

# References

- Adebooye, O.C., 2008. Phytoconstituents and anti-oxidant activity of the pulp of snake tomato (*Tricosanthes cucumerina*), African Journal of Traditional, Complimentary and Alternative Medicines, 5 (2), 173-179.
- Agrawal, V., and Sardarv, PR. 2007. *In vitro* regeneration through somatic embryogenesis and organogenesis using cotyledons of *Cassia angustifolia* Vahl. In Vitro Cell.Dev.Biol.– Plant, 43:585–592.
- Ahn YJ, Vang L, McKeon TA and Chen GQ (2007) High-frequency plant regeneration through adventitious shoot formation in castor (*Ricinus communis* L.). *In Vitro Cell Dev Biol Plant* 43: 9 – 15.
- Alam M, Iftekhar Alam, Shamima Akhtar Sharmin, Mizanur Rahman M, Anisuzzaman M and Mohammad Firoz Alam (2010) Micropropagation and antimicrobial activity of *Operculina turpethum* (syn. *Ipomoea turpethum*), an endangered medicinal plant Jahangir. *Plant Omics Journal* 3(2): 40 – 46.
- Ali, N., R.M. Skirvin and W.E. Splittstoesser. 2005. Regeneration of *Cucumis sativus* from cotyledons of small explants. *HortScience* 26:925.
- Alibert B, Lucas O, Le Gall V, Kallerhoff J and Alibert G. (1999) Pectolytic enzyme treatment of sunflower explants prior to wounding and cocultivation with *Agrobacterium tumefaciens*, enhances efficiency of transient  $\beta$ -glucuronidase expression. *Physiol. Plant.* 106: 232 - 237.
- Aly MAM, Rathinasabapathi B and Kelley K (2002) Somatic embryogenesis in perennial statice *Limonium bellidifolium*, Plumbaginaceae. *Plant Cell Tissue Org Cult.* 68: 127 – 135.
- Amin MN and Jaiswal VS (1998) Micropropagation as an aid to rapid cloning of a guava cultivar. *Scientia Hort.* 36: 89 - 95.
- Ammirato PV (1983) Embryogenesis. In: Evans DA, Sharp WR, Ammirato, PV, Yamada Y. (Eds.), Handbook of Plant Cell Culture, Techniques for Propagation and Breeding, vol. 1. Collier Macmillan Publishers, London, pp. 82–122.

- An G, Evert PR, Mitra A and Ha SB (1988) Binary vectors. In: Gelvin SB, Schilperoort RA (eds) *Plant molecular biology manual A3*, Kluwer Academic Press, Dordrecht, the Netherlands, pp. 1 – 19.
- Anoust, MAD, Nguyen-Quoe B, Le VK and Yelle S (1999) Upstream regulatory regions from the maize Sh 1 promoter confer tissue specific expression of the  $\beta$  glucuronidase gene in tomato. *Plant Cell Rep.* 18: 803 - 808.
- Arai M and Takeuchi M (1993) Influence of *Fusarium* wilt toxin(s) on carnation cells, *Plant Cell Tissue Org Cult* 34: 287 – 293.
- Asao H, Nishizawa Y, Arai S, Sato T, Hirai M, Yoshida K, Shinmyo A and Hibi T (1997) Enhanced resistance against a fungal pathogen *Sphaerotheca humuli* in transgenic strawberry expressing a rice chitinase gene. *Plant Biotech.* 14: 145-149.
- Athma P and Reddy TP (1983) Efficiency of callus initiation and direct regeneration from different explants of castor (*Ricinus communis* L.). *Curr Sci* 52: 256 – 7.
- Aydin Y, Ipekci Z, Talas-Ogras T, Zehir A, Bajrovic K and Gozukirmizi N (2004) High frequency somatic embryogenesis in cotton. *Biol Plant.* 48: 491 - 495.
- Babbar, S.B. and N. Jain. 1998. 'Subgol1 as an alternative gelling agent in plant tissue culture media. *Plant Cell Rep.* 17:318-322.
- Bais HP, Jacob George, Ravishankar GA (2000) *In vitro* propagation of *Decalepis hamiltonii* Wight & Arn., an endangered shrub, through axillary bud cultures. *Current Science*, vol. 79, no. 4, 25: page no
- Bais HP, Sudha G, Suresh B and Ravishankar GA (2000a) AgNO<sub>3</sub> influences *in vitro* root formation in *Decalepis hamiltonii* Wight, Arn. *Current Science* 79: 894 - 898.
- Bais HP, Sudha GS and Ravishankar GA (2000) Putrescine and silver nitrate influences shoot multiplication, *in vitro* flowering and endogenous titers of polyamines in *Chicorium intybus* L. cv. Lucknow Local. *Plant Growth Regul.* 19: 238 - 248.
- Baker CM, Muñoz-Fernandez N and Carter CD (1999) Improved shoot development and rooting from mature cotyledons of sunflower. *Plant Cell Tiss. Org. Cult.* 58: 39 – 49

- Baskaran, P. and Van Staden, J., 2017. Ultrastructure of somatic embryo development and plant propagation for *Lachenalia montana*. *South African Journal of Botany*, 109, pp.269-274.
- Bespalhok JCF and Hattori K (1998) Friable embryogenic callus and somatic embryo formation from cotyledon explants of African marigold (*Tagetes erecta* L.). *Plant Cell Rep* 17: 870 – 875.
- Bevan M (1984) Binary *Agrobacterium* vectors for plant transformation, *Nucleic Acids Res.* 12: 8711 – 8721.
- Biddington NL (1992) The influence of ethylene in plant tissue culture. *Plant Growth Regul.* 11: 173 - 178.
- Bidney D, Scelonge C, Martich J, Burrus M, Sims L, Huffman G (1992) Microprojectile bombardment of plant tissue increases transformation frequency by *Agrobacterium tumefaciens*, *Plant Mol Biol*, 18 : 301 – 305.
- Bilang R, Zhang S, Leduc N, Iglesias VA, Gisel A, Simmonds J, Potrykus I, Stutter C (1993) Transient GUS expression in vegetative shoot apical meristems of wheat after ballistic microtargeting. *Plant J* 4:735 – 744.
- Bin Xu, Wenhao Dai and Wun S. Chao (2008) An efficient method for in vitro regeneration of leafy spurge (*Euphorbia esula* L.) - *In Vitro Cell.Dev.Biol.- Plant* 44: 548 – 556
- Binding H, Binding K and Straub J (1970) Selektion in Gewebekultur mit haploiden Zellen, *Naturwissenschaften* 57 : 138 – 139.
- Blackmon, W. and B. Reynolds. 1982. In vitro shoot regeneration of *Hibiscus acetosella*, muskmelon, watermelon, and winged bean. *HortScience* 17:588-589.
- Boltenkov EV and Zarembo EV (2003) *In vitro* regeneration and callogenesis in tissue culture of floral organs of the genus *Iris* (Iridaceae). *Biol. Bull.* 32: 138 - 142.
- Bouacem, K., Laribi-Habchi, H., Mechri, S., Hacene, H., Jaouadi, B. and Bouanane-Darenfed, A., 2017. Biochemical characterization of a novel thermostable chitinase from *Hydrogenophilus hirschii* strain KB-DZ44. *International journal of biological macromolecules*. *International Journal of Biological Macromolecules* 106, 338–350.

- Brogliè K, Chet I, Holliday M, Cressman R, Biddle P, Knowlton S, Mauvais CJ and Brogliè R (1991) Transgenic plants with enhanced resistance to the fungal pathogen *Rhizoctonia solani*. *Science* (Washington, DC) 254: 1194 – 1194.
- Brown DJ, Canvin DT and Zilkey BF (1970) Growth and metabolism of *Ricinus communis* endosperm in tissue culture. *Canadian J Bot* 48: 2323 – 31.
- Burza, W., and Malepzy, S. 1995. Direct plant regeneration from leaf explants in cucumber (*Cucumis sativus* L.) is free of stable genetic variation. *Plant Breed.* 114:341-345.
- Caboni E, Lauri P and Angeli SD (2000) *In vitro* plant regeneration from callus of shoot apices in apple shoot culture. *Plant Cell Rep.* 19: 755 - 760.
- Cade, R.M., T.C. Wehner and F.A. Blazich. 1987. Organogenesis and embryogenesis from cucumber (*Cucumis sativus* L.) cotyledon derived callus. *J. Hort. Sci.* 22:154. (abstr.).
- Chakravarty, B., Pruski, G.W., 2010. Rapid regeneration of stable transformants in cultures of potato by improving factors influencing *Agrobacterium*-mediated transformation *Advances in Bioscience and Biotechnology* 1, 409-416.
- Chalupa V (1990) Plant regeneration by somatic embryogenesis from cultured immature embryos of oak (*Quercus robur* L.) and Linden (*Tilia cordata* Mill.). *Plant Cell Rep.* 9: 398 – 401.
- Chan, Y.L., He, Y., Hsiao, T.T., Wang, C.J., Tian, Z. and Yeh, K.W., 2015. Pyramiding taro cystatin and fungal chitinase genes driven by a synthetic promoter enhances resistance in tomato to root-knot nematode *Meloidogyne incognita*. *Plant Science*, 231, pp.74-81.
- Chand S, Sahrawat AK and Prakash DV (1997) *In vitro* culture of *Pimpinella anisum* L. (anise). *J Plant Biochemistry and biotechnology* 6: 1 – 5.
- Chang C and Chang WC (2000) Micropropagation of *Cymbidium ensifolium* var. *Misericors* through callus-derived rhizomes. *In Vitro cell. dev. Biol. Plant* 36: 517 – 520.
- Chaofu L and Jinling K (2008) Generation of transgenic plants of potential oilseed crop *Camelina sativa* by *Agrobacterium* mediated transformation. *Plant Cell.Rep.* 27: 273 - 278.

- Chaturvedi, R. and Bhatnagar, S.P. 2001. High-frequency shoot regeneration from cotyledon explants of watermelon cv. sugar baby. *In Vitro Cell. Dev. Biol.-Plant* 37:255-258.
- Chaudhary B, Kumar S, Prasad KVSK, Oinam GS, Burma PK and Pental D (2003) Slow desiccation leads to high frequency shoot recovery from transformed somatic embryos of cotton (*Gossypium hirsutum* L. cv. Coker 310 FR). *Plant Cell Rep.* 21: 955 – 960.
- Chee, P.P. 1992. Initiation and maturation of somatic embryos of squash (*Cucurbita pepo*). *HortScience* 27:59-60.
- Chee, P.P. 1990. Transformation of *Cucumis sativus* tissue by *Agrobacterium tumefaciens* and the regeneration of transformed plants. *Plant Cell Rep.* 9:245-248.
- Chee, P.P. 1991. Plant regeneration from cotyledons of *Cucumis melo* 'Topmark1'. *HortScience* 26:908-910.
- Chee, P.P. and J.L. Slightom. 1991. Transfer and expression of cucumber mosaic virus coat protein gene in the genome of *Cucumis sativus*. *J. Amer. Soc. – 162. Hon. Sci.* 116:1098-1102.
- Chee, P.P. and Tricoli, D.M. 1988. Somatic embryogenesis and plant regeneration from cell suspension cultures of *Cucumis sativus* L. *Plant Cell Rep.* 7:274-277.
- Chen FQ, Fu Y, Wang DL, Gao X and Wang L (2007) The effect of plant growth regulators and sucrose on the micropropagation and microtuberization of *Dioscorea nipponica* Makino. *J Plant Growth Regul* 26: 38 – 45.
- Cheruvathur, M.K., Abraham, J., Thomas, T.D., 2015. *In vitro* micropropagation and flowering in *Ipomoea sepiaria* Roxb. An important ethnomedicinal plant. *Asian Pacific Journal of Reproduction* 4(1), 49-53.
- Chraibi, B.K.M, J.C. Castelle, A. Latche, J.P. Roustan and J. Fallot. 1992. Enhancement of shoot regeneration potential by liquid medium culture from nature cotyledons of sunflower (*Helianthus annuum* L.) *Plant Cell Rep.* 10:617-620.
- Christou, P. (1996). Transformation technology. *Trend Plant Sci.* 1: 423 - 431. Christou, P., *Plant Molecular Biology Manual*, A2, 1–15, *Kluwer Academic*

- Colijn-Hooymans, C.M., Hakkert, J.C. Jansen, J., and Custers, J.M.B. 1994. Competence for regeneration of cucumber cotyledons is restricted to specific developmental stages. *Plant Cell Tiss. Org. Cult.* 39:211-217.
- Collinge DB, Kragh KM, Mikkelsen JD, Nielsen KK, Rasmussen U and Vad K (1993) Plant Chitinase. *Plant J.* 3: 31 - 40.
- Compton, M.E. 1997. Influence of seedling pretreatment and explant type on watermelon shoot organogenesis. *Hort Science* 32:514.
- Compton, M.E. and D.J. Gray. 1991. Shoot organogenesis on cotyledons of watermelon. *Hort Science* 26:772.
- Compton, M.E., D.J. Gray and W.G. Elmstrom. 1994. The identification of tetraploid regenerants from cotyledons of diploid watermelon and their use in breeding triploid hybrids. *HortScience* 29:450.
- Compton, M.E. 2000. Interaction between explant size and cultivar affects shoot organogenic competence of watermelon cotyledons. *Hort Science* 35:749-750.
- Compton, M.E. and D.J. Gray. 1993. Shoot organogenesis and plant regeneration from cotyledons of diploid, triploid and tetraploid watermelon. *J. Amer. Soc. Hort. Sci.* 118:151-157.
- Compton, M.E. and D.J. Gray. 1994. Adventitious shoot organogenesis and plant regeneration from cotyledons of tetraploid watermelon. *HortScience* 29:211-213.
- Compton, M.E. and Gray, D.J. 1993. Shoot organogenesis and plant regeneration from cotyledons of diploid, triploid and tetraploid watermelon. *J. Amer. Soc. Hort. Sci.* 118:151-157.
- Compton, M.E. and Gray, D.J. 1994. Adventitious shoot organogenesis and plant regeneration from cotyledons of tetraploid watermelon. *HortScience* 29:211-213
- Compton, M.E., E. Michael, D.J. Gray and G.W. Elmstrom. 1996. Identification of tetraploid regeneration from cotyledons of diploid watermelon cultured in vitro. *Euphytica* 87:165-172.
- Compton, M.E., Michael, E., Gray, D.J. and Elmstrom. G.W. 1996. Identification of tetraploid regeneration from cotyledons of diploid watermelon cultured in vitro. *Euphytica* 87:165-172.

- Constantin, MJ., Henke, RR., and Mansur, MA. 1977. Effect of activated charcoal on callus growth and shoot organogenesis in tobacco. *In Vitro*, 13(5):293-296.
- Constantine D (1978) Round table conference, Gembloux. Belgium, p. 134.
- Cuenca and Vieitez AM (2000b) Influence of carbon source on shoot multiplication and adventitious bud regeneration in *in vitro* beech cultures. *Plant Growth Regulation* 32: 1 – 12
- Daayf F, Nicole M, Boher B, Pando A and Geiger JP (1997) Early vascular defense reactions of cotton roots infected with a defoliating mutant strain of *Verticillium dahliae*, *European J Plant Pathol* 103 : 125–136.
- Das DK, Siva Prakash N and Bhalla-Sarin N (1998) An efficient regeneration system of black gram (*Vigna mungo* L.) through organogenesis. *Plant Sci* 134: 199 – 206.
- Das, P. 2011. Somatic Embryogenesis in Four Tree Legumes Biotechnology Research, International, 1-8.
- Davis S and Vierstra R (1998). Soluble highly florescent variants of green fluorescent protein (GFP) for use in higher plants. *Plant Mol. Biol.* 36: 521
- Declene M and Deley J (1976) The host range of crown gall. *Botanical review*, 42
- Devendra, N. K., Vijaykumar B. Malashetty., Seetharam, Y. N., 2015. Indirect organogenesis in wild snake gourd (*Trichosanthes cucumerina* L. var. *cucumerina*). *Int J Curr Res.*, 7(2), 12685-12690.
- Devendra, N.K., Rajanna, L., Sheetal, C., Seetharam. Y. N., 2008. *In vitro* Clonal Propagation of *Trichosanthes cucumerina* L. var. *cucumerina*. *Plant Tissue Cult. & Biotech.* 18(2), 103-111.
- Devi, K., Sharma, M. and Ahuja, P.S., 2014. Direct somatic embryogenesis with high frequency plantlet regeneration and successive cormlet production in saffron (*Crocus sativus* L.). *South African Journal of Botany*, 93, pp.207-216.
- Duchow, S., Dahlke, R.I., Geske, T., Blaschek, W. and Classen, B., 2016. Arabinogalactan-proteins stimulate somatic embryogenesis and plant propagation of *Pelargonium sidoides*. *Carbohydrate polymers*, 152, pp.149-155.
- Edwards K, Johnstone C and Thompson C (1991) A simple and rapid method for the preparation of plant genomic DNA for PCR analysis *Nucleic Acids Research*, Vol. 19, No. 6 1349

- Espinasse, A., Lay, C. and Volin, J. 1989. Effects of growth regulator concentrations and explant size on shoot organogenesis from callus derived from zygotic embryos of sunflower (*Helianthus annuus* L.). *Plant Cell Tiss. Org. Cult.* 17:171-181.
- Faisal M and Anis M (2006) Thidiazuron induced high frequency axillary shoot multiplication in *Psoralea corylifolia*. *Biol. Plant.* 50: 437 - 440.
- Fassuliotis, G., Nelson, BV, and Bhatt, DP. (1981). Organogenesis in tissue culture of *Solanum melongena* cv. Florida Market. *Plant Science Letters*, 22: 119-125.
- Fehér ABS (2008) The initiation phase of somatic embryogenesis: what we know and what we don't. *Acta Biologica Szegediensis* 52 (1): 53 – 56.
- Fillati JJ, Kiser J, Rose R and Comai L (1987) Efficient transfer of a glyphosate tolerance gene into tomato using a binary *Agrobacterium tumefaciens* vector. *Biotechnology* 5: 726 - 730.
- Finch-Savage, W.E., Leubner-Metzger, G., 2006. Seed dormancy and the control of germination. *New Phytol.* 171(3), 501-23.
- Finer JJ and Nagasawa A (1988) Development of an embryogenic suspension culture of soybean (*Glycine max* L. Merr.). *Plant Cell Tissue Organ Cult.* 15: 125 – 136.
- Finnegar J and McElroy D (1994) Transgenic inactivation: Plants fight back.
- Fracaro F and Echeverrigaray S (2001) Micropropagation of *Cunila galioides*, a popular medicinal plant of south Brazil. *Plant Cell Tissue Organ Cult.* 64: 1 – 4.
- Fraley RT, Rogers SG and Horsch RB (1986) Genetic transformation in higher Plants. *CRC Crit. Riv. Plant Science* (4): 1 – 46.
- Fu, X., Yan, Q., Wang, J., Yang, S. and Jiang, Z., 2016. Purification and biochemical characterization of novel acidic chitinase from *Paenicibacillus barengoltzii*. *International journal of biological macromolecules*, 91, pp.973-979.
- Fuentes-Cerda CFJ, Monforte-González M, Méndez-Zeel M, Rojas-Herrera R and Loyola-Vargas VM (2001) Modification of the embryogenic response of *Coffea arabica* by the nitrogen source. *Biotechnology Letters* 23: 1341 – 1343.
- Gaba, V., A. Zelcer and A. Gal-On. 1994. Invited review: Cucurbit biotechnology - The importance of virus resistance. *In Vitro Cell. Dev. Biol.-Plant* 40:346-358.



- Gambley, R.L., and Dodd. W.A. 1990. An in vitro technique for the production in vitro of multiple shoots in cotyledon explants of cucumber (*Cucumis sativus* L.). *Plant Cell Tiss. Org. Cult.* 20:177-183.
- Gamborg OL, Miller RA and Ojima K (1968) Nutrient requirements of suspension cultures of soybean root cells. *Exp Cell Res* 50: 151 - 158.
- Ganesan M and Jayabalan N (2004) Evaluation of Haemoglobin for improved somatic embryogenesis and plant regeneration in cotton (*Gossypium hirsutum* cv SVPR 2). *Plant Cell Rep.* 23: 181 – 187.
- Ganesan M and Jayabalan N (2005) Carbon source dependent somatic embryogenesis and plant regeneration in cotton, *Gossypium hirsutum* L. cv. SVPR2 through suspension cultures. *Indian J. exp. Biol.* 43: 921 - 925.
- Ganesan M and Jayabalan N (2006) Isolation of disease-tolerant cotton (*Gossypium hirsutum* L. cv. SVPR 2) plants by screening somatic embryos with fungal culture filtrate. *Plant cell tiss. Org. cult* 87: 273 - 284
- Ganesh Kumari K, Ganesan M and Jayabalan N (2008) Somatic embryogenesis and plant regeneration in *Ricinus communis*. *Biol Plant* 52: 17 – 25.
- Gao, S., Gao, Y., Xiong, C., Yu, G., Chang, J., Yang, Q., Yang, C. and Ye, Z., 2017. The tomato B-type cyclin gene, SlCycB2, plays key roles in reproductive organ development, trichome initiation, terpenoids biosynthesis and *Prodenia litura* defense. *Plant Science.* 262, 103-114.
- Gao, Y., Zan, X.L., Wu, X.F., Yao, L., Chen, Y.L., Jia, S.W. and Zhao, K.J., 2014. Identification of fungus-responsive cis-acting element in the promoter of Brassica juncea chitinase gene, BjCHI1. *Plant Science*, 215, pp.190-198.
- Garas NA, Wilhem S and Sagen JE (1986) Relationship of cultivar resistance to distribution of *Verticillium dahliae* in inoculated cotton plants and to growth of single conidia on excised stem segments. *Phytopathol* 76 : 1005 – 1010.
- Geliang W and Yinong X (2008). Hypocotyl-based Agrobacterium-mediated transformation of soybean (*Glycine max*) and application ofr RNA interference. *Plant Cell Rep.* (On line).
- Genyu Z (1988) Callus formation and plant regeneration from young stem segments of *Ricinus communis* L. *Genetic Manipulation in Crops*. IRRI, Cassell Tycooly, p. 393.

- George, E.F. 1993. Plant propagation by tissue culture. Part I. The technology. Exegetics, Edington, UK.
- Ghimire BK, Seong ES, Goh EJ, Kim NY, Kang WH, Kim EH, Yu CY and Chung IM (2010) High-frequency direct shoot regeneration from *Drymaria cordata* Willd. Leaves. *Plant Cell Tiss Organ Cult* 100: 209 – 217.
- Gita rani, GS., Virk, and Avinash nagpal. (2003). Callus induction and plantlet regeneration in *Withania somnifera* (L.) Dunal. *In Vitro Cell. Dev. Biol.-Plant.*, 39:468-474.
- Gogoi, G., Borua, P.K. and Al-Khayri, J.M., 2017. Improved micropropagation and *In vitro* fruiting of *Morus indica* L.(K-2 cultivar). *Journal of Genetic Engineering and Biotechnology.* 15, 249–256.
- Gonzalez, AM., Ray, HY. and Scochi, AM. 1997. Plant regeneration in *Arachis pinoi* (Leguminosae) through Leaf culture. *Plant Cell Reports.*, 19: 856-862.
- Gray, D.J., D.W. McColley and M.E. Compton. 1993. High-frequency somatic embryogenesis from quiescent seed cotyledons of *Cucumis melo* cultivars. *J. Amer. Soc. Hort. Sci.* 118:425-432.
- Greer, M.S., Kovalchuk, I. and Eudes, F., 2009. Ammonium nitrate improves direct somatic embryogenesis and biolistic transformation of *Triticum aestivum*. *New biotechnology*, 26(1), pp.44-52.
- Gupta, P., Das, A., Singh, O.P., Ghosh, S.K. and Singh, V., 2012. Assessing the genetic diversity of the vir genes in Indian *Plasmodium vivax* population. *Acta tropica*, 124(2), pp.133-139.
- Hadi MZ, McMullen MD and Finer JJ (1996). Transformation of 12 different plasmids into soybean via particle bombardment. *Plant Cell Rep.* 15: 500- 505.
- Haliloglu K (2006) Efficient regeneration system from wheat leaf base segments. *Biol. Plant.* 50: 326 - 330.
- Hamama L, Baaziz M and Letouz' R (2001) Somatic embryogenesis and plant regeneration from leaf tissue of jojoba. *Plant Cell, Tissue and Organ Culture* 65: 109 – 113.
- Handro W and Floh EIS (2001) Neo-formation of flower buds and other morphogenetic responses in tissue culture of *Melia azedarach*. *Plant Cell Tissue Organ Cult.* 64: 73 - 76.

- Hector, A., Chotirmall, S.H., Lavelle, G.M., Mirković, B., Horan, D., Eichler, L., Mezger, M., Singh, A., Ralhan, A., Berenbrinker, S. and Mack, I., 2016. Chitinase activation in patients with fungus-associated cystic fibrosis lung disease. *Journal of Allergy and Clinical Immunology*, 138(4), pp.1183-1189.
- Hill MK, Lyon KJ and Lyon BR (1999) Identification of disease response genes expressed in *Gossypium hirsutum* upon infection with the wilt pathogen *Verticillium dahliae*, *Plant Mol Biol* 40 : 289 – 296.
- Hong PI, Chen JT and Chang WC (2008) Promotion of direct somatic embryogenesis of *Oncidium* by adjusting carbon sources. *Biologia Plantarum* 52 (3): 597 – 600.
- Hooykaas PJJ and Schilperoort RA (1992). Agrobacterium and plant genetic engineering. *Plant Mol.Biol.* 13: 327 - 336.
- Hoque, M. E., Bhowmik, A., and Khalequeuzaman. M. 1998. *In vitro* culture of pointed gourd (*Trichosanthes dioica* Roxb.). *Thai. J. Agric. Sci.* 31:367–374.
- Huetteman CA and Preece JE (1993) Thidiazuron: A potent cytokinin for woody plant tissue culture. *Plant Cell Tissue Org Cult* 33: 105 – 109.
- Ignacimuthu S, Arockiasamy S, Antonysamy M and Ravichandran P (1999) Plant regeneration through somatic embryogenesis from mature leaf explants of *Eryngium foetidum*, a condiment. *Plant Cell, Tissue and Organ Culture* 56: 131–137.
- Ipekci Z and Gozukirmizi N (2003) Direct somatic embryogenesis and synthetic seed production from *Paulownia elongata*. *Plant Cell Rep* 22: 16 – 24
- Jaworski, J.M. and Compton, M.E. 1997. Plant regeneration from cotyledons of five watermelon cultivars. *HortScience* 32:469-470.
- Jefferson RA and Kavanagh TA (1987). GUS fusion:  $\beta$ -Glucuronidase as a sensitive and versatile gene fusion marker in higher plants. *EMBO J*, 6, 3901- 3907.
- Jefferson, RA (1987) Assaying chimeric genes in plants: The GUS gene fusion system. *Plant Mol. Biol. Rep.* 5: 387 - 405.
- Jian-Hua Wang., Hui-Ling Nie., Hai Huang., Siu-Cheung Tam., Yong-Tang Zheng., 2003. Independency of Anti-HIV-1 activity from ribosome-inactivating activity of Trichosanthin. *Biochem. Biophys. Res. Commun.*, 302, 89-94.

- John SJ and Guha-Mukherjee S (1997) In: Tewary KK, Singhal GS (eds) Plant molecular biology and biotechnology. Narosa, New Delhi, pp 17 – 28.
- Junli Wang, Qian Wang, Jue Wang, Yuan Lu, Xuan Xiao, Weizhen Gong and Jikai Liu (2009) Effect of different plant growth regulators on micro- tuber induction and plant regeneration of *Pinellia ternate* (Thunb) Briet. *Physiol. Mol. Biol. Plants* 15(4): 359 - 365
- Kallak H, Reidla M, Hilpus I and Virumäe K (1997) Effects of genotype, explant source and growth regulators on organogenesis in carnation callus. *Plant Cell Tissue Organ Cult.* 51: 127 - 135.
- Kamat, M.G., and Rao, T.S. 1978. Vegetative multiplication of eggplants (*Solanum melongena*) using tissue culture techniques. *Plant Science Letters*, 13: 57-65.
- Kanwar K, Jomy Joseph and Raj Deepika (2010) Comparison of in vitro regeneration pathways in *Punica granatum* L. *Plant Cell Tiss Organ Cult.* 100: 199 – 207.
- Karabi Datta, Subbaratnam Muthukrishnan, and Swapan K. Datta (1999) Expression and function of PR proein genes in plants (Pahogenesis related genes in plants, edited by Swapan A. Datta and Subbaranam Muthukrishnan
- Karami O. and Gona Karimi Kordestani. 2006. Picloram-induced somatic embryogenesis in leaves of strawberry (*Fragaria ananassa* L.). *Acta Biologica Cracoviensia Series Botanica*, 50(1): 69–72.
- Kaviraj CP, Kiran G, Venugopal RB, Kavi Kishor PB and Srinath Rao (2006) Somatic embryogenesis and Plant regeneration from cotyledonary explants of Green gram [*Vigna radiata* (L.) Wilezek.] – a recalcitrant grain legume. *In Vitro Cell. Dev. Biol.—Plant* 42: 134 – 138.
- Khan PSSV, Hausman JF and Rao KR (1999) *In vitro* morphogenesis and plantlet regeneration from seeds of *Syzygium alternifolium*. *Biol plant* 42: 177 – 180.
- Khatun A, Davey MR, Power JB and Lowe KC (1993a) Stimulation of shoot regeneration from cotyledons cultured with non-ionic surfactants and relationship to physico-chemical properties. *Plant Cell Rep* 13: 49 – 53.
- Khatun A, Laouar L, Davey MR, Power JB, Mulligan JB and Lowe KC (1993b) Effects of pluronic F-68 on shoot regeneration from cultured jute cotyledons and on growth of transformed roots. *Plant Cell Tissue Organ Cult* 34: 133 – 140.

- Khehra M, Lowe KC, Davey MR and Power JB (1995) An improved micropropagation system for *Chrysanthemum* based on Pluronic F-68- supplemented media. *Plant Cell Tissue Organ Cult* 41: 87 – 90.
- Kim, J., Jang, IC., Wu, R., Zuo, WN., Boston, RS., Lee, YH., Ahn, IP., and Nahm, BH. 2003. Co- expression of a modified maize ribosome-inactivating protein and a rice basic chitinase gene in transgenic rice plants confers enhanced resistance to sheath blight. - *Transgenic Res.*, 12: 475-484.
- Kim, SW., In, DS., Kim, TJ., and Liu, JR. 2003. High frequency somatic embryogenesis and plant regeneration in petiole and leaf explants cultures and petiole-derived embryogenic cell suspension cultures of *Hylomecon vernalis*. *Plant Cell Tiss Org Cult.*, 74:163– 167.
- Kim, YW., Youn, Y., Noh, ER.,and Kim, JC. 1997. Somatic embryogenesis and plant regeneration from immature embryos of five families of *Quercus acutissima*. - *Plant Cell Rep.*, 16: 869-873.
- Kishimoto K, Nishizawa Y, Tabei Y, Nakajima M, Hibi T and Akutsu K (2004) Transgenic cucumber expressing an endogenous class III chitinase gene has reduced symptoms from *Botrytis cinerea*. *J. Gen. Plant Pathol.* 70: 314
- Knittle, N., Escandon, A.S., and Hahne, G.1991. Plant regeneration at high frequency from mature sunflower cotyledons. *Plant Sci.* 73:219-226.
- Kocak, M., Izgu, T., Sevindik, B., Tutuncu, M., Curuk, P., Simsek, O., Kacar, Y.A., da Silva, J.A.T. and Mendi, Y.Y., 2014. Somatic embryogenesis of Turkish *Cyclamen persicum* Mill. *Scientia Horticulturae*, 172, pp.26-33.
- Koetle, M.J., Baskaran, P., Finnie, J.F., Soos, V., Balázs, E. and Van Staden, J., 2017. Optimization of transient GUS expression of *Agrobacterium*-mediated transformation in *Dierama erectum* Hilliard using sonication and *Agrobacterium*. *South African Journal of Botany*, 111, pp.307-312.
- Kohli A, Leech M, Vain P, Laurie DA and Christou PC (1999) Transgene organization in rice engineered through direct DNA transfer supports a twophase integration mechanism mediated by the establishment of integration hot spots. *Proc. Natl. Acad. Sci. USA* 95: 7203 - 7208.
- Kohli A, Twyman RM, Abranches R, Wegel E, Stoger E and Christou P (2003) Transgene integration, organization and interaction in plants. *Plant Mol Bio* 52: 247 – 258.

- Kolte, R.M., Bisan, V.V., Jangde, C.R., Bhalerao, A.A., 1997. Anti-inflammatory activity of root tubers of *Trichosanthes cucumerina* (LINN) in mouse's hind paw oedema induced by carrageenin. *Indian Journal of Indigeneous Medicines*, 18(2), 117- 21.
- Komalavalli, N. and Rao, M.V., 2000. *In vitro* micropropagation of *Gymnema sylvestre*—A multipurpose medicinal plant. *Plant Cell, Tissue and Organ Culture*, 61(2), pp.97-105.
- Konan NK, Sangwan RS and Sangwan-Norreel BS (1994b) Efficient *in vitro* shoot regeneration systems in cassava (*Manihot esculenta* Crantz). *Plant Breed* 113: 227 – 236.
- Konan NK, Schöpke C, Cárcamo R, Beachy RN and Fauquet C (1997) An efficient mass propagation system for cassava (*Manihot esculenta* Crantz) based on nodal explants and axillary bud-derived meristems. *Plant Cell Reports* 16: 444 – 449.
- Kozai T (1991) Micropropagation under photoautotrophic conditions. In: Debergh PC and Zimmerman RH (eds) *Micropropagation Technology and Application*, Kluwer Academic Publishers, Dordrecht, The Netherlands. Pp. 447 – 469.
- Kshirsagar, P.R., Chavan, J.J., Umdale, S.D., Nimbalkar, M.S., Dixit, G.B. and Gaikwad, N.B., 2015. Highly efficient *In vitro* regeneration, establishment of callus and cell suspension cultures and RAPD analysis of regenerants of *Swertia lawii* Burkill. *Biotechnology Reports*, 6, 79-84.
- Kulothungan S, Ganapathi A, Shajahan A and Kathiravan K (1995) Somatic embryogenesis in cell suspension culture of cowpea [*Vigna unguiculata* (L.) Walp]. *Israel J. Plant Sci.* 43: 385 - 390.
- Kumar AS, Gamborg OL and Nabors MW (1988) Regeneration from cell suspension cultures of tepary bean (*Phaseolus acutifolius* L.). *Plant Cell Rep.* 7: 322 – 325.
- Kumar, S.V. and Rajam, M.V., 2005. Polyamines enhance *Agrobacterium tumefaciens* vir gene induction and T-DNA transfer. *Plant science*, 168(2), pp.475-480.
- Kumar, V., Moyo, M. and Van Staden, J., 2017. Somatic embryogenesis in *Hypoxis hemerocallidea*: An important African medicinal plant. *South African Journal of Botany*, 108, pp.331-336.
- Laparra H, Burrus M, Huonold R, Damm B, Bravo-Angel AM, Bronner, R and Hahne G (1995) Expression of foreign genes in sunflower (*Helianthus annuus* L.) evaluation three gene transfer methods. *Euphytica* 85: 63 - 74.

- Lavanya, A.R., Muthukrishnan, S., MuthuKumar, M., Benjamin, J.F., Kumar, T.S., Kumaresan, V. and Rao, M.V., 2014. Indirect organogenesis from various explants of *Hildegardia populifolia* (Roxb.) Schott & Endl.—A threatened tree species from Eastern Ghats of Tamil Nadu, India. *Journal of Genetic Engineering and Biotechnology*, 12(2), pp.95-101.
- Lawrence CB, Joosten MHAJ and Tuzun S (1996) Differential induction of pathogenesis related proteins in tomato by *Alternaria solani* and the association of a basic chitinase isozyme with resistance. *Physiol Mol Plant Pathol*. 48 : 361 – 377.
- le Roux, M.L., Botha, A.M. and van der Vyver, C., 2016. Somatic embryogenesis and cryopreservation of South African bread wheat (*Triticum aestivum* L.) genotypes. *South African Journal of Botany*, 106, pp.78-88.
- Leah R, Tommerup H, Svendsen I and Mundy I (1991) Biochemical and molecular characterization of three barley seed proteins with antifungal properties, *J. Biol, Chem*. 266: 1564 - 1573.
- Lee KP and Lee DW (2003) Somatic embryogenesis and plant regeneration from seeds of wild *Dicentra spectabilis* (L.) LEM. *Plant Cell Rep*. 22: 105 – 109.
- Lee, Y.K., Chung, W.I., Ezura, H., 2003. Efficient plant regeneration via organogenesis in winter squash. *Plant Sci*. 164:413-418.
- Lehner, B., Doll, P., Alcamo, J., Henrichs, T., Kaspar, F., 2006. Estimating the impact of global change on flood and drought risks in europe: a continental, Integrated analysis climatic change 75, 273–299. DOI: 10.1007/s10584-006-6338-4
- Leshem, B., Ronen, R. Soudry, E. Lurie. S., and Gepstein, S. 1994. Cytokinin at a large range of concentrations determines rates of polypeptide metabolism and regeneration in cultured melon cotyledons. *J. Plant Physiol*. 143:330-336.
- Li LC, Qin GJ, Tsuge T, Hou XH, Ding MY, Aoyama T, Oka A, Chen Z, Gu H and Zhao Y (2008) Sporocyteless modulates YUCCA expression to regulate the development of lateral organs in *Arabidopsis*. *New Phytol* 179: 751 – 764.
- Li MR, Li HQ and Wu GJ (2006) Study on factors influencing *Agrobacterium*-mediated transformation of *Jatropha curcas*. *J Mol Cell Bio* 39: 83 – 87
- Lin W, Anuratha CS, Datta K, Potrykus I, Muthukrishnan S and Datta SK (1995) Genetic engineering of rice for resistance to sheath blight. *Bio Techol*. 13: 686 - 691.

- Litz RE (1986) Effect of osmotic stress on somatic embryogenesis in *Carica* suspension cultures. *J Am Soc Hortic Sci.* 111: 969 – 972.
- Liu, S., Shao, S., Li, L., Cheng, Z., Tian, L., Gao, P. and Wang, L., 2015. Substrate-binding specificity of chitinase and chitosanase as revealed by active-site architecture analysis. *Carbohydrate research*, 418, pp.50-56.
- Lloyd G and McCown B (1980) Commercially-feasible micropropagation of mountain laurel, *Kalmia latifolia*, by use of shoot-tip culture. *Int Plant Prop Soc Proc* 30: 421 – 427.
- Loiseau J, Marche C and Deunff YL (1995) Effects of auxins, cytokinins, carbohydrates and amino acids on somatic embryogenesis induction from shoot apices of pea. *Plant Cell Tissue Organ Cult.* 41: 267–275.
- Lou, H. and S. Kako. 1995. Somatic embryogenesis and plant regeneration in cucumber. *HortScience* 29:906-909.
- Lü, J., Chen, R., Zhang, M., da Silva, J.A.T. and Ma, G., 2013. Plant regeneration via somatic embryogenesis and shoot organogenesis from immature cotyledons of *Camellia nitidissima* Chi. *Journal of plant physiology*, 170(13), pp.1202-1211.
- Lucas O, Kallerhoff J and Alibert G (2000) Production of stable transgenic sunflower (*Helianthus annuus* L.) from wounded immature embryos by particle bombardment and co-cultivation with *Agrobacterium tumefaciens*. *Mol. Breeding* 6: 476 - 487.
- Ma G and Xu Q (2002) Induction of somatic embryogenesis and adventitious shoots from immature leaves of cassava. *Plant Cell tissue Org Cult.* 70: 281 – 288.
- Madhulatha P, Kirubakaran SI and Sakthivel N (2006) Effects of carbon sources and auxins on *in vitro* propagation of banana. *Biologia Plantarum* 50 (4): 782 – 784.
- Mahendran, G. and Bai, V.N., 2016. Direct somatic embryogenesis of *Malaxis densiflora* (A. Rich.) Kuntze. *Journal of Genetic Engineering and Biotechnology*, 14(1), pp.77-81.
- Malathi B, Ramesh S, Rao KV and Reddy VD (2006) *Agrobacterium*-mediated genetic transformation and production of semilooper resistant transgenic castor (*Ricinus communis* L.). *Euphytica* 147: 441 – 9.



- Malepszy, S. and Nadolska-Orczyk, A. 1983. In vitro culture of *Cucumis sativus*. L. Regeneration of plantlets from callus formed by leaf explants. *Z. Pflanzenphysiol.* 111:273-276.
- Manjula S, Job A and Nair GM (2000) Somatic embryogenesis from leaf derived callus of *Tylophora indica* (Burm.f.) Merrill. *Indian J. exp. Biol.* 38: 1069 - 1072.
- Mante, S., Scorze. R., and Cordts, J.M. 1989. Plant regeneration from cotyledons of *Prunus persica*, *Prunus domestica* and *Prunus cerasus*. *Plant Cell Tiss. Org. Cult.* 19:1-11.
- María del Socorro Santos Díaz and Candy Carranza Álvarez (2009) Plant regeneration through direct shoot formation from leaf cultures and from protocorm-like bodies derived from callus of *Encyclia mariae* (Orchidaceae), a threatened Mexican orchid. *In Vitro Cell.Dev.Biol.-Plant* 45: 162 – 170.
- Mariyana Ivanova and Johannes Van Staden (2009) Nitrogen source, concentration, and NH<sub>4</sub><sup>+</sup>:NO<sub>3</sub><sup>2-</sup> ratio influence shoot regeneration and hyperhydricity in tissue cultured *Aloe polyphylla*. *Plant Cell Tiss Organ Cult* 99: 167 – 174.
- Marks TR and Simpson SE (1994) Factors affecting shoot development in apically dominant *Acer* cultivars *in vitro*. *J. hort. Sci.* 69: 543 - 551.
- Martin KP (2002) Rapid propagation of *Holostemma ada-kodien* Schult., a rare medicinal plant, through axillary bud multiplication and indirect organogenesis. *Plant Cell Rep* 21: 112 - 117.
- Masoud SA, Zhu Q, Lamb C and Dixon RA (1996) Constitutive expression of an inducible  $\beta$ -1, 3-glucanase in alfalfa reduces disease severity caused by the oomycete pathogen *Phytophthora megasperma* f. sp *medicaginis*, but does not reduce disease severity of chitin-containing fungi, *Transgenic Rec.* 5: 313 - 323.
- Mauch F, Mauch-Mani B and Boller T (1988) Antifungal hydrolases in pea tissue. II. Inhibition of fungal growth by combinations of chitinases and  $\beta$ -1,3-glucanase. *Plant Physiol* 88: 936 – 942.
- Maximova S, Miller C, Antfflnez de Mayolo G, Pishak S, Young A and Guiltinan MJ (2003) Stable transformation of *Theobroma cacao* L. and influence of matrix attachment regions on GFP expression. *Plant Cell Rep* 21: 872 – 883.
- Mc Keon TA and Chen GQ (2003) Transformation of *Ricinus communis*, the castor plant (US Patent No 6,620,986).

- McHughen A, Joren M and Feist G (1989) A preculture period prior to *Agrobacterium* inoculation increase production of transgenic plants. *J. Plant Physiol.* 135: 245 - 248.
- Meena K. Cheruvathur, Jyothi Abraham, Bince Mani and Dennis Thomas T (2010). Adventitious shoot induction from cultured internodal explants of *Malaxis acuminata* D. Don, a valuable terrestrial medicinal orchid *Plant Cell Tiss Organ Cult* page no and volume
- Menke-Milczarek and Janusz Zimny (2001) NH<sub>4</sub> + and NO<sub>3</sub> requirement for wheat somatic embryogenesis. *Acta Physiologiae Plantarum* Vol 23, No. 1: 37 – 42.
- Minal Wani., Snehal Pande., and Nitin. 2010. More Callus induction studies in *Tridax procumbens* L. *International Journal of Biotechnology Applications*, 2(1):11-14.
- Mohammadzadeh, R., Agheshlouie, M. and Mahdavinia, G.R., 2017. Expression of chitinase gene in BL21 pET system and investigating the biocatalytic performance of chitinase-loaded AlgSep nanocomposite beads. *International Journal of Biological Macromolecules*.
- Mohan, C., Naresh, B., Kumar, B.K., Reddy, V., Manjula, P., Keerthi, B., Sreekanth, D., Manzelat, S.F. Cherku, P.D., 2017. Micropropagation studies and phytochemical analysis of the endangered tree *Commiphora wightii*. *Journal of Applied Research on Medicinal and Aromatic Plants* 6, 70-79.
- Molina SM and Schobert C (1995) Micropropagation of *Ricinus communis*. *J Plant Physiol.*147: 270 – 2.
- Molina, R.V. and Nuez, F. 1995. Characterization and classification of different genotypes in a population of *Cucumis melo* based on their ability to regenerate shoots from leaf explants. *Plant Cell Tiss. Org. Cult.* 43:249-257.
- Moncousin C (1991) Rooting of *in vitro* cuttings. - In: Bajaj, Y.P.S. (ed.): *Biotechnology of Agriculture and Forestry*. Springer-Verlag, Heidelberg Vol. 17. Pp. 231 - 261.
- Monique G, Jean M, Christophe H, Reiner H, Roberte B, Philippe R and Guntler H (1996). *Agrobacterium* mediated transformation of Sunflower (*Helianthus annuus* L.) shoot apices: transformation patterns. *Molecular Breeding* 2: 329 - 338.
- Moravcikova J, Libantova G, Matusikova, J Check inital Nap and Mlynarova L (2004) Genetic transformation of Slovak cultivar of potato (*Solanum tuberosum* L.) efficiency and the behaviour of the transgene, *Biologia* 6, pp. 473–479.

- Moreira-Dias, JM., Molina, RV., Bordan, Y., Guardiola, JL., and Garcia-Luis-Luis, A. 2000. Direct and indirect shoot organogenic pathways in epicotyl cuttings of Troyer citrange differ in hormone requirements and in their response to light. *Ann. Bot (Lond)*, 5: 103-110.
- Moreno, V., Garcia-Sogo, M. Granell, I. Garcia-Sogo, B. and Roig, L.A. 1985. Plant regeneration from calli of melon (*Cucumis melo* L. Amarillo Oro). *Plant Cell Tiss. Org. Cult.* 5:139-146.
- Mosquera T, Angarita A and Montes de Gomez V (1999) Elongation, clonal micropropagation and phenotypic evaluation of plantlets obtained from callus, cultured in presence of *Fusarium oxysporum* toxic material. *Acta Hort* 307: 257 – 263.
- Mousavizadeh, S.J., Mashayekhi, K. and Hassandokht, M.R., 2017. Indirect somatic embryogenesis on rare octoploid *Asparagus breslerianus* plants. *Scientia Horticulturae*, 226, pp.184-190.
- Muhammad Akram and Faheem Aftab (2009) An efficient method for clonal propagation and *in vitro* establishment of softwood shoots from epicormic buds of teak (*Tectona grandis* L.). *For. Stud. China* 11(2): 105– 110
- Muller A, Iser M and Hess D (2001) Stable transformation of sunflower (*H. annuus* L.) using a non-meristamatic regeneration protocol and green fluorescent protein as a vital marker. *Trans. Res* 10: 435 - 444.
- Murashige T and Skoog F (1962) A revised medium for rapid growth and biosynthesis with tobacco tissue culture. *Physiol Plant* 15: 474 – 497.
- Murray F, Brettell R, Matthews P, Bishop D and Jacobsen J (2004) comparison of *Agrobacterium* mediated transformation of four barley cultivars using GFP and GUS reporter genes. *Plant Cel. Rep.* 22: 397 - 402.
- Muruganatham M, Amutha S and Ganapathi A (2010) Somatic embryo productions by liquid shake culture of embryogenic calluses in *Vigna mungo* (L.) Hepper. *In Vitro Cell.Dev.Biol.—Plant* 46: 34 – 40.
- Muthukumar B, Mariamma Veluthambi K and Gnanam A (1996) Genetic transformation of cotyledon explants of cowpea (*Vigna uniuigulata*) immature seeds by seeds response. *Plant Cel. Rep.* 15: 980 - 985.
- Mythili, J.B. and Thomas, P.1999. Micropropagation of pointed gourd (*Trichosanthes dioica* Roxb.). *Scientia Hort.* 79:87–90.

- Nair M, Menon MR, Suharban N and Verma AS (1979) Anthracnose of cassava: a new record in India. *Curr. Sci.* 48: 443 - 443.
- Namdeo, A.G., Priya, T., Bhosale, B.B., 2012. Micropropagation and production of camptothecin from *In vitro* plants of *Ophiorrhiza mungos*. *Asian Pacific Journal of Tropical Biomedicine*, 2(2), S662-S666.
- Nestares GM, Zorzoli R, Mroginski LA and Picardi LA (1996) Plant regeneration from cotyledons derived from mature sunflower seeds. *Helia* 19: 107 – 112.
- Neumann K: Pflanzliche Zell und Gewebekulturen. - Ulmer, Stuttgart 1995.
- Niazian, M., Noori, S.A.S., Galuszka, P., Tohidfar, M. and Mortazavian, S.M.M., 2017. Genetic stability of regenerated plants via indirect somatic embryogenesis and indirect shoot regeneration of *Carum copticum* L. *Industrial Crops and Products*, 97, pp.330-337.
- Nielsen KK, Jorgensen P and Mikkelsen JD (1994) Antifungal activity of sugarbeet chitinase against *Cercospora beticola*: an autoradiographic study on cell wall degradation. *Plant Pathol* 43: 979 – 986.
- Ohtani, K., 2016. Gene regulation by the VirS/VirR system in *Clostridium perfringens*. *Anaerobe*, 41, pp.5-9.
- Olsen FL (1987) Induction of microspore embryogenesis in cultured anthers of *Hordeum vulgare* L. The effects of ammonium nitrate, glutamine and asparagine as nitrogen sources. *Carlsberg Res. Commun.* 52: 393 - 404.
- Orts, M.C., B. Garcia-Sogo, M.V. Roche, L.A. Roig and V. Moreno. 1987. Morphogenetic response of calli from primary explants of diverse cultivars of melon. *HortScience* 22:666.
- Orts, M.C., Garcia-Sogo, B. Roche, M.V. Roig, L.A. and Moreno, V. 1987. Morphogenetic response of calli from primary explants of diverse cultivars of melon. *HortScience* 22:666.
- Parthraj, R., Kshirsagar, P.R., Chavan, J.J., Umdale, S.D., Nimbalkar, M.S., Dixit, G.B., Gaikwad, N.B., 2015. Highly efficient *In vitro* regeneration, establishment of callus and cell suspension cultures and RAPD analysis of regenerants of *Swertia lawii* Burkill. *Biotechnology Reports* 6, 79-84.

- Perani L, Radke S, Wilke - Douglas M and Bossert M (1986) Gene transfer methods for crop improvement: Introduction of foreign DNA into plants. *Physiol. Plantarum*, 68: 566 - 570.
- Pillai, G.S., Martin, G., Raghu, A.V., Lyric, P.S., Balachandran, I. and Ravindran, P.N., 2008. Optimizing culture conditions for in vitro propagation of *Trichosanthes cucumerina* L.: an important medicinal plant. *Journal of herbs, spices & medicinal plants*, 14(1-2), pp.13-28.
- Potrykus I (1991) Gene transfer to plants: assessment of published approaches and results. *Annu Rev Plant Physiol Plant Mol Biol*. 42: 205 – 225
- Prem Kumar, G.P., Sivakumar, S., Siva, G., Vinoth, S., Vigneswaran, M., Kanakachari, M., Senthil Kumar, T., Jayabalan, N., 2015. Evaluation of different carbon sources for high frequency callus culture with reduced phenolic secretion in cotton (*Gossypium hirsutum* L.) cv. SVPR-2. *Biotechnology Reports*, 7, 72-80.
- Pretto FR and Santarem ER (1997) Callus formation and plant regeneration from *Hypericum perforatum* leaves. *Plant Cell Tissue Organ Cult*. 62: 107 - 113.
- Pritchard J, Wyn-Jones RG and Tomos AD (1991) Turgor, growth and rheological gradients in wheat roots following osmotic stress. *J Exp Bot*. 42: 1043 – 1049.
- Pullai, T., 2006. *Encyclopaedia of World Medicinal Plants*. Vol-IV, Regency Publication New Delhi. 1977.
- Punja Z.K., F.A. Tang and G.G. Sarmento. 1990. Isolation, culture and plantlet regeneration from cotyledon and mesophyll protoplasts of two pickling cucumber (*Cucumis sativus* L.) genotypes. *Plant Cell Rep*. 9:61-64.
- Punja ZK (2001) Genetic engineering of plants to enhance resistance to fungal pathogens - a review of progress and future prospects. *Can J Plant Pathol* 23: 16 – 235.
- Punja ZK and Zhang YY (1993) Plant chitinases and their roles in resistance to fungal disease. *J Nematol* 25: 526 – 540.
- Purkayastha J, Sugla T, Paul A, Solleti S and Sahoo L (2008) Rapid in vitro multiplication and plant regeneration from nodal explants of *Andrographis paniculata*: a valuable medicinal plant. *In Vitro Cell.Dev.Biol.-Plant* 44: 442 – 447.

- Purohit, S., Nandi, S.K., Paul, S., Tariq, M. and Palni, L.M.S., 2017. Micropropagation and genetic fidelity analysis in *Amomum subulatum* Roxb.: a commercially important Himalayan plant. *Journal of Applied Research on Medicinal and Aromatic Plants*, 4, 21-26.
- Quraishi A and Mishra SK (1998) Micropropagation of nodal explants from adult trees of *Cleistanthus collinus*. *Plant Cell Rep.* 17: 430 - 433.
- Rahman, M., Amin, M., Islam, M., Sultana, R., 2011. Mass propagation of *Solanum surattense* Bum. using direct adventitious shoot organogenesis from intershoot tip. *Acta Agriculturae Slovenica* 97(1), 11- 17.
- Raja, A., Jayabalan, N., 2011. *In vitro* shoot regeneration and flowering of Sesame (*Sesamum indicum* L.) cv. SVPR - 1. *Journal of Agricultural Technology* 7(4), 1089-1096.
- Rajender, K. and Reuben, T.C., (2017). *In vitro* clonal propagation of vulnerable ethnomedicinal cucurbit, red ball snake gourd (*Trichosanthes tricuspidata* Lour.). *Int J Pharm Bio Sci* 8(2): (B) 205-209.
- Rajesh, M., Sivanandhan, G., Subramanyam, K., Kapildev, G., Jaganath, B., Kasthuriengan, S., Manickavasagam, M. and Ganapathi, A., 2014. Establishment of somatic embryogenesis and podophyllotoxin production in liquid shake cultures of *Podophyllum hexandrum* Royle. *Industrial Crops and Products*, 60, pp.66-74.
- Ramesh Anbazhagan V and Ganapathi A (1999) Somatic embryogenesis in cell suspension cultures of pigeonpea (*Cajanus cajan* L.). *Plant Cell Tiss. Organ Cult.* 56: 179 – 184.
- Rani G, Talwar D, Nagpal A and Virk GS (2006) Micropropagation of *Coleus blumei* from nodal segments and shoot tips. *Biol. Plant.* 50: 496 - 500.
- Rao MS and Purohit SD (2006) *In vitro* shoot bud differentiation and plantlet regeneration in *Celastrus paniculatus* Willd. *Biol. Plant.* 50: 501 - 506.
- Rastogi S, Rizvi SMH, Singh RP and Dwivedi UN (2008) *In vitro* regeneration of *Leucaena leucocephala* by organogenesis and somatic embryogenesis. *Biologia Plantarum* 52 (4): 743 – 748.
- Ray, H.Y., Scochi, A.M., and Gonzalez, A.M. 2000. Plant regeneration in *Arachis pinoi*

- Ream, W. 1989. *Agrobacterium tumefaciens* and interkingdom genetic exchange. *Ann. Rev. Phytopathol.* 27:583-618.
- Reddy KRK and Bahadur B (1989a) Adventitious bud formation from leaf cultures of castor (*Ricinus communis* L.). *Curr Sci* 58: 152 – 4.
- Reddy KRK and Bahadur B (1989b) In vitro multiplication of castor. In: Farook SA, Khan IA, editors. *Recent Advances in Genetics and Cytogenetics*. Hyderabad: Premier, p. 479–82.
- Reddy KRK, Ramaswamy N and Bahadur B (1987b) Cross incompatibility between *Ricinus* and *Jatropha*. *Plant Cell Incomp Newslett* 19: 60 – 5.
- Reinert J (1958) Über die kontrolle der morphogenese und die induction von adventivembryonen in gewebeulturen aus Karotten. *Planta* 53: 318 – 333.
- Reis, R.S., de Moura Vale, E., Heringer, A.S., Santa-Catarina, C. and Silveira, V., 2016. Putrescine induces somatic embryo development and proteomic changes in embryogenic callus of sugarcane. *Journal of proteomics*, 130, pp.170-179.
- Rey, HY., Scocchi, AM., Gonzalez, AM., and Mroginski, LA., 2000. Plant regeneration in *Arachis pintoi* (Leguminosae) through leaf culture. *Plant Cell Reports*, 19: 856-862.
- Reyes-Díaz, J.I., Arzate-Fernández, A.M., Piña-Escutia, J.L. and Vázquez-García, L.M., 2017. Media culture factors affecting somatic embryogenesis in *Agave angustifolia* Haw. *Industrial Crops and Products*, 108, pp.81-85.
- Ritala A, Mannonen L and Oksman - Caldentey KM (2001) Factors affecting the regeneration capacity of isolated barley microspores (*Hordeum vulgare* L.). *Plant Cell Rep.* 20: 403 – 407.
- Robert N, Roche, Karine, Leneau Y, Breda C, Boulay M, Esnault R and Buffard D (2002) Expression of grapevine chitinase genes in berries and leaves infected by fungal or bacterial pathogens. *Plant Sci* 162: 389 – 400.
- Romano A, Noronha C and Martins-Louçao MA (1995) Role of carbohydrates in micropropagation of cork oak. *Plant Cell Tissue Org Cult* 40: 159 – 167.
- Rugini E and Muganu MA (1998) Novel strategy for the induction and maintenance of shoot regeneration from callus derived from established shoots of apple (*Malus domestica* Borkh. cv. Golden Delicious. *Plant Cell Rep* 17: 581 - 585.

- Sailaja M, Tarakeswari M and Sujatha M (2008) Stable genetic transformation of castor (*Ricinus communis* L.) via particle gun-mediated gene transfer using embryo axes from mature seeds. *Plant Cell Rep* 27: 1509 – 1519.
- Sambrook J and David W Russel (2001). Molecular cloning – A Laboratory Manual, Vol. 1, Third Edition, Ed. By Jan Augustine, CSHL Press, New York.
- Samoylov VM, Tucker DM, Thibaud-Nissen F and Parrott WA (1998) A liquid-medium-based protocol for rapid regeneration from embryogenic soybean cultures. *Plant Cell Reports* 18: 49 – 54.
- Sanjaya, Bagyalakshmi Muthan, Thrilok Singh, Rathore Vittal and Ravishankar Rai Micropropagation of an endangered Indian sandalwood (*Santalum album* L.) - J For Res (2006) 11: 203 – 209. check the names of the author
- Sarvesh A, Ram Rao DM and Reddy TP (1992) Callus initiation and plantlet regeneration from epicotyl and cotyledonary explants of castor (*Ricinus communis* L.) *Adv Plant Sci* 5: 124 – 8.
- Saurabh, S., Prasad, D. and Vidyarthi, A.S., 2017. In vitro propagation of *Trichosanthus dioica* Roxb. for nutritional security. *Journal of Crop Science and Biotechnology*, 20(2), pp.81-87.
- Sautter C (1993) Development of a microtargetting device for particle bombardment of plant meristems. *Plant Cell Tissue Organ Cult* 33: 251 – 257
- Saxena PK, Mallik KS, Gill, R. 1992. Induction by thidiazuron of somatic embryogenesis in intact seedlings of peanut. *Planta*, 187:421–424.
- Scala A, Tegli S, Goggioli V and Lagazio C (1998) Host genotype and temperature-dependent colonization of *in vitro* carnation cultures by *Fusarium oxysporum* f.sp. *dianthi* race 2. *Phytoparasitica* 26: 213 – 222.
- Schickler H and Chet I (1997) Heterologous chitinase gene expression to improve plant defence against phytopathogenic fungi. *J Indust Microbiol Biotech* 19: 196 –201.
- Schlumbaum A, Mauch F, Vogeli U and Boller T (1986) Plant chitinase are potent inhibitors of fungal growth. *Nature* 324: 365 - 367.
- Schrammeijer B, Sijmons PC, Elzen PJM and Hoekema A (1990) Meristem transformation of Sunflower via *Agrobacterium*. *Plant cell Rep.* 9: 55 - 60.



- Sela-Buurlage MB, Ponstein AS, Bres-Vloemans SA, Melchers LS, van den Elen PJM and Cornellissen BJC (1993) Only specific tobacco (*Nicotiana tabacum*) chitinase and  $\beta$ -1,3-glucanase exhibit antifungal activity. *Plant Physiol* 101: 857 – 863.
- Sen J, Kalia S and Guha-Mukherjee S (2002) Level of endogenous free amino acids during various stages of culture of *Vigna mungo* (L.) Hepper— somatic embryogenesis, organogenesis and plant regeneration. *Curr. Sci.* 82: 429 – 433.
- Sharma KK, Bhatnagar P and Thorpe TA (2005) Genetic transformation technology: status and problems. *In Vitro Cell Dev Biol Plant* 41: 102 – 112
- Sharma, K.K. and Bhojwani, S.S. 1990. Histological aspects of in vitro root and shoot differentiation from cotyledon explants of *Brassica juncea* L. Czern. *Plant Sci.* 69:207-214.
- Shetty K and McKersie BD (1993) Proline, thioproline and potassium mediated stimulation of somatic embryogenesis in alfalfa (*Medicago sativa* L.). *Plant Sci.* 88: 185 – 193.
- Shivarajan, V.V., Indira, B., 1994. Ayurvedic drugs and their plant sources. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, 370-371. Jodhapur.
- Simon, D.P., Narayanan, A., Gouda, K.M. and Sarada, R., 2015. Vir gene inducers in *Dunaliella salina*; an insight in to the *Agrobacterium*-mediated genetic transformation of microalgae. *Algal Research*, 11, pp.121-124.
- Singhas. 1984. Influence of two commercial agars on in vitro shoot proliferation of 'Almey' crabapple and 'Seckel' pear. *Hort Science* 19:227-228.
- Singhas. 1984. Influence of two commercial agars on in vitro shoot proliferation of 'Almey' crabapple and 'Seckel' pear. *Hort Science* 19:227-228.
- Skirvin RM, Chu MC and Rukan H (1980) An improved medium for the in vitro rooting of Harbrite peach. *Proc. III State Hort. Soc.* 113: 30 – 38.
- Snedecor GW and Cochran WG (1989) Statistical methods, 8th edition. Iowa State University Press, Ames.
- Snedecor, GW., and Cochran, WG. 1989. Statistical Methods. 8th Ed. - Iowa State University, Ames. *Solanum melongena* cv. Florida Market. *Plant Science Letters*, 22: 119-125.

- Songstad DD, De Luca V, Brisson N, Kurz WGW, Nessler CL (1990) High levels of tryptamine accumulation in transgenic tobacco expressing tryptophan decarboxylase, *Plant Physiol.* 94: 1410 – 1413.
- Soniya EV and Sujitha M (2006) An efficient *in vitro* propagation of *Aristolochia indica*. *Biol. Plant.* 50: 272 - 274.
- Southern EM. (1975) Detection of specific sequences among DNA fragments separated by gel electrophoresis. *J Mol Biol.* Nov 5, 98(3): 503 – 517.
- Sreedhar, RV., Venkatachalam, L., Thimmaraju, R., Bhagyalakshmi, N., Narayan, MS., and Ravishankar, GA. 2008. Direct organogenesis from leaf explants of *Stevia rebaudiana* and cultivation in bioreactor. *Biologia Plantarum*, 52: 355–360.
- Sreekumar S, Seeni S and Pushpangadan P (2000) Micropropagation of *Hemidesmus indicus* for cultivation and production of 2- hydroxy 4- methyl benzaldehyde. *Plant Cell Tissue Organ Cult.* 62: 211 - 218.
- Srikun, N., 2017. *In vitro* propagation of the aromatic herb *Strobilanthes tonkinensis* Lindau. *Agriculture and Natural Resources*, 51(1), 15-19.
- Stachel SE, Messens E, Van Montagu M and Zambryski P (1985) Identification of the signal molecular produced by wounded plant cells that activate - T-DNA transfer in *Agrobacterium tumefaciens*. *Nature* 318: 624 - 629.
- Sticklen MB, Oraby HF (2005) Shoot apical meristem: a sustainable explant for genetic transformation of cereal crops. *In Vitro Cell Dev Biol Plant* 41: 187
- Stuart S and Strickland S (1984) Somatic embryogenesis from cell cultures of *Medicago sativa* L. II. The interaction of amino acids with ammonium. *Plant Sci. Lett.* 34: 174 – 181.
- Subramanyam, K., Arunachalam, C., Thaneshwari, R.M., Sulaiman, A.A., Manickavasagam, M. and Ganapathi, A., 2015. Highly efficient *Agrobacterium*-mediated in planta genetic transformation of *T. cucumerina* (*Tricosanthes cucumerina* L.). *Plant Cell, Tissue and Organ Culture (PCTOC)*, 123(1), pp.133-142.
- Sudhakar B, Ganapathi A, Prema S and Manickavasagam M (2006) *Agrobacterium* mediated Genetic transformation studies in Sugar cane (*Saccharum officinarum* L.) using axillary bud as target tissue. (ed.) N. Jayabalan, *Plant Biotechnology*. APH publishing corporation, New Delhi, 29 - 40.

- Suginta, W., Sirimontree, P., Sritho, N., Ohnuma, T. and Fukamizo, T., 2016. The chitin-binding domain of a GH-18 chitinase from *Vibrio harveyi* is crucial for chitin-chitinase interactions. *International journal of biological macromolecules*, 93, pp.1111-1117.
- Sujatha M (1996) Genetic and tissue culture studies in castor (*Ricinus communis* L.) and related genera. Ph.D thesis. Osmania University, Hyderabad, India.
- Sujatha M and Reddy TP (1998) Differential cytokinin effects on the stimulation of in vitro shoot proliferation from meristematic explants of castor (*Ricinus communis* L.). *Plant Cell Rep* 7: 561 – 6.
- Sujatha M and Sailaja M (2005) Stable genetic transformation of castor (*Ricinus communis* L.) via *Agrobacterium tumefaciens* - mediated gene transfer using embryo axes from mature seeds. *Plant Cell Rep* 23: 803 – 10.
- Sujatha M and Sailaja M (2007) Development of transgenic castor for insect resistance. Extended Summaries of the National Seminar on Changing Global Vegetable Oils Scenario: Issues and Challenges before India, Hyderabad, India; January 29 - 31. p. 7 – 8.
- Sujatha, M.,and Sailaja, M. 2007. Stable genetic transformation of castor (*Ricinus communis* L.) via *Agrobacterium tumefaciens*-mediated gene transfer using embryo axes from mature seeds. *Plant Cell Rep.*, 23:803-810.
- Sul I and Korban SS (1998) Effects of media, carbon sources and cytokinins on shoot organogenesis in the Christmas tree Scots pine (*Pinus sylvestris* L.).
- Sul IW and Korban (2004) Effects of salt formulations, carbon sources, cytokinins, and auxin on shoot organogenesis from cotyledons of *Pinus pinea* L. *Plant Growth Regul.* 43: 197 - 205.
- Sun Y, Zhang X, Huang C, Guo X and Nie Y (2006) Somatic embryogenesis and plant regeneration from different wild diploid cotton (*Gossypium*) species. *Plant Cell Rep.* 25: 289 – 296.
- Sunilkumar G, Rathore KS (2001) Transgenic cotton: factors influencing *Agrobacterium* – mediated transformation and regeneration, *Mol Breed.* 8: 37 – 52.
- Suresh R and Rao MV (1994). *In vitro* clonal multiplication of castor (*Ricinus communis* L.). *J. Swamy Bot. Club* 11:56-57.

- Susi A (1997) The effect of a transferred chitinase gene on the pathogen resistance of silver birch (*Betula pendula*). Thesis for Licentiate Degree in Forest Science, University of Joensuu, Finland
- Susi A, Mikkelsen JD, Nielsen KK and Von Weissenberg K (1995) Sugarbeet chitinase inhibits the growth of a spruce pathogen. *Eur J For Pathol* 25: 61
- Tabei Y, Kitadem S, Nishizawa Y, Kikuchi N, Kayano T, Hibi T and Akutsum K (1998) Transgenic cucumber plants harboring a rice chitinase gene exhibit enhanced resistance to gray mold (*Botrytis cinerea*). *Plant Cell Rep* 17: 159 – 164.
- Taylor NJ and Fauquet CM (2002) Microparticle bombardment as a tool in Plant science and Agricultural biotechnology. *DNA and Cell Biol.* 21: 963
- Thompson MR and Thorpe TA (1987) Metabolic and non-metabolic roles of carbohydrates. In: Cell and Tissue Culture in Forestry I. General principles and biotechnology, eds. by J.M. Bonga, D. J. Durzan Publ., Martinus Nijhoff Dordrecht: 89 - 112.
- Tideman J and Hawker JS (1982) In vitro propagation of latex-producing plants. *Ann. Bot.* 49: 273 – 279.
- Tingay S, McElroy D, Kalla R, Fieg S, Wang M, Thornton S and Brettell R (1997) Agrobacterium tumefaciens-mediated barely transformation. *Plant J.* 11: 1369 - 1376.
- Toufiq, N., Tabassum, B., Bhatti, M.U., Khan, A., Tariq, M., Shahid, N., Nasir, I.A. and Husnain, T., 2017. Improved antifungal activity of barley derived chitinase I gene that overexpress a 32 kDa recombinant chitinase in Escherichia coli host. *Brazilian Journal of Microbiology*. *Brazilian journal of microbiology*, 1-8.
- Toyoda H, Matsuda Y, Yamaga T, Ikeda S, Morita M, Tamai T and Ouchi S (1991) Suppression of the powdery mildew pathogen by chitinase microinjected into barley coleoptile epidermal cells. *Plant Cell Rep* 10: 217
- Toyokawa, S., Takeda, T., Ohigara, T., 1991. Isolation and characterization of a new abortifacient protein, Karasurin, from root tubers of *Trichosanthes kirilowii* Max. var. Japonicum Kitam. *Chem. Pharm. Boll.*, 39 (3), 716-719.
- Trulson, A.J., Simpson, R.B., and Shahin, E.A. 1986. Transformation of cucumber (*cucumis sativus* L.) plants with Agrobacterium rhizogenes. *Theor. Appl. Genet.* 73:11-15.

- Tupy J, Hrabetova E and Capkova V (1983) Amino acids and bivalent cations in the growth of tobacco pollen in mass culture. *Plant Sci. Lett.* 30: 91 – 98.
- Valvekens D, Montague MV and Lijsbettens MV (1988) *Agrobacterium tumefaciens* mediated transformation of *Arabidopsis thaliana* root explants by using kanamycin selection. *Proc Natl Acad Sci USA* 85: 5536 - 40.
- Vanjildorj, E, Tae-Woong Bae, Key-Zung Riu, Pil-Yong Yun, Shin-Young Park, Choon-Hwan Lee, Soo-Young Kim, Hyo-Yeon Lee (2006) Transgenic *Agrostis mongolica* Roshev. with enhanced tolerance to drought and
- Varisai Mohamed S, Wang CS, Thiruvengadam M and Jayabalan N (2004) In vitro plant regeneration via somatic embryogenesis through cell suspension cultures of Horsegram [*Macrotyloma uniflorum* (Lam.) Verdc.]. *In Vitro Cell Dev. Biol. - Plant* 40: 284 – 289.
- Vasudevan A, Ganapathi A, Selvaraj N and Vengadesan G (2002) Factors influencing GUS expression in Cucumber (*Cucumis sativus* Linn). *Indian*
- Vasudevan A, Selvaraj N, Ganapathi A, Choi CW, Manickavasagam M and Kasthuriengan S (2007) Direct plant regeneration from cucumber embryonal axis. *Biologia Plantarum* 51 (3): 521 – 524.
- Vasudevan A, Selvaraj N, Ganapathi A, Kasthuriengan S, Ramesh Anbazhagan V and Manickavasagam M (2004) Glutamine: a suitable nitrogen source for enhanced shoot multiplication in *Cucumis sativus* L. *Biologia Plantarum* 48: 1215 - 128.
- Velazhahan R, Samiyappan and Vidhyasekaran P (2000) Purification of an Elicitor-Inducible Antifungal Chitinase from Suspension-Cultured Rice Cells *Phytoparasitica*, Volume 28, Number 2.
- Veluthambi K, Krishnan M, Gould JH, Smith RH and Gelvin SB (1989) Opines stimulate induction of the *vir* genes of the *Agrobacterium tumefaciens* Ti plasmid. *J. Bacterial* 171: 3696 - 3703.
- Venkatachalam P, Kavi Kishor PB and Jayabalan N (1997). High frequency somatic embryogenesis and efficient plant regeneration from hypocotyls explants of groundnut (*Arachis hypogaea* L.). *Curr. Sci.* 72: 271 – 275.
- Vieitez, AM., Cuenca, B., San-José, MC., Martínez, MT. and Ballester A. 2000. Somatic embryogenesis from stem and leaf explants of *Quercus robur* L. *Plant Cell Rep* 18:538-543.

- Vila SK, Gonzalez AM, Rey HY and Mroginski LA (2003) In vitro plant regeneration of *Melia azedarach* L.: Shoot organogenesis from leaf explants. *Biologia Plantarum* 46: 13 - 19.
- Wang, H.Z., P.J. Zhao and X.Y. Zhou. 2007. Regeneration of transgenic cucumber plants with a WMV-2 CP gene. *Acta Phytophysiol. Sin.* 26:267-272.
- Wang, Q.J., Zheng, L.P., Yuan, H.Y. and Wang, J., 2013. Propagation of *Salvia miltiorrhiza* from hairy root explants via somatic embryogenesis and tanshinone content in obtained plants. *Industrial crops and products*, 50, pp.648-653.
- Wehner, T.C. and Lockly, R.D. 1981. In vitro adventitious shoot and root formation of cultivars and lines of *Cucumis saliva* L. *HortScience* 16:759-760.
- Wetherell DF (1984) Enhanced adventive embryogenesis resulting from plasmolysis of cultured wild carrot cells. *Plant Cell Tissue Organ Cult.* 5: 221 – 227.
- Wetherell DF and Dougall DK (1976) Sources of nitrogen supporting growth and embryogenesis in cultured wild carrot tissue. *Physiol. Plant.* 37: 97 – 103.
- Williams, S., Metraux, JP., Burkhart, W., Moyer, M., Dincher, S., Middlesteadt, S., Payne, G., Carnes, M., and Ryals, J. 1986. Isolation of a complementary DNA encoding a chitinase with structural homology to a bifunctional lysozyme/chitinase. *Proc. natn. Acad. Sci.*, 86, 896-900.
- Witzens B, Scowcroft WR, Downes RW & Larkin PJ (1988) Tissue culture and plant regeneration from sunflower (*Helianthus annuus*) and interspecific hybrids (*H. tuberosus* × *H. annuus*). *Plant Cell Tiss. Org. Cult.* 13: 61–76
- Wu H, Sparks C, Amoah B and Jones HD (2003) Factors influencing successful *Agrobacterium* mediated genetic transformation of wheat. *Plant Cel. Rep.* 21: 659 - 668
- XU, H.R., Lin, H.E., Wei, X.I.A.O. and SHEN, G.M., 2017. Identification of the key chitinase genes in *Tetranychus cinnabarinus* (Boisduval) based on the expression and sequence characteristic analysis. *Journal of Integrative Agriculture*, 16(4), pp.892-899.
- Xu, J.B., Y. Takahata and Zhang, F.L. 1998. Medium and genotype factors influencing shoot regeneration from cotyledonary explants of Chinese cabbage (*Brassica campestris* L. ssp. *pekinensis*). *Plant Cell Rep.* 17:780-786.

- Yang, S., Fu, X., Yan, Q., Guo, Y., Liu, Z. and Jiang, Z., 2016. Cloning, expression, purification and application of a novel chitinase from a thermophilic marine bacterium *Paenibacillus barengoltzii*. *Food chemistry*, 192, pp.1041-1048.
- Yu X and Reed BM (1993) Improved shoot multiplication of mature hazelnut (*Corylus avellana* L.) *in vitro* using glucose as a carbon source. *Plant Cell Rep.* 12: 256 - 259.
- Yukoh Hiei and Toshihiko Komari (2006) Improved protocol for transformation of indica rice mediated by *Agrobacterium tumefaciens*. *Plant Cell. Tiss. Org. Cult.* 85: 271 - 283.
- Zakaria, A.L., Ajlouni, M., Shatnawi, M., Shibli, R., Makhdmeh, I., Saeid, A.B.U., AL-Ghazawi, A.L. 2012. Callus induction, plant regeneration, and growth on barley (*Hordeum vulgare* L.). *South west J Hortic Biol Environ.* 25-39.
- Zhang BH (2000) Regulation of plant growth regulators on cotton somatic embryogenesis and plant regeneration. *Biochem.* 39: 1567 – 1570.
- Zhang, L.H., Cheng, Z.H., Cui, H.W., and Xue, W.X. 2000. Bud induction of serpent gourd (*Trichosanthes anguina* L.) *in vitro*. *Cucurbit Gen. Coop.* 23:80–82.
- Zhenying L and Binns AN (2003) Functional subsets of the Vir B type IV transport complex protein involved in the capacity of *Agrobacterium tumefaciens* to serve as a recipient in vir B mediated conjugal transfer of plamid RSF1010, *J. Bacteriol.*, 3259 - 3269.
- Zhu Q, Maher EA, Masoud S, Dixon RA and Lamb CJ (1994) Enhanced protection against fungal attack by constitutive co expression of chitinase and glucanase genes in transgenic tobacco, *Bio. Technol.* 12: 807
- Zonia A and Raio A (1999) Suseptibility of some peach root stocks to crown gall, *J of Plant Pathol.* 81: 181 – 187.