. *Physiol. Plant.*, **102**: 93-100.
- Ishimaru, K., Arakawa, H. and Neera, S. (1993). Polyphenol production in cell cultures of *Cornus kousa*. *Phytochemistry*. **32** (5): 1193-1197.
- Ishizuka, Y. (1964). Nutrient uptake at different stages of growth. In: *The mineral nutrition of the rice plant. Proc. Sympos. Inter. Rice Resa. Inst.* (Publ.) The Johns Fopkins press, Baltimora, Maryland. pp-199-217.

- Jain, A. and Srivastava H. S. (1981). Effect of salicylic acid on nitrate reductase activity in maize seedlings. *Physiologia Plantarum*. **51** (4): 339 – 342.
- Jain, A. and Srivastava, H. S. (1984). Effect of phenolic acids on anthocyanin content in maize roots. *Journal Biologia Plantarum*. **26** (4): 241-245.
- Jain, V. K. and Guruprasad, K. N. (1989). Effect of chlorocholine chloride and gibberellic acid on the anthocyanin synthesis in radish seedlings. *Physiol. Plant.*, **75** (2): 233 – 236.
- Jaspers Focks, D.J., (2006). “*Vetiver* grass as bank protection against vessel-induced load”. *Msc-thesis Delft University of Technology*, Faculty of Civil Engineering, Department of Hydraulic Engineering.
- Jaworski, E. G. (1971). Nitrate reductase assay in intact plant tissues. *Biochem. Biophys. Res. Commun.*, **43**: 1274-1279.
- Jeong, G., Woo, J. and Park, D. (2007). Effect of plant growth regulators on growth and biosynthesis of phenolic compounds in genetically transformed hairy roots of *Panax ginseng* C. A. Meyer. *Biotechnology and bioprocess engineering*. **12** (2): 86-91.
- Jindal, K. K., Pal, S., Chauhan, P. S., and Mankotia, M. S. (2004). Effect of Promalin and mixtalol on fruit growth, yield efficiency and quality of 'Starking Delicious' apple. *Acta Hort. (ISHS)* **636**:533-536.
- *Jin-xiang, L.; Wen-song, L. and Hong-yan, L. (2005). A primary report on biological characteristics and insect pest of seeding reproductive *Vetiver* grass. *Pratacultural Science*, **04**:
- Kaiser W. M., Spill, D. and Gilaab, J. (1993). Rpid modulation of nitrate reductase in leaves and roots: indirect evidence for the involmenment of protein phosphorylation/ dephosphorylation. *Physiol. Plant.* **89**: 557-562.
- Kalsi, P. S.; Kaurt, B. and Talwar, K.K. (1985). Stereostructure of Norkhusinoloxide a new antipodal 14-carbon terpenoid from *Vetiver* oil confirmation of stereostructural features by biological evaluation a new

- tool for prediction of stereostructure in Cadinanes. *Tetrahedron*, **41**(16): 3388-3390.
- Kalsi, P.S. and Talwar, K.K. (1987). Stereostructure of vetidiol a new antipodal sesquiterpene diol from Vetiver oil a novel role of biological activity to predict the position and stereochemistry of one of the hydroxyl group. *Tetrahedron*, **43**(13):2985-2988.
- Kalsi, P.S.; Arora, G.S. and Chinna, K. (1985). Structure and absolute configuration of khusitoneol a new 14 carbon ketolalcohol from Vetiver oil. *Indian J of Chem including medicinal chem.*, **24**(2): 496-498.
- Kamenam, A. and Diopoh, J. (1983). Properties of two membrane bound acid phosphatase compared with those of a cytoplasmic acid phosphates from *Dioscorea rotundata*. *Plant Sci, lett.*, **32** : 305 – 312.
- Kantawanichkul, S.; Pilaila. S.; Tanapiyawanich, W.; Tikampornpittaya W. and Kamkrua, S. (1999). Wastewater treatment by tropical plants in vertical-flow constructed wetlands. *Wat. Sci. Tech.*, **40**: 173-178.
- Kapoor, A.C. and Li, P. H. (1982). Effects of age and variety on nitrate reductase and nitrogen fractions in potato plants. *J. Sci., Food. Agric.*, **33**: 401-406.
- Karkhanis, D.W.; Trivedi, G.K. and Bhattacharya, S.C. (1978). Minor sesquiterpene alcohols of North Indian Vetiver isolation and structure of iso valencenol vetiselineol and iso vetiselineol. *Indian Journal of Chemistry including medicinal chemistry*, **16**(4):260-263.
- Khan M.M.A.; Bhardwaj G.; Naeem M., Moinuddin.; Mohammad F., Singh M., Nasir, S. and Idrees, M. (2009). Response of tomato (*Solanum lycopersicum* L.) to application of Potassium and Triacontanol. *Acta Hort.* (ISHS) **823**:199-208.
- Khan, W., Prithiviraj, B. and Smith, L. D. (2003). Photosynthetic responses of corn and soybean to foliar application of salicylates. *Journal of Plant Physiology*, **160** (5): 485-492.

- Kim, H. J.; Chen, F.; Wul, C. and Wang, X. (2005). Evaluation of antioxidant activities of Vetiver oil (*Vetiveria zizanioides*) and its components. *J of Agric and Food Chem.*, **53**(20):7691-7695.
- Kim, K. Y., Huh, G. H., Lee, H. S., Kwon, S. Y., Hur, Y. and Kwak, S. S. (1999). Molecular characterization of cDNAs for two anionic peroxidases from suspension cultures of sweet potato. *Mol. Genet. Genomics*, **261**:941-947.
- Kirakosyan, A.; Seymour, E.; Kaufman, P.; Warber, S.; Bolling, S. and Chang, S. C. (2003). Antioxidant capacity of polyphenolic extract from leaves of *Crataegus laevigata* and *C. monogyna* (hawthorn) subjected to drought and cold stress. *J. Agric. Food Chem.*, **51**: 3973- 3976.
- Kirk, J.O.T. and Allen, R.L. (1965). Dependence of chloroplast pigment synthesis on protein synthesis. Effect of actidione. *Archh Biochem. Biophys. Res. Commun.*, **21**:523-530.
- Knypl, S. and Janas, K. M. (1979). Light and molybdenum requirements for substrate induction of nitrate reductase in cotyledons of lettuce, *Lactuca sativa* L. *J. Biol. Plant.*, **21** (3): 214-219.
- Kochian, L. V. (2000). Molecular physiology of mineral nutrient acquisition, transport and utilization In: *Biochemistry and Molecular Biology of Plants*. (eds.) Buchanan, B. B; Gruissem, W. and Jones, R.L.(Publ.) I.K. Intr. Privet limited, New Delhi, Mumbai. pp- 1204-1249.
- Koiwa, H.; Ikedar, T. and Yoshida, Y. (1986). Reversal of chromoplasts to chloroplast in *Buxus* leaves. *Botanical Magazine, Tokyo.*, **99**: 233-240.
- Kongprakhon, P.; Sangduen, M. and Namwongprom, K. (2003). Karyomorphological study of Vetiver germplasm in Thailand. *AUJT*, **75**-80.
- Koseva-kovacheva, D. and Staev, D. (1978). Effect of some growth regulators and hydrogen peroxide on the content and quality of peppermint oil. *Restenedni dni u Nauki*. **15**: 21-25.

- Kuiper, P. J. C., Kahr, M., Stuiver, C.E. E. and Kylin, A. (1974). Lipid composition of whole roots and of Ca^{2+} , Mg^{2+} activated adenosine triphosphates from wheat and oat as related to mineral nutrition. *Physiol. Plant.*, **32** : 33-36.
- Kumaravelu, G., Livingstone, V. D. and Ramanujam, M.P. (2000). Triacontanol-induced changes in the growth, photosynthetic pigments, cell metabolites, flowering and yield of green gram. *Biol. Plant.*, **43** (2): 287-290.
- Lakshmanaperumalsamy, P. (2008). Application of Vetiver for water and soil restoration. In: *Proc first Indian national Vetiver workshop, Vetiver system for environmental protection and natural disaster management* (ed.): Truong, P. Cochin, India. pp- 21-23.
- Lal, R.K.; Sharma, J.R and Naqvi, A.A. (1999). Genetic viability and exploitation in Vetiver grass *Vetiveria zizanioides*. *J Medi and Aromatic Plant Sci.*, **21**(4)963-968.
- Lavania U. C. (2003). Other Uses, and Utilization of Vetiver: Vetiver Oil. In: *Proceedings, The Third International Conference on Vetiver and Exhibition Vetiver and Water, An Eco-Technology for Water Quality Improvement, Land Stabilization, and Environmental Enhancement*, October 6-9, 2003
- ✓ Lavania, U. C. (1988). Enhanced productivity of the essential oil in the artificial autopolyploid of Vetiver (*Vetiveria zizanioides* L. Nash). *Euphytica*, **38**(3): 271-276.
- Lavania, U. C. (2003). Other Uses, and Utilization of Vetiver: Vetiver Oil. The Third International Conference on Vetiver and Exhibition Vetiver and Water. October 6-9, 2003, Guangzhou, P. R. China, Editors-in-Chief: Paul Truong, and Xia Hanping, *An Eco-Technology for Water Quality Improvement, Land Stabilization, and Environmental Enhancement*, China Agriculture Press, September 2003, pp:486-491.

- Lavana, U. C. (2008). Other Uses, and Utilization of Vetiver: Vetiver Oil. In: *Proc first Indian national Vetiver workshop, Vetiver system for environmental protection and natural disaster management* (ed.): Truong, P., Cochin, India. pp-486-491.
- Lavana, U. C.; Lavana, S. and Vimala, Y. (2004). Vetiver system ecotechnology for water quality improvement and environmental enhancement. *Current Science*, **86** (1): 10.
- Lavana, U.V.(1985). Nuclear DNA and karyomorphological studies in Vetiver (*Vetiveria zizanioides*). *Cytologia*, **50**(1): 177-186.
- Le Van, D. and Truong, P. (2006). Vetiver grass for sustainable agriculture on adverse soils and climate in South Vietnam. In: *Proc fourth international Vetiver Conf. Vetiver and People*, Caracas, Venezuela, Oct. 2006.
- Le Viet D. ; Luu, T. D. ; Le T. P. and Truong, P. (2003). Vetiver System for wave and current erosion control in the Mekong Delta, Vietnam. Proceedings of the Third International Conference on Vetiver and Exhibition, Guangzhou, China pp 340-348.
- Lee, R. B. (1988). Phosphate influx and extracellular phosphatase activity in barley roots and rose cells. *New Phytol.*, **109**: 141-148.
- Lefebore, D. D., Duff, S. M. G., Fite, C., Julien-Inalsingh, C. and Plaxton, W. C. (1990). Response to phosphate deprivation in *Brassica nigra* suspension cells. Enhancement of intracellular, cell surface and secreted phosphatase activities compared to increase in Pi absorption rate. *Plant Physiol.*, **93**: 504 – 511.
- Lesniak, A. P. and Ries, S. K. (1983). Changes in enzyme activity of corn seedlings after foliar application of triacontanol. *Journal of Plant Growth Regulation*. **2** (1) :121-128.
- Letan, A. (1967). The possible transference of flavonol antioxidants from the diet to the tissue lipid of rats. *Brit J Nutr*, **21**: 315-323.

- Leupin, R. (2001). *Vetiveria zizanioides*: an approach to obtain essential oil variants via tissue culture. A dissertation submitted to the Swiss Federal Institute of Technology Zurich for the degree of Doctor of Natural Sciences. Zurich. Pags: 184.
- Leupin, R. E.; Leupin, M.; Ebret, C.; Erismann, K. H. and Witholt, B. (2000). Compact callus induction and plant regeneration of a non-flowering Vetiver from Java. *J Plant Cell Tissue and Organ cult.*, **62**, (2): 115-123.
- *Li Ya H. *et al.* (2008) Responses of *Vetiveria zizanioides* to waterlogging stress, *Journal of Anhui Agricultural Sciences*, **05**.
- Li, H. C.; Rice, E. L.; Rohrbaugh, L. M. and Wender, S. H. (1970). Effects of abscisic acid on phenolic content and lignin biosynthesis in tobacco tissue culture. *Physiologia Plantarum*, **23**(5): 928 – 936.
- Li, H.; Luo, Y.M.; Song, J.; Wu L.H. and Christie, P. (2006). Degradation of benzo[a]pyrene in an experimentally contaminated paddy soil by Vetiver grass (*Vetiveria zizanioides*). *Environ Geochem Health*, **28**(1–2):183–188.
- Liao, X.; Luo, S.; Wu, Y. and Wang, Z.(2003). Studies on the Abilities of *Vetiveria zizanioides* and *Cyperus alternifolius* for Pig Farm Wastewater Treatment. Proceedings: *The Third International Conference on Vetiver and Exhibition. Vetiver and Water An Eco-Technology for Water Quality Improvement, Land Stabilization, and Environmental Enhancement*, October 6-9, 2003, Guangzhou, P. R. China. (Ed.): Paul Truong, and Xia Hanping, (Publ.)China Agriculture Press, pp:174-181.
- Lichtenthaler, H. K. (1999). The 1-deoxy-D-xylulose-5-phosphate pathway of isoprenoid biosynthesis in plants. *Ann Rev Plant Physiol. and Plant Mol. Biol.*, **50**: 47-65.
- Lin, B.; Liu, J.; Xiao, S. and Yang, Y. (2006). Diurnal changes of photosynthetic characteristics of native *Vetiveria zizanioides* in Western Guangdong. *Yingyong Shengtai Xuebao*, **17** (11):2041-2045.

- Lindhauer, M. G. (1989). The role of K⁺ in cell extension growth and storage of assimilates. In: *Proceedings of XXIst International Potash Institute*, Lovain-la-Neure / Belgium :pp-161-187.
- Litchenthaler, H. K. (1999). DOXP-pathway of plant isoprenoid bio-synthesis. *Ann Rev Plant Physiol Plant Mol. Biol.*, **50**: 45–63.
- Liu ,Y.; Huang, C.R.; Tomar, O. S.; Kumar. Y.; Ma, B. and Xu, L. (2004). ✓
Changes of photosynthesis and physiological index in *Vetiveria zizanioides* under heat and drought stress. *Forest Res.*, **19**(5): 638-642.
- *Liu, J. and Wang, M. (2005). Influence of waterlogging stress on the growth and photosynthesis of *Vetiveria zizanioides*. *Pratacultural Science*, **07**.
- *Liu, J.; Li, W. and Li, H. (2005) A primary report on biological characteristics and insect pest of seeding reproductive Vetiver grass. *Pratacultural Science*, **22** (4).
- Liu, J. and Li, W. (2005). Photosynthesis physiology of sexual reproductive *Vetiveria zizanioides* under stimulated light source. *Shengtai Xue Zazhi.*, **24**(4):390-394.
- Liu, X.; Shen, Y.; Lou, L.; Ding, C. and Cai, Q.(2009). Copper tolerance of the biomass crops Elephant grass (*Pennisetum purpureum* Schumach), Vetiver grass (*Vetiveria zizanioides*) and the upland reed (*Phragmites australis*) in soil culture. *Biotechnol Adv.*, **27**(5):633-40.
- Lowry, O. H.; Rosenbrough, N. J.; Furr, A.L. and Randall, R.J. (1951).Protein measurement with folin phenol reagent. *J. Biol. Chem.*, **193**: 262-263.
- Lu, H.; Xiaoping, Z. and Liu, B. (2005) Responses of *Vetiveria zizanioides* to Pb²⁺ stress. *Yingyong Shengtai Xuebao*, **16** (11): 2178-2181.
- Luekaewma, V.; Chompunukulart, S. and Chulak, P. (1996). Study on root depth ✓
and density of vetiver grass. *AGRIS record*, Record number TH2002003027, pp:26.

- Luqman, S.; Kumar, R.; Kaushik, S.; Srivastava, S. ;Darokar, M. P.and Khanuja, S. P. (2009). Antioxidant potential of the root of *Vetiveria zizanioides* (L.) Nash. *Indian J Biochem Biophys.*, **46**(1):122-125.
- Luqman, S.; Srivastava, S.; Darokar, M. P. and Khanuja, S. P. S. (2005). Detection of antibacterial activity in spent roots of two genotypes of aromatic grass *Vetiveria zizanioides*. *Pharmaceutical Biology*, **43** (3): 732-736.
- Maffei, M.; Scannerini, S.; Bertea, G. and Mucciarelli, M. (1985). Photosynthetic enzyme activities in *Vetiveria zizanioides* cultivated in temperate climate. *Biochem System and Ecol.*, **23**(1): 27-33.
- Maharashtra State Gazetters (1961). General series, vol. A, Part III-Miscellaneous plants. Pp-82.
- Mahdavian, K., Kalantari, K. M. and Ghorbanli, M. (2007). The effect of different concentrations of salicylic acid on protective enzyme activities of pepper (*Capsicum annum* L.) plants. *Pak J Biol Sci.*, **10**: 3162-3165.
- Mairapetyan, S.K. (1999). Aromatic plant culture in open-air hydroponics. *Acta Hort.*, **502**:33-42.
- Maistrello, L.; Handerson, G. and Laine, R. A. (2002). Comparative effects of Vetiver oil, nootkatone and disodium tetrahydrate on *Coptotermes formosanus* and its symbiotic fauna. *Pest management Science*, **59** (1): 58-68.
- Mallavarapu, G. R., Kulkarni, R. N., Baskaran, K., Rao, L., and Ramesh, S. (1999). Influence of plant growth stage on the essential oil content and composition in Davana (*Artemisia pallens* Wall.). *J Agric Food Chem.* **47** (1): 254–258.
- Markis, K.C.; Shakya, K.M.; Datta, R.; Sarkar, D. and Pachanoor, D. (2007). High uptake of 2,4,6-trinitrotoluene by Vetiver grass—potential for phytoremediation. *Environ Pollut*, **146**(1):1–4.
- Marschner, H. (1986). *Mineral nutrition of higher plants*. (Publ.) Acad. Press. London, New York.

- Marschner, H. (1995). *Mineral Nutrition of Higher Plants*. IInd (Publ.) :Academic Press. London.
- Martinez, J.; Rosa, P. T. V.; Menut, C.; Leydet, A.; Brat, P.; Ballet, D. and Meiveles, M. A. A. (2004). Volarization of Brazillian Vetiver (*Vetiveria zizanioides* (L.) Nash ex Small). *Journal of Agriculture and Food Chemistry*, **52**(21): 6578-6584.
- Marwaha, R. S. (1998). Nitrate assimilation in potato cultivars during plant growth. *Indian J. Plant Physiol.*, **3**(2): 147-151.
- Massardo, D. R. and Senatore, F. (2006). Vetiver oil production correlates with early root growth. *Biochem System and Ecol.*, **34**(5): 376-382.
- Mathur, A. K.; Ahuja, P. S.; Pandey, B. and Kukreja, A. K. (1989). Potential somaclonal variations in the genetic improvement of aromatic grasses. In: *Tissue culture and Biotechnology or medicinal and aromatic plants* (publ.), CIMAP, Lucknow. Pp-78-89.
- Mcdonald, M. P.; Galwey, N. W. and Colmer, T. D. (2002). Similarity and diversity in adventitious root anatomy as related to root aeration among a range of wetland and dryland grass species. *Plant cell and envirn.*, **25** (3): 441-451.
- McLachlan, K. D.; Elliott, D. E.; De Marco, D. G. and Garran, J. H. (1987). Leaf acid phosphatase isozymes in the diagnosis of phosphorus status in field-grown wheat. *Aust J Agric Res.*, **38**: 1-13.
- Mengel, K. and Kirkby, E. A. (1982). 'Principles of Plant Nutrition' IIIrd (ed.) (Publ.) Int. Potash Inst. Bern, Switzerland.
- Mettcalfe, C. R. (1960). Anatomy of the Monocotyledons. I. Gramineae, *Oxford University, London*.
- Mickovski, S.B.; Vanbeek, L.P.H. and Salin, F. (2005). Uprooting resistance of Vetiver grass (*Vetiveria zizanioides*). *Plant and Soil*, **278** (1-2):33-41. ✓

- Miernyk, J. A. (1992). Purification and characterization of the major acid phosphatase isozyme secreted by maize endosperm cultures. *Phytochemistry*, **31**:2613-2616.
- *Mishra V.K., Ranade D.H., Gupta Ram K., Solanki C.M. (1995). Hydrological Behaviour and Rooting Patterns of Some Grass Species in Vertisol . *Journal of the Indian Society of Soil Science* **43**(4):
- Misra, A. and. Srivastava, N. K. (1991). Effect of the triacontanol formulation 'Miraculan' on photosynthesis, growth, nutrient uptake, and essential oil yield of Lemongrass (*Cymbopogon flexuosus*) Steud. Watts. *Plant Growth Regulation*, **10**(1):57-63.
- Moharekar, S. T., Lokhande, (Moharekar) S. D., Hara, T., Tanaka, R., Tanaka, A. and Chavan P. D. (2003). Effect of salicylic acid on chlorophyll and carotenoid contents of wheat and moong seedlings. *Journal Photosynthetica*, **41** (2): 315-317.
- Monge, E., Aguirre, R. and Blanco, E. E. (1994). Application of Paclobutrazol and GA3 to Adult Peach Trees: Effects on nutritional Status and Photosynthetic Pigments. *Journal of Plant Growth Regulation*, **13**(1):15-19.
- Mongkon, T. (2002). Potential of Vetiver grass on element accumulation. *Conference KKU annual agricultural seminar, Khaon Kaen (Thailand)*.
- Morakul, S.; Vijarnsorn, P.; Anecksamphant C.;. Rajani, S.; Chinapan, W.; Sukhkasem, A.; Taejajai, U.; Pothinam, A. and Tepnarapapai P. (2000). Research on selection, propagation and cultivation techniques of Vetiver grass and Their application in Thailand. Land Development Department Thailand, *Proceedings of the Second International Vetiver Conference (ICV2), January 2000*, pp: 69-91.
- Moula, G. and Rahman, S. (2008). A Tiller Effects of Vetiver Grass (*Vetiveria zizanioides* (L.) Nash). *AU Journal of Technology, Letters*.

- Mucciarelli, M.; Berteà, C.M. and Cmmuso, W. (2009). Sugar metabolism of *Vetiveria zizanioides* also cultured with Amberlite XAD-4. Uptake of radiolabelled sugars, cellwall invertase activity and gene expression. *J. of Plant Interactions*, **4**(1):23-31. ✓
- Mucciarelli, M.; Gallino, M.; Scannerini, S. and Maffei, M. (1993). Callus induction and plant regeneration in *Vetiveria zizanioides*. *Plant Cell Tissue and Organ culture*, **35** (3):267-271.
- Munson, R. D. (1998). Principles of plant analysis. In: *Hand Book of Reference Methods for Plant Analysis*. (eds.). Kalra, Y. P. (Publ.) Soil and Plant Analysis Council, Inc. pp.1-24.
- Murray, J. R. and Hackett, W.P. (1991). Dihydroflavonol reductase activity in relation to differential anthocyanin accumulation in juvenile and mature phase *Hedera helix* L. *Plant Physio*, **97**: 343-351.
- Murty, U. S. and Jamil, K. (1987). Effect of the South Indian Vetiver oil *Vetiveria zizanioides*. *International Pest Control*, **29** (1): 8-9.
- Naeem, M.; Khan, M. M. A.; Moinuddin and Siddiqui; M. H. (2009). Triacontanol stimulates nitrogen-fixation, enzyme activities, photosynthesis, crop productivity and quality of hyacinth bean (*Lablab purpureus* L.). *Scientia Horticultura*, **121** (4): 389-396.
- Nash (1903). Flora of the Southeastern United States **67**, 1326. (Tropicos.org. Missouri Botanical Garden.)
- Nelson, N. (1944) : A Photometric adaptation of the Somogyi method for the determination of glucose. *J Biol Chem.*, **153** : 375-380.
- Nenova, V. R. and Stoyanov, I. G. (2000). Effects of some growth regulators on young iron deficient maize plants. *Biologia Plantarum*, **43** (1): 35-39.
- Niimi, Y. (1979). Physiological effects of CCC [cycocyl (chloromequat)] on the growth of grapevine. *Journal of the Japanese Society for Horticultural Science* (Japan), **48**(2):153-161.

Nishimura, M. and Beevers, H. (1978). Hydrolyses in vacuoles from castor bean endosperm. *Plant Physiol.*, **62**: 44 - 48.

✓ Nix, K. E.; Henderson, G.; Zhu, B. C. R. and Laine, R. A. (2006). Evaluation of Vetiver grass root growth, oil distribution, and repellency against formosan subterranean termites. *Hort Scien.*, **41**(1): 167-171.

Oraphin, C.; Pawadee, M. and Krisda, S. (2004). Structural elucidation of hemicelluloses from Vetiver grass. *Carbohydrate Polymers*, **57**, (2). 191-196.

Ozeki, Y. and Komamine, A. (1986). Effects of growth regulators on the induction of anthocyanin synthesis in carrot suspension cultures. *Plant and Cell Physiology.*, **27** (7): 1361-1368.

Panara, F. ; Pasquilini, S. and Antonielli, M. (1990). Multiple forms of barley root acid phosphatase : purification and some characteristics of the major cytoplasmic isozymes. *Biochem Biophys Acta.*, **1037** : 73-80.

Pang, J.; Chan, G.S.Y; Zhang, J.; Liang, J. and Wong, M.H. (2003). Physiological aspects of Vetiver grass for rehabilitation in abandoned metalliferous mine wastes. *Chemosphere*, **52**(2003):1559-1570.

? Paquin, D.; Ogoshi, R.; Campbell, S. and Li. Q.X. (2002). Bench-scale phytoremediation of polycyclic aromatic hydrocarbon-contaminated marine sediment with tropical plants. *Int J Phytoremediation*, **4**:297-313.

✓ Parihar, S. S.; Mal, B.; Shankar, V. and Kak, A. (1998). Seed production and germination in Vetiver grass (*Vetiveria zizanioides*). *Tropical Grassland*, **32**:173-177.

Pasqua, G; Monacelli, B.; Mulinacci, N.; Rinaldi, S.; Giaccherini, C.; Innocenti, M. and Vinceri, F. F. (2005). The effect of growth regulators and sucrose on anthocyanin production in *Camptotheca acuminata* cell cultures. *Plant Physiology and Biochemistry*, **43** (3): 293-298.

Patra, D.D.; Chand, S.; Singh, A.; Anwar, M.; Lal, R. K.; Singh, S.; Bahl, J.R. and Khanuja, S.P.S. (2004). Agrotechnology of Vetiver [*Vetiveria zizanioides*

- (L) Nash]. *Journal of Medicinal and Aromatic Plant Sciences*, **26**(4): 784-789.
- Pawadee, M.; Oraphin, C.; Parjaree, T. and Krisda, S. (2003). Hemicellulosic polymer from Vetiver grass and its physicochemical properties. *Carbohydrate Polymer*, **54**(3):335-342.
- Payamanonta, R.; Snitwongse, P. and Mahisarakul, J. (1996). Root characteristics and root distribution studies of some Vetiver grass (*Vetiveria zizanioides* L. Nash and *Vetiveria normalis* A. Camus) in Thailand by using P32 tracer technique. *Conference Vetiver: A Miracle Grass*, Chiang Rai.
- Pfau* and Plattner (1940). The vetiveane sesquiterpenes. *ibid.* **23**: 768
http://www.scripps.edu/chem/baran/images/grpmtgpdf/Burns_Dec_04.pdf
- Pitman, M. G. (1976). Ion uptake by plant roots. In: *Transport in plants. II. Part B: Tissues and organs*. In: *Encyclopedia of Plant Physiology*, (ed.). Luttage U. and Pitman, M. G. (Publ.) New series, Springer verlag New York. **2**(part B): 95-128.
- Poathong S.; Suksaran W.; Panichpol V.; Thungtumnyom N. and Phaikaew C. (1999) Yield and palatability trails of vetiver. *AGRIS record, Record number TH2002001264*, Conference [3th seminar on development and campaign on using of vetiver grass under the King's initial project, pp. 68-69.
- Pobehai, S.; Rangasarit, S.; Kanit, S. and Sompong, S. (1996). Study on the rates of chemical fertilizer for growth and biomass of Vetiver grass. *Conference Vetiver: A Miracle Grass*, Chiang Rai (Thailand).
- Polya, G. M. and Hunziker, K. (1987). Purification and properties of high affinity guanosine 3': 5' cyclic monophosphate binding phosphatase from silver beet leaves. *Plant Sci.*, **50**: 117-123.
- Potdar, G. G. (2006). Taxonomical studies on Grasses of Maharashtra. Ph. D. Thesis, Vol: **2**, pp: 413-414.

Prasad, T. K.; Anderson, M. D.; Martin, B. A. and Stewart, C. R. (1994). Evidence for chilling-induced oxidative stress in maize seedlings and a regulatory role for hydrogen peroxide. *Plant Cell*, **6**: 65-74.

✓ Prasertsongskun, S.; Sangduen, N.; Suwanwong, S.; Santisopasri, V. and Matsumoto, H. (2002). Increased activity and reduced sensitivity of glutamine synthetase in glufosinate-resistant Vetiver (*Vetiveria zizanioides* Nash) cells. *Weed Biology and Management* **2** (4): 171 – 176.

Prasertsongsuk, S. (2003). Plant regeneration from callus culture of Vetiver (*Vetiveria zizanioides* Nash) Sangklanakaran. *J. Sci. Technol.*, **25**(5): 637-642.

Prasertsongsuk, S. and Songklanakaran.(2004). Isolation and culture of suspension protoplast of Vetiver. *J. Sci Technol.*, **26**(3): 411-416.

Pratt, H. (1936). Characters anatomique et histologiques de Andropogonees del Afrique occidentale. *Ann Mus. Colon. Marseille.ser.S.S.*:25-28. In: *Vetiveria :The Genus Vetiveria*, (2000). (ed.)Maffei M., (Pub.) Taylor and Francis, CRC press, pp-191.

Pripdeevech, P.; Wongpornchai, S and Promsiri, A. (2006).Highly volatile constituents of *Vetiveria zizanioides* roots grown under different cultivation conditions. *Molecules* ,**11**(10): 817-826.

Putiyanan, S.; Nantachit, K.; Bunchoo, M.; Khantava, B. and Khamwan, C. (2005). Pharmacognostic identification and antimicrobial activity of *Vetiveria zizanioides*. *Chiang Mai Med. Bull.*, **44**(3): 85-90.

Radwan, A. A.; El-Fouly, M .M. and Garas, N. A. (1971). Retarding stem elongation and stimulating dry matter production and yield of potato with chlormequat chloride (CCC). *Potato Research*, **14** (3):173-180

Rajalekshmi, K. M., Jaleel, C. A., Azooz, M.M. and Panneerselvam, R. (2009). Effect of triazole growth regulators on growth and pigment contents in *Plectranthus aromaticus* and *Plectranthus vettiveroids*. *Advances in Biological Research*. **3** (3-4): 117-122.

- Rajendrudu, G. and Das, V.S.R. (1981). C4 Photosynthetic abnormalities in the leaves of aromatic tropical grasses I. Leaf anatomy, CO₂ compensation point and CO₂ assimilation. *J. of Phtos Res.*, **2**(4): 225-233. ✓
Record number US9632603. 8(4) : 383-388.
- Reda, F.; Baroty, G. S. A.; Talaat, I. M.; Abdel-Rahim, I. A. and Ayad, H. S. (2007). Effect of some growth regulators and vitamins on essential oil, phenolic content and activity of oxidoreductase enzymes of *Thymus vulgaris* L. *World Journal of Agricultural Science*. **3** (5): 630-638.
- Reilly, M. L. (1976). The nitrate assimilation capacity of some Irish-grown wheat (*Triticum vulgare*) varieties II. An *in vitro* assessment of nitrate reductase activity and its relatuion to productivity. *Proc R Ir Acad B*. **76**: 555-566.
- Rensing, L. and Cornelius, G. (1980). Biologische Membranen als komponenten oszillierender Systeme. *Biol. Rundsch.*, **18** : 197-209.
- Rice-Evans, C. A.; Miller, M. J. and Paganga, G. (1997). Antioxidant properties of phenolic compounds. *Trends in Plant Sci.*, **2** :153-159.
- Rock, C. D. and Zeevaart, J. A. D. (1991). The ABA mutant of *Arabidopsis thaliana* is impaired in epoxy-carotenoids biosynthesis. *Proceedings of the National Academy of Sciences, USA*. **88**: 7496-7499.
- Rodriguez, O.D. (1993). Vetiver grass technology for soil conservation on steep agricultural land. Proc. Inter. Workshop on Soil Erosion Processes on Steep lands, Merida, Venezuela.
- Rongtanakiat, N.; Tangruangkiat, S. and Meesat, R. (2007). Utilization of Vetiver grass *Vetiveria zizanioides* for removal of heavy metals from industrial wastewater. *Science Asia*, **33**: 397-403.
- Roongtanakiat, N.; Osotsapar, Y. and Yindiram, C. (2009). Influence of heavy metals and soil amendmets on vetiver (*Chrysopogon zizanioides*) Grown in Zinc Mine Soil. *Kasetsart J. Nat. Sci.*, **43** : 37 – 49.
- Rotkittikhun, P.; Chaiyarat, R.; Kruatatrachue, M.; Pokethitiyook, P. and Baker, A.J.M (2007). Growth and lead accumulation by the grasses *Vetiveria*

- zizanioides* and *Thysanolaena maxima* in lead-contaminated soil amended with pig manure and fertilizer: A glasshouse study. *Chemosphere*, **66**(1): 45-53.
- Russell, R. S. and Clarkson, D. T. (1976). Ion transport in root systems. In: *Perspectives of Experimental Biology*, (eds.) Savies P. S. and Sunderlal, N. (Publ.) Pergamon Press, Inc., New York. **2**: 401-411.
- Saffari, V. R.; Khalighi, A.; Lesani, H.; Babalar, M. and Obermaier, J. F. (2004). Effects of Different Plant Growth Regulators and Time of Pruning on Yield Components of *Rosa damascena* Mill. *International Journal of Agriculture and biology*, **6** (6): 1040-1042.
- Samia, M. E., Tahani, A. H., Abd, E. A. A. and Abd, A. K. (2009). Brassinolide and Salicylic acid induced growth, biochemical activities and productivity of maize plants grown under salt stress. *Research Journal of Agriculture and Biological Sciences*, **5** (4): 380-390.
- Sangduen, N. and Prasertsongsuk, S. (2009). Regeneration and application from suspension culture derived inflorescence of *Vetiveria zizanioides*(L) Nash to selection of herbicide resistant cell. *AUJT.*, **12**(3):135-148.
- Sangwan, N. S.; Farooqi, A. H. A.; Shabih, F. and Sangwan, R. S. (2001). Regulation of essential oil production in plants. *Plant Growth Regulation*. **34**: 3-21.
- Sathya Shanker, P. and Subba Rao, G. S. R. (1994). Total synthesis of (\pm)-allocedrol [Khusiol]. *Tetrahedron Letters*, **35**(28):5055-5058.
- Schachtman, D. P.; Reid, R. J. and Ayling S.M. (1998). Phosphorus Uptake by Plants: From Soil to Cell. *Plant Physiol*, **116**: 447-453
- Sellar*, W. (1992) The Directory of Essential oils C.W Daniel Co. Ltd; Great Britain.
- Sen, S.K.; Pradhan, M.B. and Behera, L.M. (2001). Ethnomedicinal plants used against dysurea at Bargarh district in Orissa. *Adv in Plant Sci.*, **14**(2): 459-462.

- Servettaz, O., Castelli, D. and Longo, C. P. (1975). The effect of benzyladenine on anthocyanin accumulation in excised sunflower cotyledons. *Plant Science Letters*, **4** (6): 361-368.
- Shah, T. and Prathapasenan, G. (1991). Effect of CCC on the Growth and Yield of Mung bean (*Vigna radiata* [L.] Wilczek var. *Guj-2*). *Journal of Agronomy and Crop Science* .**166**(1):40 – 47.
- Shanthamma, C. and Narayan, K.N. (1976). Studies in Poaceae. *J of Mysore Uni.*, **27** (1-2):302-305.
- *Sharma, D. P. and Joolka, N. K. (1997). Effect of bioregulators on chlorophyll, carbohydrates and photosynthetic efficiency of apple cv. Red Delicious. *Indian Journal of Horticultur*. **54** (4):
- Sharma, N., Kaur, N. and Gupta, A. K. (1998). Effects of gibberellic acid and chlorocholine chloride on tuberisation and growth of potato (*Solanum tuberosum* L). *Journal of the Science of Food and Agriculture*. **78** (4): 466 – 470.
- Shasany, A. K.; Lal, R.K.; Khanuja, S.P.S.; Darokar, M.P. and Kumar, S. (1998). ✓
Comparative analysis of 4 elite genotype of *Vetiveria zizanioides* through RADP profiling. *J. of Med. and Agro Plant Sci.*, **20**(4):1022-1025.
- *Shealy, C.N. (1998) The illustrated Encyclopedia of Healing Remedies. Brideg water Book co.
- Shu, W. S.; Xia, H. P.; Zhang, Z. Q.; Lan C. Y. and Wong, M. H. (2002). Use of Vetiver and three other grasses for revegetation of Pb/Zn mine tailings : Field experiment. *Internaitonal Journal of Phytoremediation*, **4** (1):47-57.
- Singh*, S. N., Singh, A. K., Singh, O. P. and Chandra, H. (2007). Effect of antitranspirants on photosynthesis and nitrate reductase activity in wheat under water stress condition. *Indian Journal of Agricultural Biochemistry*. **20** (1):

- Singh, A., and Singh, P. K. (2008) Salicylic acid induced biochemical changes in cucumber cotyledons. *Indian Journal of Agricultural Biochemistry*. **21**(1&2): 1185-1190.
- Singh, B. and Usha, K. (2003). Salicylic acid induced physiological and biochemical changes in wheat seedlings under water stress. *Journal Plant Growth Regulation*, **39** (2): 137-141.
- a Singh, S. K.; Juwarkar, A. A.; Kumar, S.; Meshram, J. and Fan M. (2007). Effect of amendment on phytoextraction of arsenic by *Vetiveria Zizanioides* from soil. *Int. J. Environ. Sci. Tech.* **4** (3): 339-344.
- b Singh, S.; Eapen, S.; Thorat, V.; Kaushik, C. P.; Raj, K. and D'Souza, S.F. (2008) Phytoremediation of ¹³⁷cesium and ⁹⁰strontium from solutions and low-level nuclear waste by *Vetiveria zizanioides*. *Ecotoxicology and Environmental Safety*, **69** (2): 306-311.
- b Singh, S.; Melo, J. S.; Eapen, S. and D'Souza, S. F. (2008). Potentila of Vetiver (*Vetiveria zizanioides* L. Nash) for phytoremediation of phenol. *Ecotoxicology and Enironmental Safety*. **71**(3):671-676.
- Sircar, S. M., and Datta, S.C. (1959). Studies on the physiology of rice X Effects of potassium deficiency on growth and nitrogen metabolism. *Indian Journal Agri. Sci.* **27**: 1-24.
- Smeal, C.; Hackett, M. and Truong, P. (2003). Vetiver system for industrial wastewater treatment in Queensland, Australia. In: *The Third International Conference on Vetiver and Exhibition, Vetiver and Water, An Eco-Technology for Water Quality Improvement, Land Stabilization, and Environmental Enhancement*, (Ed.): Paul Truong and Xia Hanping, Guangzhou, P. R. China, (Publ.): China Agriculture Press, pp: 75-86.
- Smith, I. K. (1978). Effect of plant growth regulators on calcium stimulated serine transport into tobacco cells. *Plant Physiol.*, **62**: 949-953.

- Somchai, J.; Chanida, P.; Tanasorn, T.; Anusorn, R.; Niran, V.; Anchalee, C. and Nijisiri, R. (2008). Pharmacognostic specification of *Vetiveria zizanioides* roots in Thailand. *J. Health Res*, **22** (1): 9-14.
- Sompong, M.; Bunharn, T. and Somjai, P. (2000). Studies on the N₂ fixing bacteria associated with Vetiver 1) Biosynthesis of growth hormone by *Azospirillum* 2) Use of the gus A gene to study *Azospirillum*. *Agric Res J.*, **18**(3):233-237. ✓
- Sreenath, H. L. and Jagadishchandra, K. S. (1990). Propagation of *Vetiveria zizanioides* (L) Nash (khus grass) through inflorescence and node culture. *J Pafai.*, **12**(2): 27-29.
- Sreenath, H. L.; Jagadishchandra, K. S. and Baja, Y. P. S. (1994). XXVII *Vetiveria zizanioides* (L.) Nash (Vetiver grass): In vitro culture, regeneration and the production of essential oils. In: *Biotech Agric and forestry*, (ed.): Y.P.S. Bajaj., **26**:403-421.
- Sreenath, H. L.; Jagadishchandra, K.S. and Bajaj, Y.P.S. (1994). In vitro culture, regeneration and the production of essential oils. *Biotechnology in Agriculture of Forestry* **26**: 403-421.
- Sreenath, H. L. and Jagadishchandra, K. S. (1989). Somatic embryogenesis and plant regeneration from leaf culture of *Vetiveria zizanioides* (khus-khus grass). In: *XIII Plant Tissue Culture Conf. Dep. Bot North-Eastern Hill, Shilong*, Pp-54
- Sreenath, H. L. (1983). Cytogenetic and tissue culture studies in some commercially important species of aromatic grasses. PhD Thesis, Mysore University, Mysore.
- Srifah, P.; Pomthong, B.; Hongtrakul, V. and Sangduen, N. (2000) DNA polymorphism generated by single strand conformational polymorphism and random amplified polymorphic DNA technique are useful as tools for Thai Vetiver genome analysis. In: *Proc Second International Vetiver conference (ICV2)*. ✓

- Srisatit, T.; Kosakul, T. and Dhitivara, D.(2003) Efficiency of Arsenic Removal From Soil by *Vetiveria zizanioides* (Linn.) Nash and *Vetiveria nemoralis* (Balansa) A. Camus. *ScienceAsia*, **29**: 291-296.
- Srisatit, T.; Kosakul, T. and Dhitivara D. (2003). Efficiency of Arsenic Removal From Soil by *Vetiveria zizanioides* (Linn.) Nash and *Vetiveria nemoralis* (Balansa) A. Camus. *ScienceAsia*, **29**: 291-296.
- Srivastava, J.; Chandra, H. and Singh, N. (2007). Allelopathic response of *Vetiveria zizanioides* (L.) Nash on members of the family Enterobacteriaceae and *Pseudomonas* spp. *Environmentalist*, **27** :253-260.
- Steyn, W. J.; Wand, S. J.E.; Holcroft, D. M. and Jacobs, G. (2002). Anthocyanins in vegetative tissues: a proposed unified function in photoprotection. *New Phytologist.*, **155**: 349-361.
- Stoddart, J. L. (1965) Chemical Changes in *Lolium temulentum* L. after treatment with (2-Chloroethyl) Trimethylammonium Chloride (CCC). *Journal of Experimental Botany*.16(4): 604-613.
- Sugiura, Y.; Kawabe, H.; Tanaka, H.; Fujimato, S. and Ohara, A. (1981). Purification enzymatic properties and active site environment of a novel manganese (III) containing acid phosphates. *J. Biol. Chem.*, **256**: 10664 – 10670.
- Taiz, L. and Zeiger, E. (2006). *Plant Physiology*. IVth (edit.) (Publ.) Sinauer Associates, Inc., Publishers, Massachusetts.
- *Tanaka, A. and Yoshida, S. (1970). Nutritional disorders of rice in Asia. IRRI Publication. *Manila Phillipines*.
- Tantos, A., Meszaros, A., Kissimon, J., Horvath, J. G. and Farkas, T. (1999). The effect of triacontanol on micropropagation of balm, *Melissa officinalis* L. *Journal Plant Cell Reports*, **19** (1): 88-91.
- ✓ *Ta-un, M.; Panchaphan, S. and Seriphong, S. (1996). Nutrient absorption and requirements of *Vetiveria* grass. *AGRIS record*. Record number TH2000001580.

- Tezuka, T.; Sekiya, H. and Ohno, H. (1980). Physiological studies on the action of CCC in Kyoho grapes. *Plant and Cell Physiology.*, **21**(6): 969-977.
- Tezuka, T.; Takahara, C. and Yamamoto, Y. (1989). Aspects regarding the action of CCC in Hollyhock plants. *Journal of Experimental Botany.*, **40** (6): 689-692.
- Thakur, A. S., Jindal, K. K., and Sud, A. (1991). Effect of growth substances on vegetative growth, yield and quality parameters in strawberry *Indian Journal of Horticulture.* **48** (4):286-290.
- Thompson, M. and Williams, C. (1976). Stability of flavonoids complexes of copper-II and flavonoid antioxidant activity. *Anal. Chim. Acta.*, **85**: 375-381.
- Tomar, A. S. and Minhas, P. S. (2004). Relative performance of aromatic grasses under saline irrigation. *Indian J of Agronomy.*, **49**(3): 207-208.
- Toth, S. J., Prince, A. L., Wallace, A. and Mikkelsen, D. S. (1948). Rapid quantitative determination of eight mineral elements in plant tissue systematic procedure involving use of a flame photometer. *Soil Sci.*, **66** : 459-466.
- Tran, H. G. (http://www.Vetiver.org/VNN_invitrio_r.pdf). The *in vitro* regeneration of Vetiver (*Vetiveria zizanioides* (L.) Nash) using thin cell layer culture of inflorescences and selection for salt tolerant callus clones. Tran Hai Giang Can Tho university, Vietnam.
- Tripathi, R.; Koushik, D.; Tripathi, A.; Raul, V. P. and Khan, S. A. (2006). Acute and subacute toxicity studies on Vetiver oil in Rats. *FABAD J. Pharm. Sci.*, **31**: 71-77.
- Truong, P. (2008). Vetiver System for Prevention and Treatment of Polluted Water and Contaminated Land. (Ed.) Paul Truong, *Proceedings First Indian National Vetiver Workshop Vetiver System For Environmental Protection And Natural Disaster Management.* Cochin, India 21-23 February 2008

- Truong, P. (2006). Vetiver Grass System: Potential applications for soil and water conservation in Northern California. In: *Stiff Grass Technology Seminar*, California, 9 May, 2006.
- Truong, P. and Baker, D. (1998). Vetiver grass system for environment protection. *Tech. Bull.*, 1: 1-6.
- Truong, P. and Barbara, H. B. (2001). Vetiver system for wastewater treatment. (Pacific Rim Vetiver Network Technical Bulletin No. 2001/2) http://www.ipcp.org.br/IPCP-MA/Projects/CNPqSolos/VetiverDocs/PRVN_wastewater_bul.pdf.
- Truong, P. and Smeal, C. (2003). Research, Development and Implementation of Vetiver System for Wastewater Treatment. *The Vetiver Network and Veticon Consulting*, Brisbane, Queensland, Australia. *Pacific Rim Vetiver Network Technical Bulletin No. 2003/3*.
- Truong, P., Van, T. T. and Pinners, E. (2008) Vetiver System: Technical Reference Manual. *Vetiver Network International, Proven and Green Environmental Solutions*.
- Truong, P.; Van, T. T. and Pinners, E. (http://www.vetiver.org/TVN-Manual_Vf.pdf). Vetiver System Applications, Technical Reference Manual. *The vetiver Network International, Vetiver System: Proven and Green Environmental Solutions*, pp:1-127.
- Truong, P.N. (2000). The vetiver grass system: Potential applications for soil and water conservation in northern California. In: *Stiff grass Technology Seminar*, Woodland, Yolo County, California. Pp562-571, 9 May, 2000.
- Tsujita, M. J., Murr, D. P. and Johnson, (1978). Influence of phosphorus nutrition and ancymidol on leaf senescence and growth of asterlilly. *Can. J. Plant Sci.*, 58:287-290.
- Tuma, J., Skalicky, M., Tumova, L. and Beranek, J. (2007). The effect of nitrogen and chlormequat on the translocation of Ca, Mg and K. *Cereal Research Communications*, 35 (2): 1229-1232

- Udomporn, P. (1996). Toxicity test of root extracted substances from Vetiver grass on diamond back moth. *Journal of Agriculture (Thailand)*, **12** (2): 140-145.
- Vainello, A.; Zancani, M.; Nagy, G. and Macri, F. (1997). Guaiacol peroxidase associated to soybean root plasma membranes oxidizes ascorbate. *J. Plant Physiol.*, **150**: 573-577.
- Vamos-vigyazo, L. (1981). Polyphenol oxidase and peroxidase in fruits and vegetables. *CRC Crit. Rev. J. Food Sci., Nutr.*, **15**: 49-127.
- Vanky, K. (2005). The smut fungi (Ustilaginomycetes) of Chrysopogon (Poaceae) *Fungal Diversity*, **(18)** :177-187.
- Vauchert, H.; Kronenberger, J.; Rauze, P. and Caboche, M. (1989). Complete nucleotide sequence of the two homogenous tobacco nitrate reductase genes. *Plant Mol Biol.*, **12**: 597-600.
- Veldkamp, J. F. (1999). A revision of Chrysopogon Trin. including Vetiveria Bory (Poaceae) in Thailand and Malesia with notes on some other species from Africa and Australia. *Austrobaileya*, **5**:503–533.
- *Vietmeyer, N. D. (1993). Ed. Vetiver grass – a thin green line against erosion. National Academy Press, Washington, D.C.
- Vimala, Y. ; Anuj, K. A. and Gupta M. K. (2008). Physico-Chemical Studies on Allelopathic Interaction of Vetiver With Two Non-Edible Oil Yielding Fence Plants. (Ed.) : Paul Truong, *Proceedings, First Indian National Vetiver Workshop, Vetiver System for Environmental Protection and Natural Disaster Management*, Cochin, India 21-23 February 2008.
- Vincent, J. B.; Crowder, M. W. and Averill, B. A. (1992). Hydrolysis of phosphate monoesters: a biological problem with multiple chemical solutions. *Trends Biochem. Sci.*, **17** : 105-110.
- Vipungeun, N.; Tunsaringkarn, T.; Palanuvej, C. and Ruangrunsi, N. (2005). Comparative study on microscopic characters of underground parts of *Imperata cylindrica* and *Vetiveria zizanioides*. 31st Congress on

- Science and Technology of Thailand at Suranaree University of Technology, 18 - 20 October 2005.
- Vranova, E.; Inze, D. and Van Breusegem, F. (2002). Signal transduction during oxidative stress. *J. Exp. Bot.*, **53**: 1227-1236.
- Wagner, H. and Bladt, S. (2003). Plant Drug Analysis. *A thin layer chromatography*, (Ed) Wagner, H. and Bladt, S., (Pub.) Springer, (Ed) 2.
- Wang, H. and Xiao, L. (2009). Effects of chlorocholine chloride on phytohormones and photosynthetic characteristics in potato (*Solanum tuberosum* L.). *Journal of plant growth regulation*, **28** (1): 21-27.
- Wang, H.; Li, H.; Liu, F. and Xiao, L. (2009). Chlorocholine chloride application effects on photosynthetic capacity and photoassimilates partitioning in potato (*Solanum tuberosum* L.). *Scientia Horticulturae*, **119** (2): 113-116.
- Wang, H.; Xiao, L.; Tong, J. and Liub, F. (2010). Foliar application of chlorocholine chloride improves leaf mineral nutrition, antioxidant enzyme activity, and tuber yield of potato (*Solanum tuberosum* L.) *Scientia Horticulturae*. **125** (3): 521-523.
- Ward, M.R.; Grimes, H.D. and Huffaker, R.C. (1989). Latent nitrate reductase in associated with the plasma membrane of corn root. *Planta*, **177**: 470-475.
- Ward, M.R.; Tischner, R. and Huffaker, R.C. (1988). Inhibition of nitrate of transport by antinitrate reductase IgG fragments and the identification of plasmamembrane associated nitrate reductase in roots of barley seedlings. *Plant Physiol.*, **29**: 1141-1145.
- Weherstahl, P.; Marschall, H.; Splittgerber, V. and Wolf, D. (1996). Sesquiterpene ethers from Vetiver oil. *Liebigs-Annalen*, **1996** (7):1195-1199.
- Weirzbowska, J. and Bowszys, T. (2008). Effect of growth regulators applied together with different phosphorus fertilization levels on the content and accumulation of potassium, magnesium and calcium in spring wheat. *J. Elementol*, **13**(3): 411-422.

- Weyerstahl, P, Marschall H, Splittgerber U, Wolf D (1997) New cis-eudesm-6-ene derivatives from Vetiver oil. *Liebigs Annalen-Recueil*, **1997** (8): 1783-1787.
- Weyerstahl, P.; Marschall, H.; Splittgerber, U. and Wolf, D. (2000). Analysis of the polar fraction of Haitian Vetiver oil. *Flavour and Fragrance J.*, **15**:153-173.
- Weyerstahl, P.; Marschall, H; Splittgerber, U; Wolf, D. and Surburg, H. (2000). Constituents of Haitian Vetiver. *Flavors and Fragrance Journal*, **15** (6):395-412.
- Weyerstahl, P.; Marschall, H.; Splittgerber, U. and Wolf, D. (1997). New cis-eudesm-6-ene derivatives from Vetiver oil. *Liebigs Annalen-Recueil*, **0**: 1783-1787.
- Wildon, C. E., Hamner, C. L. and Bass, S. T. (1957). The effect of 2, 4-dichlorophenoxyacetic acid on the accumulation of mineral elements in tobacco plants. *Michigan Agricultural Experiment Station Journal Article* 2009.
- Williams, E. L.; Hovenden, M. J. and Close, D. C. (2003). Strategies of light energy utilization, dissipation and attenuation in six co-occurring alpine health species in Tasmania. *Functional Plant Biology.*, **30**:1205-1218.
- Wollenweber, E. and Jay, M. (1988). Flavones and flavonols In: *The Flavonoids: Advances in Research Since 1980*. (eds.) J. B. Harborne (Publ.) Chapman and Hall, London: pp-234.
- Wong, C. C.; Wu, C. S.; Kuek, C.; Khan, A. G. and Wong, M. H. (2007). The Role of Mycorrhizae Associated with Vetiver Grown in Pb-/Zn-Contaminated Soils: Greenhouse Study. *Restoration Ecology*, **15**(1): 60–67.
- Wyn Jones, R. G. and Lunt, O. R. (1967). The functions of calcium in plants. *Bot. Rev.*, pp- 407-426.
- Xia, H. P. (2003). Observations and experiments on the multiplication, cultivation and management of vetiver grass conducted in China in the 1950's.

Retrieved on 22 September 2007 from
http://www.vetiver.com/CHN_propagation.Htm.

- Xia, H. P. (2004). Ecological rehabilitation and phytoremediation with four grasses in oil shale mined land. *Chemosphere*, **54**: 343-353.
- Xia, H. P. and Shu, W. S. (2001). Resistance to and uptake of heavy metals by *Vetiveria zizanioides* and *Paspalum notatum* from lead / zinc mine tailings. *Acta Ecologica Sinica*, 2001
http://d.wanfangdata.com.cn/Periodical_caoyexb200704015.aspx.
- Xie, F. X. (1997). Vetiver for highway stabilization in Jian Yang County: Demonstration and Extension. *Proceedings abstracts. International Vetiver Workshop*, Fuzhou, China, October 1997.
- Xu, W.; Li, W.; He, J.; Balwant, S. and Xiong, Z. (2008). Effect of insoluble Zn, Cd and EDTA on the growth, activities of antioxidant enzymes and uptake of Zn and Cd in *Vetiveria zizanioides*. *J of Envir Sci.*, **21**(2):186-192.
- *Yang, B.; Xia, H. and Zhen, M. A. (2007). Study on tissue culture of *Vetiveria zizanioides*. *Acta Prataculturae sinica*. **4**:
- Yang, B.; Wu, G.; Ma, Z. and Xia, H. (2006). Study of efficient regeneration system and Agrobacterium mediated transformation of *Vetiveria zizanioides*. *The Fourth International Conference on Vetiver, ICV4. 'Vetiver and People' Caracas, Venezuela- October 2006*.
- Yuttapong, P.; Peerasat, S. and Rachain, T. (1995). Effect of shading and soil salinity growth of native Vetiver grasses. *Kasetsart J.*, **29**(2):143-149.
- Zhang, Z.; Chang, Q.; Zhu, M.; Huang, Y.; Ho, W.K.K. and Chen Z.Y. (2001). Characterization of antioxidant presents present in hawthorn fruits. *J. Nutr. Biochem.*, **12**: 144-152
- *Zhen-Rong, M.; Liu Wei, W.; Changhu, H. and Ping, Xia, D.H. L. (2003). Cytology observation and formation conditions of somatic embryog-ensis in *Vetiveria zizanioides*. *Acta Ecologica Sinica* , **23** (7):

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- Zhou, Q. and Yu, B. J. (2009). Changes in free, conjugated and bound polyamines content in salt adaptation of Vetiver grass (*Vetiveria zizanioides*, Poaceae). *Acta Botanica Yunnanica*, **31** (6) : 477-485.
- Zhu, B. C. R.; Handerson, G.; Chen, F.; Maistrello, L. and Laine, R. A. (2001). Nootkatone is a repellent for Formosan subterranean termite (*Coptotermes formosanus*). *J.of Chem. Ecol.*, **27** (3): 523-531.
- Zhu, B. C. R.; Handerson, G.; Chen, F.; Tie, H. and Laine, R. A. (2001). Evaluation of Vetiver oil and seven insect active essential oils against the Formosan subterranean termite. *Ecology*, **27** (8): 1617-1625.
- Zhuang, P.; Ye, Z. H.; Lan, C. Y.; Xie, Z. W. and Shu W. S. (2005). Chemically assisted phytoextraction of heavy metal contaminated soils using three plant species. *Plant and Soil*, **276** (1-2): 153-162.
- Zinth, W. and Kaiser, W. (1993). Time resolved spectroscopy of the primary electron transfer in reaction centre of *Rhodopacter sphaeroides* and *Rhoropseudomonas viridis*. In: The photosynthetic reaction centre. (eds.) Deisenhofer, J. and Norris, J. R. (Publ) San Diego: Academic press, pp-71-88.

*Original not seen