

UNIVERSITAT POLITÈCNICA DE CATALUNYA

ESCOLA TÈCNICA SUPERIOR D'ENGINYERS AGRÒNOMS DE LLEIDA

MICROPROPAGACIÓ DE *Cynara scolymus* CV. "BLANCA DE TUDELA":

Condicionants del procés i aproximació a la  
caracterització anatòmico-fisiològica en les diferents  
fases de cultiu.

Tesi presentada per Núria Cañameras i Riba per optar al grau de Doctor Enginyer Agrònom. Dirigida pel Dr. Angel Mingo Castel.

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## **BIBLIOGRAFIA**

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- Aitken, J., Horgan, K.J., Thorpe, T.A., 1981. "Influence of explant selection on the shoot-forming capacity of juvenile tissue of *Pinus radiata*". Can. J. For. Res., 11: 112-117.
- Ancora, G., 1986. "Globe artichoke (*Cynara scolymus*, L.)". In: Biotechnology in Agriculture and Forestry. Vol. 2, Crops I, pp 471-484.
- Ancora, G., Saccardo, F., 1987. "Carciofo: nuove tecniche di propagazione". Informatore Agrario, 43: 77-78.
- Ancora G., Belli-Donini M., Cuozzo, L., 1981a. "Moltiplicazione in vitro di apici vegetativi di carciofo". In: Atti 3rd Congr. Int. Stud. Carciofo, Bari, Ind. Grafica Laterza, Bari, pp 239-246.
- Ancora, G., Belli-Donini. M.L., Cuozzo, L., 1981b. "Globe artichoke plants obtained from shoot apices through rapid in vitro micropropagation". Scientia Horticulturae, 14: 207-213.
- Araus, J.L., Alegre, L., Tapia, L., Calafell, R., Serret, M.D., 1986. "Relationships between photosynthetic capacity and leaf structure in several shade plants". Amer. J. Bot., 73 (2): 1760-1770.
- Araus, J.L., Sauqué, E., Matas, J., Serret, M.A., 1989. "Seasonal changes in the photosynthetic capacity and leaf structure of *Fatsia japonica* leaves grown in a shadehouse". Jour. Hort. Sci., 64 (2): 189-197.
- Arce, P., López, B., Simón, A., Arbeloa, J., 1988. "Obtención de plantas de alcachofa (*Cynara scolymus*) por cultivo in vitro. Primeros resultados de su comportamiento en cultivo en pleno campo". Actas III Congreso S.E.C.H. (en prensa).
- Ayuso, P., Peña-Iglesias, A., 1980. "Obtaining healthy globe artichoke plants by shoot apex culture and clonal micropropagation in vitro". In vitro, 16 (3): 218.
- Ballantine, J.E.M., Forde, B.J., 1970. "The effect of light intensity and temperature on plant growth and chloroplast ultrastructure in soybean". Am. J. Bot., 57: 1150-1159.

- Barnes, L.R., 1979. "In vitro propagation of watermelon". Sci. Hort., 11: 223-227.
- Bauchesne, G., 1981. "Les milieux minéraux utilisés en culture in vitro et leur incidence sur l'apparition de bouturiers d'aspect pathologique". C.R. Acad. Agric., 67: 1389-1397.
- Benoît, H., 1975. "Amélioration des plantes". Faculté des Sciences. Université de Paris-Sud. Centre d'Orsay.
- Berthon, J.Y., Boyer, N., Gaspar, Th., 1987. "Sequential rooting media and rooting capacity of *Sequoiaadendron giganteum* in vitro". Peroxidase activity as a marker. Plant Cell Reports, 6: 341-344.
- Bigot, C., Foury, C., 1984. "Multiplication in vitro d'artichaut à partir de semences: comparaison au champ de quelques clones à la lignée dont ils sont issus". Agronomie, 4, (8): 699-710.
- Birecka, H., Miller, A., 1974. "Cell wall and protoplast isoperoxidases in relation to injury, indolacetic acid and ethylene effects". Pl. Physiology, 53: 569-574.
- Boardman, N.K., 1977. "Comparative photosynthesis of sun and shade plants". Ann. Rev. Plant Physiol., 60: 255-258.
- Böjkman, O., 1981. "Responses to different quantum flux densities". In: O.L. Lange, P.S. Nobel, C.B. Osmond & H. Zeigler (Eds): Encyclopedia of Plant Physiology, New Series. Volume 12A. Springer Verlag, Berlin, pp 57-107.
- Bose, T.K., Basu, S., Basu, R.N., 1973. "Changes in rooting factors during the regeneration of roots on cuttings of easy- and difficult- to -root cultivars of *Bougainvillea* and *Hibiscus*". Indian J. Plant Phisiol., 16: 127-139.
- Boswell, V.R., 1949. "Our vegetable travelers". Nat. Geog., 96: 145-217.
- Boxus, Ph., 1976. "Rapid production of virus-free strawberry by in vitro culture". Acta Horticulturae, 66: 35-37.
- Boxus, Ph., 1984. "Assainissement des arbres fruitiers et du fraisier par culture des méristèmes". Parasitica, 40: 139-155.

- Boxus, Ph., 1978.** Rapport d'activités du Centre de Recherches Agronomiques de Gembloux: 126-127.
- Boxus, Ph., Druart, P., 1986.** "Virus-free trees through tissue culture". In: Bajaj, Y.P.S. (Ed). Biotechnology in Agriculture and Forestry. Tress I. Vol. 1. Springer Verlarg, pp 24-30.
- Brainerd, K.E., Fuchigami, L.M., 1982.** "Stomatal functioning in vitro and greenhouse apple leaves in darkness, mannitol, ABA and CO<sub>2</sub>". J. Exp. Bot., 33: 382-392.
- Brainerd, K.E., Fuchigami, L.H., Kwaitkowski, S., Clarck, C.S., 1981.** "Leaf anatomy and water stress of aspectically cultured 'Pixy' plum grown under different environments". Hort Science, 16 (2): 173-175.
- Brown, D.W.C., Leung, D.W.M., Thorpe, T.A., 1979.** "Osmotic requirement for shoot formation in tobacco callus". Physiol. Plant., 46: 36-41.
- Buyss, C., 1968.** "La culture de méristèmes et son application commerciale en vue de l'obtention de plants sains d'oïillet". In: Les nouveautés récentes dans la manipulation des plantes, pp 71-79.
- Capellades, M., Lemeur, R., Debergh, P., 1990.** "Kinetics of chlorophyll fluorescence in micropropagated rose shootlets". Photosynthetica, 24 (1): 190-193.
- Canals, F., 1987.** "Cultiu in vitro de *Syngonium podophyllum* i de *Syngonium erytropiphyllum*". Treball fi de carrera presentat a l'Escola Superior d'Agricultura de Barcelona, 215 pp.
- Casells, A.C., Long, R.D., Mousdale, D.M.A., 1982.** "Endogenous IAA and morphogenesis in tobacco petiole cultures". Physiol. Plant., 56: 507-512.
- Cervera, J.M., 1989.** "Efecte de les citoquinines en la multiplicació in vitro de *Cynara scolymus*, L. varietat 'Blanca de Tudela'". Treball fi de carrera presentat a la Escola Universitària d'Enginyeria Tècnica Agrícola de Barcelona, 193 pp.
- Chabot, B.F., Chabot, J.E., 1977.** "Effects of light and temperature on leaf anatomy and photosynthesis in *Fragaria vesca*". Oecologia, 26: 363-377.



- Chabot, B.F., Jurik, T.W., Chabot, J.F., 1979. "Influence of instantaneous and integrated light-flux density on leaf anatomy and photosynthesis". Am. Jour. Bot., 66: 940-945.
- Chandra, G.R., Gregory L.E., Worley, J.F. 1971. "Studies on the initiation of adventitious roots on mung bean hypocotyl". Plant Cell Physiol., 12: 317-324.
- Chandra, G.R., Worley, J.F., Gregory, L.E., Clark, H.D., 1973. "Effect of 6-benzyladenine on the initiation of adventitious roots on mung hypocotyl". Plant Cell Physiol., 14: 1209-1212.
- Clarasó, J., 1987. "Algunes consideracions sobre la fase de multiplicació in vitro de *Phyllostachis aurea*. Treball fi de carrera presentat a l'Escola Universitària d'Enginyeria Tècnica Agrícola de Barcelona, 204 pp.
- Claveria, E., Carazo, N., Valero, J., Martinez, F.X., 1988. "Micropropagación de *Codiaeum variegatum* (Var. Mrs. Iceton). Actas del III Congreso S.E.C.H. (en prensa).
- Costa, A.S., Duffus, J.E., Morton, D., Yarwood, E.C., Bar din, R., 1959. "A latent virus of California artichokes". Phytopathology, 49: 49-53.
- Cutter, 1971. "Plant anatomy: experiment and interpretation. Part 2. Organs". Arnold. London.
- Daguin, F., Letouzé, R., 1985. "Relations entre hypolignification et état vitreux chez *Salix babylonica* en culture in vitro. Rôle de la nutrition ammoniacale". Can. J. Bot., 63: 324-326.
- Dale, J.E., 1965. "Leaf growth in *Phaseolus vulgaris* II. Temperature effects and the light factor". Ann. Bot. NS, 29: 293-308.
- Dale, J.E., 1976. "Cell division in leaves". In: Yeoman MM (ed). Cell division in higher plants. Academic Press. London, pp 315-345.
- Debergh, P., 1983. "Effects of agar brand and concentration on the tissue culture medium". Physiol. Plant., 59: 270-276.
- Debergh, P., Harbaoui, Y., Lemeur, R., 1981. "Mass propagation of globe artichoke (*Cynara scolymus*): evaluation of different hypotheses to overcome vitrifications with special reference to water potential". Physiol. Plant., 53: 181-187.

- Debergh, P., Maene, L., 1981.** "A scheme for commercial propagation of ornamental plants by tissue culture". *Scientia Hort.*, 14 (4): 335-345.
- Debergh, P., Maene, L., 1984.** "Pathological and physiological problems related to the *in vitro* culture of plants". *Parasitica*, 40: 69-75.
- Debergh, P., Maene, L., 1985.** "Some aspects of stock-plant preparation for tissue culture propagation". *Acta Horticulturae*, 166: 21-24.
- De Leo P., Greco B., 1976.** "Nuova tecnica di propagazione del carciofo: coltura *in vitro* di meristemi apicali". In: Atti 2nd Congr. Int. Stud. Carciofo. Ed. Minerva Medica, Torino, pp 657-667.
- Departament d'Agricultura, Ramaderia i Pesca, 1986.** "L'agricultura a les comarques de Catalunya. Superfícies i Produccions 1984". D.A.R.P., 200 pp.
- De Proft, M.P., Van den Broek, G., De Greef, J.A., 1987.** "Involvement of ethylene on senescence and vitrification of *in vitro* cultured miniroses". *Acta Horticulturae*, 212: 217-222.
- Denco, I., 1987.** "Factors influencing vitrification of carnation and coniferous". *Acta Horticulturae*, 212: 167-176.
- Dengler, N.G., 1980.** "Comparative histological basis of sun and shade leaf dimorphism in *Helianthus annuus*". *Can. J. Bot.*, 58 (6): 717-730.
- Desjardins, Y., Gosselin, A., Lamarre, M., 1990.** "Growth of transplants and *in vitro*-cultured clones of *Asparagus* in response to CO<sub>2</sub> enrichment and supplemental lighting". *J. Amer. Soc. Hort. Sci.*, 115 (3): 364-368.
- Devos, P., de Langhe, E., de Bruijne, E., 1975.** "Influence of 2,4-D on the propagation of *Cynara scolymus* *in vitro*". 27 th Symposium on Crop Protection, 27: 829-836.
- Dillen, W., Buysens, S., 1989.** "A simple technique to overcome vitrification in *Gypsophila paniculata*, L.". *Plant Cell, Tissue and Org. Cult.*, 19: 181-188.
- Donnelly, D.J., Vidaver, W.E., 1984a.** "Leaf anatomy of red raspberry transferred from culture to soil". *J. Americ. Soc. Hort. Sci.*, 109: 172-176.

- Donnelly, D.J., Vidaver, W.E., 1984b.** "Pigment content and gas exchange of red raspberry *in vitro* and *ex vitro*". *J. Amerc. Soc. Hort. Sci.*, 109: 177-178.
- Donnelly, D.J., Vidaver, W.E., Lee, K.Y., 1985.** "The anatomy of tissue cultured red raspberry prior to and after transfer to soil". *Plant Cell, Tissue and Org. Cult.*, 4: 43-50.
- Druart, Ph., 1987.** "Contribution à l'élaboration de techniques de production en masse *in vitro* d'espèces ligneuses utilisables en culture fruitière". Thèse de doctorat. Gembloux.
- Druart, Ph., 1988.** "Regulation of axillary branching in micropropagation of woody plant species". *Acta Horticulturae*, 227: 369-380.
- Druart, P., Boxus, P., Liard, O., Delaite, B., 1981.** "La micropropagation du Merisier à partir de la culture de méristème". Coll. Int. Culture *in vitro* essences forestières. IUFRO, pp 101-108.
- Druart, Ph., Kevers, C., Boxus, Ph., Gaspar, Th., 1982.** "In vitro promotion of root formation by apple shoots through darkness effect on endogenous phenols and peroxidases". *Z. Pflanzenphysiol.*, 108: 429-436.
- Economou, A.S., Read, P.E., 1986.** "Microcutting production from sequential reculturing of hardy deciduous azalea shoot tips". *HortScience*, 21: 137-139.
- Esau, K., 1977.** "Anatomy of seed plants" Wiley & Sons. New York. 550 pp
- Espelta, J.M., Fabregues, C., Isart, J., Murull, A., Nadal, M., Ros, M.A., Salleras, J.M., 1983.** "Cultiu de la carxofa a Catalunya". In: *Jornada de la carxofa*, pp 1-18.
- Fabri, A., Sutter, E., Dunston, S., 1986.** "Anatomical changes in persistent leaves of tissue-cultured strawberry plants after removal from culture". *Scientia Horticulturae*, 28: 331-337.
- FAO, 1989.** "Anuario de producción 1988". Vol. 42. FAO.
- Favre, J.M., 1977.** "La rhizogenèse. Aspects divers d'un processus d'organogenèse végétale". *Ann. Univ. Abidjan. Ser. C. Sci.*

- Filiti, N., Montuschi, N., Rosati, P., 1987.** "In vitro rhizogenesis: histo-anatomical aspects on *Prunus* roots-tock". *Adv. Hort. Sci.*, 1: 34-38.
- Foddai, A., Marras, F., Idini, G., 1977.** "Presenza di un 'Poty-virus' sul carciofo (*Cynara scolymus*, L.) in Sardegna". *Studi Sassaresi-Annali Facoltà Agraria. Università Sassari*, 12 pp.
- Foddai, A., Corda, P., Idini, G., 1983.** "Influenza del potyvirus latente del carciofo 'Spinoso sardo' sulla produttività delle piante in pieno campo. I. Risultati relativi al primo anno di impianto". *Rivista di Patologia Vegetale*, XIX: 29-35.
- Foong, T.W., Barnes, M.F., 1981.** "The hormone level in stem cuttings of difficult to root and easy to root rhododendrons". *Biochem. Physiol. Pflanzen*, 176: 13-22.
- Foury, C., 1978.** "Some historical aspects of artichoke varieties (*Cynara scolymus*, L.)". *J. Agr. Trad. Botan. Appl.*, 25: 25-50.
- Foury, C., 1979.** "Some practical aspects of single plant selection in globe artichoke (*Cynara scolymus*, L.). I. Creation of lines". *Ann. Amelior. Plantes*, 29: 383-418.
- Franclet, A., David, A., David, H., Boulay, M., 1980.** "Première mise en évidence morphologique d'un rajeunissement de méristèmes primaires caulinaires del pin maritime âgé (*Pinus pinaster* Sol.)". *C.R. Acad. Sci.*, 290: 927-930.
- Friend, D.J.C., Nelson, V.A., Fisher, J.E., 1962.** "Leaf growth in Marquis wheat, as regulated by temperature, light intensity and daylength". *Can. J. Bot.*, 40: 1299-1311.
- Fuchigami, L.H., Cheng, T.Y., Soeldner, A., 1981.** "Abaxial transpiration and water loss in aseptically cultured plum". *J. Amer. Soc. Hort. Sci.*, 106 (4): 519-522.
- Gaba, V., Black, M., 1983.** "The control of Cell Growth by light". In: W. Shropshire, Jr. & H. Mohr (ed). *Photomorphogenesis. Encyclopedia of Plant Physiology*, New Series, V 16A. Springer Verlag, Berlin, pp 358-400.
- Gallitelli, D., Rana, G.L., Di Franco, A., 1978.** "Il virus della scolorazione perinervale del carciofo". *Phytopath. Medit.*, 17: 1-7.

- Gamborg, O.L., Eveleig, D.E., 1968. "Culture methods and detection of gluconases in suspension cultures of wheat and barley". Can. J. Biochem., 46: 417.
- Gaspar, Th., 1979. "Des isoperoxidases comme marqueurs de la différenciation cellulaire". In: Xème Rencontre de Méribel sur la Différenciation cellulaire, pp 175-196
- Gaspar, Th. 1981. "Rooting and flowering, two antagonistic phenomena from hormonal point of view". In: B. Jeffcoat (ed). Aspects and Prospects of Plant Growth Regulators. Monograph 6. British Plant Growth Regulator Group, Wantage, pp 39-49.
- Gaspar Th., Penel C., Thorpe, T., Greppin, H., 1982. "Peroxidases 1970-1980". In: Gaspar, Th., Penel, C., Thorpe, T., Greppin, H. (Ed). A survey on their biochemical and physiological roles in higher plants. Université de Genève, Genève.
- Gaspar, Th., Kevers, C., Debergh, P., Maene, L., Paques, M., Boxus, Ph., 1987. "Vitrification: morphological, physiological and ecological aspects". In: Barga, J.M. & Durzan, D.J. (Ed). Cell and Tissue Culture in Forestry, vol. 1. General Principles and Biotechnology. Martinus Nijhoff Publishers, pp 152-166.
- Gaspar, Th., Penel, C., Greppin, H., 1975. "Peroxidase and isoperoxidases in relation to root and flower formation". Plant Biochem. J., 2: 33-47.
- Gaspar, Th., Penel, C., Tran Thanh Van, M., Greppin, H., 1979. "Des isoperoxidases comme marqueurs de la différenciation cellulaire et du développement chez les végétaux". In: Xème Rencontre de Méribel sur la Différenciation cellulaire, pp 175-196
- Gaspar, Th., Smith, D., Thorpe, T., 1977. "Arguments supplémentaires en faveur d'une variation inverse du niveau auxinique endogène au cours des deux premières phases de la rhizogenèse". C.R. Acad. Sc. Paris, 285: 327-330.
- Gautheret, R.J., 1981. Discussion. C.R. Acad. Agric. Paris: 693-694
- Gertsson, U.E., 1988. "Large-scale *in vitro* propagation of *Senecio x hybridus* Hyl". Journal of Hort. Sci., 63(1): 131-136.

- Grout, B.W.W., Aston, M.J., 1978a.** "Transplanting of cauliflower plants regenerated from meristem culture. I. Water loss and water transfer related to changes in leaf wax and xylem regenerated". Horticultural Research, 17: 1-7.
- Grout, B.W.W., Aston, M.J., 1978b.** "Transplanting of cauliflower plants regenerated from meristem culture. II. Carbon dioxide fixation and the development of photosynthetic ability". Horticultural Research, 17: 65-71.
- Grout, B.W.W., Crisp, P.** 1977. "Practical aspects of the propagation of cauliflower by meristem culture". Acta Horticulturae, 78: 289-295.
- Grout, B.W.W., Millan, S., 1985.** "Photosynthetic development of micropropagated strawberry plantlets following transplanting". Ann. Bot., 55 (1): 129-131.
- Haissing, B.C., 1986.** "Metabolic processes in adventitious rooting". In: Jackson MB (ed). New root formation in plants and cuttings, Martinus Nijhoff, Dordrecht, pp 141-189.
- Hakkaart, F.A., Versluijs, J.M.A., 1983.** "Some factors affecting glassines in carnation meristem tip cultures". Neth. J. Plant. Path., 89: 47-53.
- Hansen, A.J., Green, L., 1983.** "Potential of ribavirin for tree fruit virus inhibition". Acta Horticulturae, 130: 183-184.
- Harbaoui, Y., Debergh, P., 1980.** "Multiplication in vitro de clones sélectionnés d'artichaut (*Cynara scolymus*)". In: Application de la culture in vitro à l'amélioration des plantes maraîchères. Réunion Eucarpia, Versailles, pp 1-7.
- Harboui, Y., Samijn, G., Welvaert, W., Debergh, P., 1982.** "Assainissement viral de l'artichaut par la culture in vitro d'apex méristématiques". Phytopath. medit., 21: 15-19.
- Harkin, J.M., Obst, J.R., 1973.** "Lignification in trees: indication of exclusive peroxidase participation". Science, 180: 296-298.
- Hayashi, M., Kozai, T., 1987.** "Development of a facility for accelerating the acclimatization of tissue-cultured plantlets and the performance of test cultivations". Proc. Plant Micropropagation in Hort. Ind. Arlon: 123-135.

- Hayashi, M., Nakayama, M., Kozai, T., 1988.** "An application of the acclimatization unit for growth of carnation explants, and for rooting and acclimatization of the plantlets". *Acta Horticulturae*, 230: 189-194.
- Hedrick, U.P., 1972.** "Sturtevant's notes on edible plants". Dover. New York.
- Hereu, M., 1987.** "Cultiu in vitro de rosa hibrida varietat 'Omega'". Treball fi de carrera presentat a l'Escola Universitària d'Enginyeria Tècnica Agrícola de Barcelona, 172 pp.
- Hueto, M.N., 1988.** "Puesta punto de la técnica de micro-propagación in vitro de la alcachofa (*Cynara scolymus*)". Trabajo final de carrera de la Escuela Universitaria de Ingeniería Técnica Agrícola de Navarra.
- Ivanová, E., Zajacová, K., Bolvansky, M., 1989.** "The effect of IBA on root initiation in explant cultures of sweet chestnut (*Castanea sativa* Mill.)". *Biológia* (Bratislava), 44 (9): 811-817.
- Jagels, R., Dyer, M.V., 1983.** "Morphometric analysis applied to wood structure. I. Cross-sectional cell shape and area change in red spruce". *Wood and Fiber Science*, 15: 376-386.
- Jones, O.P., 1976.** "Effects of phloridzin and phloroglucinol on apple shoots". *Nature*, 262: 392-393.
- Kemp, P.R., Cunningham, G.L., 1981.** "Light, temperature and salinity effects on growth, leaf anatomy and photosynthesis of *Distichlis spicata* (L.)". *Am. J. Bot.*, 68: 507-516.
- Kevers, C., Coumans, M., Coumans-Gilles, M.F., Gaspar, Th., 1984.** "Physiological and biochemical events leading to vitrification of plants cultured in vitro". *Physiol. Plant.*, 61: 69-74.
- Kevers, C., Gaspar, Th., 1985.** "Soluble, membrane and wall peroxidases, phenylalanine ammonia-lyase, and lignin changes in relation to vitrification of carnation tissue cultured in vitro". *J. Plant Physiol.*, 118: 41-48.
- Kevers, C., Goldberg, R., Chu-Ba, J., Gaspar, T., 1988.** "Composition of the walls of stem and leaves of vitrifying carnation". *Biologia Plantarum*, (30) 3: 219-223.
- Kim, K.W., Byun, M.S., 1988.** "Physiological and morphological characteristics of glaucous and vitreous carnation plantlets obtained in vitro". *Jor. Kor. Soc. Hort. Sci.*, 29: 216-223.

- Kim, K.W., Byun, M.S., Kang, M.S., 1988. "Effect of ABA and agar in preventing vitrification of carnation plantlets cultured *in vitro*". Jor. Kor. Soc. Hort. Sci., 29: 208-215.
- Koch, W., 1976. "Blattfarbstoffe von Fichte (*Picea abies* L. Karst) in Abhangigkeit von Jahressgang, Blattalter und-typ". Photosynthetica, 10: 280-290.
- Kozai, T.H., Hayashi, M., Hirosawa, Y., Kodama, T., Watanebe, I., 1987. "Environmental control for acclimatization of *in vitro* cultured plants (1). Development of the acclimatization unit for accelerating the plantlet growth and the test cultivation". J. Agr. Met., 42 (4): 349-358.
- Kozai, T.H., Oki, H., Fujiwara, K., 1988. "Effects of CO<sub>2</sub> enrichment and sucrose concentration under high photosynthetic photon fluxes on growth of tissue-cultured *Cymbidium* plantlets during the preparation stage". Proc. of Micropropagation in Hort. Ind. Arlon: pp 135-141.
- Lane, W.D., 1979. "The influence of growth regulators on root and shoot initiation from flax meristem tips and hypocotyls *in vitro*". Physiol. Plant., 45: 260-264.
- Lê, C.L., 1985. "Multiplication clonale *in vitro* du pomier (*Malus domestica* Borkh. var. Gravenstein)". Rev. Suisse Vitic. Arboric. Hortic., 5: 311-315.
- Lee, N., Wetzstein, M.Y., Sommer, H.E., 1985. "Effects of quantum flux density on photosynthesis and chloroplast ultrastructure in tissue-cultured plantlets seedlings of *Liquidambar styraciflua*, L. towards improved acclimatization and field survival". Plant. Physiol., 78: 637-641.
- Lee, N., Wetzstein, M.Y., Sommer, H.E., 1986. "The effect of agar vs. liquid medium on rooting in tissue-cultured sweetgum". HortScience, 21 (2): 317-318.
- Leshem, B., 1983. "Growth of carnation meristems *in vitro*: anatomical structure of abnormal plantlets and the effect of agar concentration in the medium on their formation". Ann. Bot., 52: 413-415.
- Leshem, B., Werker, E., Shaley, D.P., 1988. "The effects of cytokinins on vitrification in melon and carnation". Annals of Bot., 62, (3): 271-276.

- Letouzé, R., Daguin, F.,** 1983. "Manifestation spontanée et aléatoire d'une croissance anormale en culture *in vitro*. Recherche de marqueurs métaboliques". Rev. Can. Biol. Exp., 42: 23-28.
- Letouzé, R., Daguin, F.,** 1987. "Control of vitrification and hypolignification process in *Salix babylonica* cultured *in vitro*". Acta Horticulturae, 212: 185-191.
- Leonhardt, W., Kandeler, R.,** 1987. "Ethylene accumulation in culture vessels -a raison for vitrification". Acta Horticulturae, 212: 223-229.
- Lichtenthaler, H., Wellburn, A.R.,** 1983. "Determination of total carotenoids and chlorophylls a and b of leaf extracts in different solvents". Biochimil. Society Transactions, 603: 591-592.
- Linsmaier, E.M., Skoog, F.,** 1965. "Organic growth factor requirements of tobacco tissue cultures". Physiologia Plantarum, 18: 100-127.
- Lowry, O.H., Rosebrough, N.J., Lewis-Farr, A.L., Randall, R.,** 1951. "Protein measurement with the folin phenol reagent". Jour. Biol. Chem., 193: 265-275.
- Maene, L., Debergh, P.,** 1985. "Liquid medium additions to established cultures to improve elongation and rooting *in vivo*". Plant Cell, Tissue and Organ Culture, 5: 23-33.
- Maene, L., Debergh, P.,** 1987. "Optimalisation of the transfer of tissue cultured shoots to *in vivo* conditions". Acta Horticulturae, 212: 335-348.
- Magnifico, V.,** 1987. "Alcuni aspetti agronomici della coltivazione del carciofo". Informatore Agrario, 4: 57-66.
- Majorana, G., Rana, G.L.,** 1970. "Un nuovo virus latente isolato da carciofo in Puglia". Phytopath. Medit., 18: 193-196.
- Margara, J.,** 1982. "La multiplication végétative *in vitro*, aspects généraux". LI-AGRO-15/B.T.I. 374: 701-710.
- Marín, J.A.,** 1986. "Morfología, fisiología y aclimatación del patrón de cerezo micropropagado 'Masto de Montaña' (*Prunus cerasus*, L.)". Tesi doctoral. Facultad de Biología. Universidad de Barcelona. 281 pp.

- Marín, J.A., Gella, R., 1987.** "Acclimatization of the micro-propagated cherry rootstock 'Masto de Montaña' (*Prunus cerasus*, L.)". *Acta Horticulturae*, 212: 603-606.
- Marín, J.A., Gella, R., 1988.** "Is dessication the cause of the poor survival rate in the acclimatization of micropaginated *Prunus cerasus*, L.?". *Acta Horticulturae*, 230: 105-112.
- Marín, J.A., Gella, R., Herrero, M., 1988.** "Stomatal structure and functioning as a response to environmental changes in acclimatized micropaginated *Prunus cerasus* L.". *Annals of Botany*, 62: 663-670.
- Marrou, J., Mehani, S., 1964.** "Étude d'un virus parasite de l'artichaut". *C.R. Académie d'Agriculture de France*, pp 1053-1064.
- Martelli, G.P., 1964.** "L'arricciamento maculato del carciofo (*Cynara scolymus*, L.)". *Phytopath. Medit.*, 4: 58-60.
- Martelli, G.P., Russo, M., Rana, G.L., 1979.** "A survey of the virological problems of *Cynara* species". In: *Atti 3rd Congre. Inter. Stud. Carciofo. Bari. Ind. Grafica Laterza*, pp 145-147.
- Martinez, F.X., Cañameras, N., 1988.** "El cultivo in vitro i l'agricultura". *Monografies de l'Obra Agrícola de la Caixa de Pensions. Tecnología i Economia Agraria* 5, 54 pp.
- Marzi, V., 1969.** "Current status of world artichoke production. *Cynara scolymus*, L. In: *Proc. 1st Int. Cong. Artichoke Studies*, pp 319-342.
- Mauroomicale, G., 1987.** "Panorama varietale del carciofo e sua prevedibile evoluzione". *Informatore Agrario*, 4: 69-75.
- Migliori, A., Lot, M., Pecaut, P., 1984a.** "Les virus de l'artichaut identifiés en Bretagne et dans les régions méridionales". *PHM. Revue Horticole*, 249: 43-47.
- Migliori, A., Marzin, H., Rana, G.L., 1984b.** "Mise en évidence du Tomato Black Ring Virus (TBRV) chez l'artichaut en France". *Agronomie*, 4, 683-686.
- Migliori, A., Marzin, H., 1985.** "Présence du Tobacco Rattle Virus (TRV) dans les cultures d'artichaut en France". *Agronomie*, 6: 549-552.

- Migliori, A., Homo, E., Corre, J., Marzin, H., Legal, V., Curvale, J.P., 1987.** "Répartition, fréquence et nuisibilité des virus chez l'artichaut en Bretagne". PHM. Revue Horticole, 274: 29-36.
- Miller, L.R., Murashige, T., 1976.** "Tissue culture propagation of tropical foliage plants". In vitro, 12: 797-813.
- Milloring, G., 1976.** "Laboratory manual of biologic electron microscopy. Man. Saviolo-Edited. Vercelli.
- Ministerio de Agricultura, Pesca y Alimentación, 1989.** "Anuario de Estadística Agraria 1987". Ministerio de Agricultura, Pesca y Alimentación. Madrid.
- Ministerio de Agricultura, Pesca y Alimentación, 1990.** "Boletín Mensual de Estadística" Vol. 2, 57 pp.
- Molnar, G., 1987.** "A new patented method for mass propagation of shoot cultured". In vitro problems Related to Mass Propagation of Horticultural Plants. Acta Horticulturae, 212: 125-130.
- Moncousin, C., 1979.** "Multiplication végétative accélérée et sélection bactérienne de *Cynara Scolymus*, L.". Atti 3rd Congr. Stud. Int. Carciofo, Bari. Ind. Laterza, pp 219.
- Moncousin, C., 1980.** "Multiplication végétative accélérée de *Cynara scolymus* L.: Résultats préliminaires". Rev. Hortic. Suisse, 53: 149-154.
- Moncousin, C. 1981.** "Multiplication végétative accélérée de *Cynara scolymus* L.: II Amélioration des diverses techniques". Rev. Hortic. Suisse, 54: 105-111.
- Moncousin, C., Ducreux, G., 1984.** "Activité peroxydase et rhizogenèse dans le cas de *Cynara scolymus* L.: évolution au cours de repiquages successifs de boutures cultivées *in vitro*. Comparaison avec de jeunes plantes issues de graines". Agronomia, 4: 105-111.
- Moncousin, Ch., Gaspar, Th., 1983.** "Peroxidase as a marker for rooting improvement of *Cynara scolymus* L. cultured *in vitro*". Biochem. Physiol. Pflanz., 178: 263-271.
- Morel, G.M., Martin, C., 1952.** "Guerison de dahlias atteints d'une maladie à virus". C.R. Acad. Sci. (Paris), 235: 1324-1325.

- Morel, G.M., Muller, J.F.,** 1968. "La guérison de la pomme de terre atteintes de maladies à virus". Ann. Physiol. Vég., 10: 113-139.
- Moreno, O.A., Vazquez-Duhalt, R., Ochoa, J.L.,** 1989. "Peroxidase activity in callus and cell suspension cultures of radish *Raphanus sativus* var. Cherry Bell". Plant Cell, Tissue and Org. Cult., 18: 321-327.
- Mori, K., Hosokawa, D.,** 1977. "Localisation of viruses in apical meristem and production of virus-free plants by means of meristem and tissue culture". Acta Horticulturae, 78: 389-396.
- Morone Fortunato, I., Vanidia, S., Lattanzio, V.,** 1981. "Primi risultati sulla micropropagazione del carciofo (*Cynara scolymus*, L.)". In: Atti 3rd Congr. Inter. Stud. Carciofo. Bari. Ind. Grafica Laterza, pp 243-253.
- Morone Fortunato, I.,** 1985. "Aspetti cito-istologici della moltiplicazione vegetativa *in vitro* del carciofo". Annali della Facoltà di Agraria 1981-1982. Università di Bari., 32: 367-376.
- Mossella, C.L., Macheix, J.J., Jonard, R.,** 1980. "Les conditions du microbouturage *in vitro* du pêcher (*Prunus persica* Batsch): influences combinées des substances de croissance et de divers composés phénoliques". Physiol. Veg., 18: 597-608.
- Murashige T., Skoog F.,** 1962. "A revised medium for rapid growth and bioassays with tobacco tissue cultures". Physiol. Plant., 15: 473-479.
- Nanda, K.K., Bhattacharya, N.C., Kaur, N.P.,** 1973. "Effect of morphactin on peroxidases and its relationship to rooting hypocotyl cuttings of *Impatiens balsamina*". Plant Cell Physiol., 14: 207-211.
- Navatel, J.C.,** 1982. "Problèmes liés à la production de portegreffé d'arbres fruitiers par multiplication *in vitro*". Fruits, 37: 331-36.
- Nemeth, G.,** 1981. "Adventitious root induction by substituted 2-chloro-3 phenyl-propionitriles in apple rootstocks cultured *in vitro*". Sci. Hort., 14: 253-259.
- Nitsch, N.L., Nitsch, J.P.,** 1969. "The induction of flowering in stem segments of *Plumbago indica*, L. The production of vegetative buds". Planta, 72: 355.

- Nobel, P.S., 1976. "Photosynthetic rates of sun leaves versus shade leaves of *Hyptis amorgi* Torr". Plant Physiol., 58: 218-223.
- Nobel, P.S., 1977. "Internal leaf area and cellular CO<sub>2</sub> resistance: photosynthetic implications of variations with growth conditions and plant species". Plant, 40: 137-144.
- Norton, M.E., Norton, C.R., 1986. "Change in proliferation with repeated *in vitro* subculture of shoots of woody species of Rosaceae". Plant Cell, Tissue and Org. Cult., 5: 187-197.
- Oberbauer, S.F., Strain, B.R., 1986. "Effects of canopy position and irradiance on the leaf physiology and morphology of *Pentaclethra macroloba* (Mimosaceae)". Am. J. Bot., 73: 409-416.
- Onisei, T., Toth, E.T., Amariei, D., 1988. "Callus induction and plant regeneration of *Cynara scolymus* L.". Rev. Rom. Biol., Biol. Veg., 33 (2): 115-119.
- Ortiz, L., 1989. "Efecto del ácido indolacético en medio de multiplicación de rosa híbrida variedad 'Omega'". Treball fi de carrera presentat a l'Escola Superior d'Agricultura de Barcelona, 114 pp
- Pâques, M., Boxus, Ph., 1984. "Comparative study of vitreous and no vitreous plantlets of apple rootstock M-26 cultivated *in vitro*". Abstracts book, 4th Congress Feder. Europ. Soc. Plant Physiol. Strasbourg, pp 282-283.
- Pâques, M., Boxus, Ph., 1987a. "A model to learn vitrification, the rootstock apple M-26. Present results". Acta Horticulturae, 212: 193-210.
- Pâques, M., Boxus, Ph., 1987b. "Vitrification: a phenomenon related to tissue water content". Acta Horticulturae, 212: 245-252.
- Pâques, M., Boxus, Ph., 1987c. "Vitrification: Review of literature". Acta Horticulturae, 212: 155-166.
- Pasqualetto, P.L., Wergin, W.P., Zimmerman, R.H., 1988. "Changes in structure and elemental composition of vitrified leaves of 'Gala' apple *in vitro*". Acta Horticulturae, 227: 352-357.

- Patience, P.A., Alderson, P.G., 1987.** "Development of a system to study peroxidases during the rooting of liliac shoots produced *in vitro*". *Acta Horticulturae*, 212: 267-272.
- Paul, L., Feucht, W., 1985.** "Massenvermehrung von *Prunus cerasus* und *Prunus avium* *in vitro*". *Gartensbauwiss*, 50: 268-273.
- Pécaut, P., 1984.** "Recherches sur l'artichaut". INRA-Montfavet. Rapport d'activité 1983-1984: 21-24.
- Pécaut, P., 1986.** "Recherches sur l'artichaut". INRA-Montfavet. Rapport d'activité 1985-1986: 19-21.
- Pécaut, P., Corre, J., Lot, H., Migliori, A., 1985.** "Intérêt des plants sains d'artichaut régénérés par la culture *in vitro*". P.H.M. *Revue Horticole*, 256: 21-26.
- Pécaut, P., Dumas, R., Lot, H., 1983.** "Virus-free clones of globe artichoke obtained after *in vitro* propagation". *Acta Horticulturae*, 131: 303-309.
- Peña-Iglesias, A., Ayuso, P., 1972.** "Degeneration of Spanish globe artichoke (*Cynara scolymus*, L.) plants. 1) Virus isolation, host range, purification and ultrastructure of infected hosts". *Anales del INIA. Ser. Prot. Veg.*, 2: 89-122.
- Peña-Iglesias, A., Ayuso, P., 1974.** "The elimination of viruses from globe artichoke (*Cynara scolymus*, L.) by etiolated meristem tip culture". Proc. XIX Int. Hort. Congr. 1A, 63, Warszawa, setp., 1974.
- Peña-Iglesias, A.; Ayuso, P., 1983.** "The elimination of some globe artichoke viruses by shoot apex culture and *in vitro* micropropagation". *Acta Horticulturae*, 127: 31-38.
- Piagnani, C., Eccher, T., 1988.** "Factors affecting the proliferation and rooting of chestnut *in vitro*". *Acta Horticulturae*, 227: 384-386.
- Pilet, P.E., Braun, R., 1967.** "The interrelation of RNA, Auxin, and Auxin-oxidases in lentil roots". *Physiol. Plant.*, 20: 870-878.
- Phan, C.t., Letouzé, R., 1983.** "A comparative study of chlorophyll, phenolic and protein contents and of hydroxycinnamate: CoA ligase activity of normal and vitreous plants (*Prunus avium*, L.) obtained *in vitro*". *Plant. Sci. Letters*, 31: 323-327.

- Porceddu, E., 1979.** "The Bari germoplasm laboratory". Plant Genetic Resources Newsletter, 38: 3-5.
- Porceddu, E., Dellacecca, V., Bianco, V.V., 1974.** "Classificazione numerica di cultivar di carciofo. Nuovi sudi sul carciofo". Atti 2nd Congr. Inter. Stud. Carciofo, pp 1105-1119.
- Quaquarelli, A., Martelli, G.P., 1966.** "Ricerche sull'agente dell'arricciamento maculato del carciofo". 1<sup>o</sup> Ospiti differenziali e proprietà. Atti I Cong. Un. Fitopat. Medit., pp 168-177.
- Quorin, M., Boxus, P., Gaspar, Th., 1974.** "Root initiation and isoperoxidases of stem tip cuttings from mature *Prunus* plants". Physiol. Vég., 2 165-174
- Quorin, M., Lepoivre, P., 1977.** "Etude de milieux adaptés aux cultures *in vitro* de *Prunus*". Acta Horticulturae, 78: 437-442.
- Rana, G.L., Gallitelli, D., Kyriakopoulou, P.E., Russo, M., Martelli, G.P., 1980.** "Host range and properties of artichoke yellow ringspot virus". Ann. Appl. Biol., 96: 177-185.
- Ranadive, A.S., Haard, N.F., 1972.** "Peroxidase localization and ligning formation in developing pear fruit". J. Food Sci. 37, 381-383.
- Read, P., Gaston, S., Carlson, C.J., Conviser, L., Preece, J.E., 1979.** "Programming stock plants for tissue culture success". Proceedings of the 6th Annual Meeting of Plant Growth Regulator Working Group. Las Vegas, Nevada, pp 20-24.
- Roberts, L.W., Miller, A.R., 1983.** "Is ethylene involved in xylem differentiation?". Vistas Plant. Sci., 6: 1-24.
- Roca, W.M., 1984.** "Cassava". In: Sharp, Evans, Ammirato & Yamada (ed). Handbook of Plant Cell Culture. Vol. 2. Crop Sciences. Macmillan Publishers, pp 269-301.
- Romani, F., Standardi, A., 1987.** "La vetrificazione in germogli di M-26 coltivati *in vitro*". Annali della Facoltà di Agraria. Università degli studi di Perugia, 41: 1 - 21.
- Romero, J., Carazo, G., Peña-Iglesias, A., 1985.** "La degeneración de la alcachofa. II. Nuevos datos hacia la caracterización del virus causal". Anales INIA. Sec. Agric., 120, 1: 27-38.

- Rugini, E., Verma, D.C., 1983. "Micropropagation of difficult-to-propagate almond (*Prunus amygdalus*, Batsch) cultivar". Plant Sci. Letter, 28: 273-281.
- Russin, W.A., Evert, R.F., 1984. "Studies on the leaf of *Populus deltoides* (Salicaceae) morphology and anatomy". Am. J. Bot., 71 (10): 1398-1415.
- Scaramuzzi, F., Itollo, P.R., 1985. "Multiplication végétative in vitro de *Lantana sellowiana* Link et Otto par culture et repiquages répétés de méristèmes". C.R. Acad. Sc. Paris, 15: 591-596.
- Saccardo, F., Ancora, G., 1984. "Contributo della micropropagazione al miglioramento della coltura del carciofo". Informatore Agrario: 24-26.
- Samartin, A., Vieitez, A.M., Vieitez, E., 1986. "Rooting of tissue cultured camellias". Journal of Hort. Sci. 61 (1): 113-120.
- Scaramuzzi, F., d'Itollo, P.R., 1985. "Multiplication végétative in vitro de *Lantana sellowiana* Link et Otto par culture et repiquages répétés de méristèmes". C.R. Acad. Ser. Paris, 15: 591-596.
- Schoch, P.G., 1972. "Effects of shading on structural characteristics of the leaf and yield of fruit in *Capsicum annuum* L.". J. Amer. Soc. Hort. Sci., 97 (4): 461-464.
- Schulze, E.D., Hall, A.E., 1982. "Stomatal responses, water loss and CO<sub>2</sub> assimilation rates of plants in contrasting environments". In: O.L. Large, P.S. Nobel, C.B., Osmond & H. Ziegler (ed). Encyclopedia of Plant Physiology, New Series, Vol. 12B. Springer Verlag, Berlin, pp 181-230.
- Scorticini, M., Chiariotti, A., 1987. "Bacterial contaminations in plant tissue culture: preliminary studies on techniques of detection and effects of various antibiotic compounds". Adv. Hort. Sci., 1: 68-72.
- Shackel, K.A., Novello, V., Sutter, E.G., 1990. "Stomatal function and cuticular conductance in whole tissue-cultured apple shoots". J. Amer. Soc. Hort. Sci., 115 (3): 468-472.
- Short, K.C., Wardle, K., Grout, B.W.W., Simpkins, I., 1984. In vitro physiology and acclimatization of aseptically cultured plants. In: F.J. Novat et al., (Ed). Plant Tissue and Cell Culture Application to Crop Improvement. Praga, pp 475-486.

- Short, K.C., Warburton, J., Roberts, A.V., 1987.** "In vitro hardening of cultured cauliflower on *Chrysanthemum* plantlets to humidity". *Acta Horticulturae*, 212: 329-334.
- Simola, L.K., 1973.** "Changes in the activity of several enzymes during root differentiation in cultured cells of *Atropa belladonna*". *Z. Pflanzenphysiol.*, 68: 373-378.
- Spurr, A.R., 1969.** "A low viscosity epoxy resin embedding medium for electron microscopy". *J. Ultras. Res.*, 26: 31-43.
- Standardi, A., 1982.** "Effects of repeated subcultures in shoots of *Actinidia chinensis*". In: Fujiwara, A., (ed). *Plant Tissue Culture 1982*. The Japanese Association for Plant Tissue Culture, pp. 737-738.
- Standardi, A., Micheli, M., 1988.** "Control of vitrification in proliferating shoots of M-26". *Acta Horticulturae*, 227: 425-427.
- Suelzu, R., Tognoni, F., Lercari, B., 1989.** "Ulteriori studi sulla micropropagazione del carciofo". *Informatore Agrario*, 41: 70-72.
- Sutter, E., Langhans, R.W., 1979.** "Epicuticular wax formation on carnation plantlets regenerated from shoot tip culture". *J. Amer. Soc. Hort. Sci.*, 104: 493-496.
- Sutter, E., Langhans, R.W., 1982.** "Formation of epicuticular wax and its effect on water loss in cabbage plants regenerated from shoot-tip culture". *Can. J. Bot.*, 12: 2896-2902.
- Swartz, H.J., Galletta, G.J., Zimmerman, R.H., 1983.** "Field performance and phenotypic stability of tissue culture-propagated thornless blackberries". *Jour. Amer. Soc. Hort. Sci.*, 108: 285-290.
- Syvertsen, J.P., Smith, M.L., 1984.** "Light acclimation in citrus leaves. I. Changes in physical characteristics, chlorophyll and nitrogen content". *J. Amer. Soc. Hort. Sci.*, 109 (6): 807-812.
- Tendeille, C., Lecerf, M., 1974.** "La multiplication végétative de l'asperge (*Asparagus officinalis*, L.). Action de diverses facteurs, en particulier de la nutrition minérale, sur le développement des meristèmes d'asperge, sur la croissance de plantules issues de ces méristèmes et sur la production de plantes adultes". *Ann. Amélior. Plantes*, 24: 70-72.

- Thimann, K.V., 1977.** "Hormone action in the whole life of plants". The University of Massachusetts Press. Amherst: 448 pp.
- Thorpe, T., Brown, D.W.C., 1980.** "Osmotic relations during shoot formation in tobacco callus". In vitro, 3: 217.
- Thorpe, T., Tran Thanh Van, M., Gaspar, Th., 1978.** "Iso-peroxidases in epidermal layers of tobacco and changes during organ formation in vitro". Physiol. Plant., 44: 388-394.
- Van Hoof P., Gaspar, Th., 1976.** "Peroxidase and isoperoxidase changes in relation to root initiation of Asparagus cultured in vitro". Scienctia Horticulturae, 4: 27-31.
- Verbelen, J.P., De Greef, J.A., 1979.** "Leaf anatomy of Phaseolus vulgaris L, in light and darkness". Am. Jour. Bot., 66: 970-976.
- Vieitez, A.M., Ballester, A., San-Jose, M.C., Vieitez, E., 1985.** "Anatomical and chemical studies of vitrified shoots of chestnut regenerated in vitro". Physiol. Plant., 65: 177-184.
- Vieitez, A.M., Ballester, A., Vieitez, E., 1987.** "Vitrification in chestnut shoots regenerated in vitro". Acta Horticulturae, 212: 231-234.
- Vieitez, A.M., San-Jose, M.C., Ballester, A., 1989.** "Progress towards clonal propagation of Camellia japonica cv. Alba Plena by tissue culture techniques". Jour. Hort. Sci., 64 (5): 605-610.
- Vieth, J., Morisset, C., Lamond, H., 1983.** "Histologie de plantules vitreuses de Pyrus malus cv. M26 et le Pelargonium peltatum cv. Chester Frank, issues de la culture in vitro (Etude préliminaire)". Rev. Can. Biol. Exp., 42: 29-32.
- Viseur, J., 1987.** "Micropropagation of pear, Pyrus communis, L. in a double phase culture medium". Acta Horticulturae, 212: 117-124.
- Von Arnold, S., Erickson, T., 1984.** "Effect of agar concentration on growth and anatomy of adventitious shoots of Picea abies, L." Plant Cell, Tissue and Organ Culture, 3: 257-264.

- Wardle, K., Quimlan, A., Simpkins, J., 1979.** "Abscisic acid and the regulation of water loss in plantlets of *Brassica oleracea* var. *Botrytis* regenerated through apical meristem culture". Ann. Bot., 43: 745-752.
- Wardle, K., Dobbs, E.B., Short, K.C., 1983.** "In vitro acclimatization of aseptically cultured plantlets to humidity". Jour. Amer. Soc. Hort. Sci., 108: 386-389.
- Watelet-Gonod, M.C., Favre, J.M., 1980.** "Miniaturisation et rajeunissement chez *Dahlia variabilis* (variété Télévision) cultivé in vitro". Ann. Sci. Nat. Bot. Biol. Veg., 2-3: 51-67.
- Webster, C.A., Jones, O.P., 1989.** "Micropropagation of apple rootstock M.9: effect of sustained subculture on apparent rejuvenation in vitro". Jour. Hort. Sci., 64 (4): 421-428.
- Weiser, C.J., Blaney, L.T., 1967.** "The nature of boron stimulation to root initiation and development in beans". Proc. Amer. Soc. Hort. Sci., 90: 191-199.
- Welvaert, W., Zitouni, B., 1974.** "Investigations of infections degeneration of Artichoke in Tunisia". In: 2nd Int. Meeting on Globe Artichoke. Nuovi studi del carciofo. Ed. Minerva Medica.
- Welvaert, W., Van Varenberg, J., 1979.** "Recherches sur la dégénération infectieuse en Tunisie". In: Atti 3rd Congr. Int. Stud. Carciofo. Bari. Ind. Grafica Laterza, pp 929-942.
- Werner, E.M.; Boe, A.A., 1980.** "In vitro propagation of Malling-7 apple rootstocks". HortScience, 15: 509-510.
- Westcott, R.J., Henshaw, G.G., Roca, W.M., 1977.** "Tissue culture methods and germplasm storage in potato". Acta Horticulturae, 78: 45-48.
- Wetzstein, H.Y., Sommer, H.E., 1982.** "Leaf anatomy of tissue cultured *Liquidambar styraciflua* (Hamamelidaceae) during acclimatization". Amer. J. Bot., 69: 1579-1586.
- Whatley, J.M., Whatley, F.R., 1984.** "Luz y vida vegetal". Cuadernos de Biología. Omega. Barcelona, 103 pp.
- Wolter, E., Gordon, J.E., 1975.** "Peroxidase as indicators of growth and differentiation in aspen callus culture". Physiol. Plant., 33: 219-223.

- Yamada, Y., Kobayashi, S., Watanabe, K., Hayashi, U., 1987.**  
"Production of horse-radish peroxidase by cell culture".  
J. Chem. Tech. Biotechnol., 38: 31-39.
- Ziv, M., Meir, G., Halevy, A.H. 1983.** "Factors influencing  
the production of hardened glaucous carnation plantlets  
*in vitro*". Plant Cell, Tissue and Organ Culture, 2: 55-  
65.
- Zohary, D., Basnizky, J., 1975.** "The cultivated artichoke  
*Cynara scolymus*. Its probable wild ancestors". Econ.  
Bot., 29: 233-235.
- Zuccherelli, G., 1979.** "Moltiplicazione *in vitro* dei por-  
tainnesti clonali del pesco". Frutticoltura, 41: 15-20.