

### References

- Abdel-Rahman, M., and I. F.M.R. 1974. The role of exogenous plant growth regulators in the dormancy of onion-bulbs. *J. Agri. Sci.* 82: 113-116.
- Aksenova, N.P., T.N. Konstantinova, V.N. Lozhnikova, S.A. Golyanovskaya, and L.I. Sergeeva. 2009. Interaction between day length and phytohormones in the control of potato tuberization in the *in vitro* culture. *Russ. J. Plant Physiol.* 56: 454-461.
- Alvim, R. 1978. Seasonal variation in the hormone content of willow II. Effect of photoperiod on growth and abscisic acid content of trees under field conditions. *Plant Physiol.* 62: 779-780.
- Alvim, R., E.W. Hewett, and P.F. Saunders. 1976. Seasonal variation in the hormone content of willow I. Changes in abscisic acid content and cytokinin activity in the xylem sap. *Plant Physiol.* 57: 474-476.
- Apavatjrut, P., S. Anuntalabchais, P. Sirirugsa, and C. Alisi. 1999. Molecular markers in the identification of some early flowering *Curcuma* L. (*Zingiberaceae*) species. *Ann. Bot.* 84: 529-534.

Araki, T. 2001. Transition from vegetative to reproductive phase. Curr. Opinion Plant Biol. 4: 63-68.

Arizona Cooperative Extension. 2009. Environmental factors that affect plant growth, Arizona Master Gardener Manual. [Online]. Available:  
<http://cals.arizona.edu/pubs/garden/mg/botany/environmental.html>  
[5 September 2009]

Baker, D. 2000. Vascular transport of auxins and cytokinins in *Ricinus*. Plant Growth Regul. 32: 157-160.

Baldwin, B.D., M.S. Bandara, and K.K. Tanino. 1998. Is tissue culture a viable system with which to examine environmental and hormonal regulation of cold acclimation in woody plants? Physiol. Plant. 102: 201-209.

Bangerth, F. 1994. Response of cytokinin concentration in the xylem exudate of bean (*Phaseolus vulgaris* L.) plants to decapitation and auxin treatment and relationship to apical dominance. Planta. 194: 439-442.

Bartels, P.G., and C.W. Watson. 1978. Inhibition of carotenoid synthesis by fluridone and norflurazon. Weed Sci. 26: 198-203.

Benkeblia, N. 2003. Postharvest technology of onions, p. 107-137, In R. N. R. Dris and S. M. Jain, eds. Crop Management and Postharvest Handling of Horticultural Products. Science Publishers, Enfield.

Ben-Tal, Y., and Y. Erner. 1999. Flowering control by artificial gibberellins. Acta Hort. 482: 21-26.

- Beveridge, C.A., I.C. Murfet, L. Kerhoas, B. Sotta, E. Miginiac, and C. Rameau. 1997. The shoot controls zeatin riboside export from pea roots. Evidence from the branching mutant *rms4*. *Plant J.* 11: 339-345.
- Blackshaw, R.E., and T. Entz. 1995. Day and night temperature effects on vegetative growth of *Erodium cicutarium*. *Weed Res.* 35: 471-476.
- Blatt, M.R., and A. Grabov. 1997. Signalling gates in abscisic acid-mediated control of guard cell ion channels. *Physiol. Plant.* 100: 481-490.
- Bohnsack, C.W., and L.S. Albert. 1977. Early effects tips of boron deficiency on indoleacetic acid oxidase levels of squash root. *Plant Physiol.* 59: 1047-1050.
- Bou, J., A. Virgos, J. Martinez-Garcia, and S. Prat. 2003. Potato Tuberization: Evidence for a SD-dependent and gibberellin-dependent pathway, p. 57-66., In I. Macháková and G.A. Romanov, eds. Introduction of Phytohormones in Plant Biotechnology and Agriculture. Kluwer, Dordrecht.
- Bravo-F, P., and E.G. Uribe. 1981. Temperature dependence of concentration kinetics of absorption of phosphate and potassium in corn roots. *Plant Physiol.* 67: 815-819.
- Campos, K.O., and G.B. Kerbauy. 2004. Thermoperiodic effect on flowering and endogenous hormonal status in *Dendrobium* (Orchidaceae). *J Plant Physiol.* 161: 1385-1387.

Changjeraja, R. 2009. Gene Expression and Factors Affecting Flowering of *Curcuma alismatifolia* Gagnep. Ph.D. Thesis, Chiang Mai University. Chiang Mai. 113 p.

Changjeraja, R., N. Potaphon, S. Mekchay, and S. Ruamrungsri. 2008. Effect of photoperiod on growth and flowering of *Curcuma alismatifolia* Gagnep. Acta Hort. 78: 137-140.

Chen, H.H., P.H. Li, and M.L. Brenner. 1983. Involvement of abscisic acid in potato cold acclimation. Plant Physiol. 71: 362-365.

Chen, J.-G., S.-H. Cheng, W. Cao, and X. Zhou. 1998. Involvement of endogenous plant hormones in the effect of mixed nitrogen source on growth and tillering of wheat. J. Plant Nutri. 21:87-97.

Chernyad'ev, I.I. 2005. Effect of water stress on the photosynthetic apparatus of plants and the protective role of cytokinins: A review. Appl. Biochem. Microbiol. 41: 115-128.

Chidburee, A. 2008. Effects of day length and red light on growth of *Curcuma alismatifolia* Gagnep. rhizome. Ph.D. Thesis, Chiang Mai University, Chiang Mai. 138 p.

Ching, P.C., and S.A. Barbers. 1979. Evaluation of temperature effects on K uptake by corn. Agron. J. 71: 1040-1044.

- Chinnusamy, V., K. Schumaker, and J.K. Zhu. 2004. Molecular genetics perspectives on crosstalk and specificity in abiotic stress signalling in plants. *J. Expt. Bot.* 55: 225-236.
- Chory, J., and J. Li. 1997. Gibberellins, brassinosteroids and light-regulated development. *Plant Cell & Environ.* 20: 801-806.
- Chory, J., M. Chatterjee, R.K. Cook, T. Elich, C. Fankhauser, J. Li, P. Nagpal, M. Neff, A. Pepper, D. Poole, J. Reed, and V. Vitart. 1996. From seed germination to flowering, light controls plant development via the pigment phytochrome. *Proc. Natl. Acad. Sci. USA.* 93: 12066-12071.
- Chou, C.C., W.-S. Chen, K.-L. Huang, H.-C. Yu, and L.-J. Liao. 2000. Changes in cytokinin levels of *Phalaenopsis* leaves at high temperature. *Plant Physiol. Biochem.* 38: 309-314.
- Clouse, S. 2001. Integration of light and brassinosteroid signals in etiolated seedling growth. *Trends Plant Sci.* 6: 443-445.
- Cohen, J.D., and K.D. Nadler. 1976. Calcium requirement for indole acetic acid-induced acidification by *Avena* coleoptiles. *Plant Physiol.* 57: 347-353.
- Coke, L., and W.J. Whittington. 1968. The role of boron in plant growth. IV. Interrelationships between boron and indole-3-acetic acid in the metabolism of bean radicles. *J. Expt. Bot.* 19: 295-308.
- Colon-Carmona, A., D.L. Chen, K.-C. Yeh, and S. Abel. 2000. Aux/IAA Proteins are phosphorylated by phytochrome *in vitro*. *Plant Physiol.* 124: 1728-1738.

- Creelman, R. A., H. S. Mason, R. J. Bensen, J. S. Boyer, and J. E. Mulle. 1990. Water deficit and abscisic acid cause differential inhibition of shoot versus root growth in soybean seedlings. Analysis of growth, sugar accumulation, and gene expression. *Plant Physiol.* 92: 205-214.
- Davidescu, D., and V. Davidescu. 1972. Evaluation of Fertility by Plant and Soil Analysis. Abacus Press, London.
- Davies, W.J., and H.G. Jones. 1992. *Abscisic Acid: Physiology and Biochemistry*. Bios Scientific Publishers, Lancaster.
- Davies, W.J., S. Wilkinson, and B.R. Loveys. 2002. Stomatal control by chemical signalling and the exploitation of this mechanism to increase water use efficiency in agriculture. *New Phytologist*. 153: 449-460.
- Dello Ioio, R., F.S. Linhares, E. Scacchi, E. Casamitjana-Martinez, R. Heidstra, P. Costantino, and S. Sabatini. 2007. Cytokinins determine arabidopsis root-meristem size by controlling cell differentiation. *Curr. Biol.* 17: 678-682.
- Demers, D.-A., M. Dorais, C.H. Wien, and A. Gosselin. 1998. Effects of supplemental light duration on greenhouse tomato (*Lycopersicon esculentum* Mill.) plants and fruit yields. *Sci. Hort.* 74: 295-306.
- Die, J., and W.F. Campbell. 1981. Response of tomato plants to stressful temperatures. *Plant Physiol.* 67: 26-29.

- Doss, R.P., Y. Kimura, and J.K. Christian. 1983. Endogenous levels of abscisic acid and decanoic acid in Dutch iris bulbs and the influence of abscisic acid and decanoic acid on iris meristems cultured *in vitro*. *Plant Physiol.* 72: 713-716.
- Doumash, P., and J.B. Zaerr. 1988. Seasonal changes in levels of cytokinin-like compounds from Douglas-fir xylem exudate. *Tree Physiol.* 4: 1-8.
- Eder, F.A. 1979. Pyridasinones: their influence on the biosynthesis of carotenoids and metabolism of lipids in plants. *Z. Naturforsch.* 34: 1052-1054.
- Engels, C., L. Munkle, and H. Marschner. 1992. Effect of root zone temperature and shoot demand on uptake and xylem transport of micronutrients in maize (*Zea mays* L.). *J. Expt. Bot.* 43: 819-830.
- Ewing, E.E. 1995. The role of hormones in potato (*Solanum tuberosum* L.) tuberization, p. 689-724, *In* P. J. Davies, ed. *Plant Hormones and Their Role in Plant Growth and Development*. Martinus Nijhoff, Dordrecht.
- Flaishman, M., and R. Kamenetsky. 2006. Florogenesis in flower bulbs: classical and molecular approaches, p. 33-43, *In* J. Texeira da Silva, ed. *Floriculture, Ornamental and Plant Biotechnology*, Vol. II. Global Science Books, Kagawa.
- Fong, F., and J.A. Schiff. 1979. Blue-light-induced absorbance changes associated with carotenoids in *Euglena*. *Planta*. 146: 119-127.

- Fouche, J.G., I. Jouve, J.F. Hausman, C. Kevers, and T. Gaspar. 1997. Are temperature-induced early changes in auxin and polyamine levels related to flowering in *Phalaenopsis*? *Plant Physiol.* 115: 232-234.
- Franklin, K. A. 2009. Light and temperature signal crosstalk in plant development. *Curr. Opinion Plant Biol.* 12: 63-68.
- Fukai, S., W. Zhang, and M. Goi. 2000. Effects of photoperiods and temperature on flowering in some *Dendranthema* species native to Japan. *Acta Hort.* 515: 167-172.
- Gagnepain, F. 1908. Zingiberaceae, p. 45-54, In M. H. Lecomte, ed. *Flora Générale de l' Indo-chine*, Vol. 6, Masson, Paris.
- Galiba, G., I. Kerepesi, J.W. Snape, and J. Sutka. 1997. Location of a gene regulating cold-induced carbohydrate production on chromosome 5A of wheat. *TAG Theoretical Appl. Genet.* 95: 265-270.
- García-Martinez, J.L., and J. Gil. 2001. Light regulation of gibberellins biosynthesis and mode of action. *J. Plant Growth Regul.* 20: 354-368.
- Geng, X.M., A. Sato, H. Okubo, and M. Saniewski. 2007. Changes in carbohydrate and ABA content in tulip bulbs during storage. *J. Fac. Agri. Kyushu Univ.* 52: 315-319.
- Georgieva, K., and H.K. Lichtenthaler. 2006. Photosynthetic response of different pea cultivars to low and high temperature treatments. *Photosynthetica*. 44: 569-578.

- Gerald, S. 1997. Zingiberaceae. [Online]. Available:  
<http://www.botany.hawaii.edu/faculty/carr/zingiber.htm> [2010, November 26].
- Goh, C.J. 1979. Hormonal regulation of flowering in a sympodial orchid hybrid *Dendrobium louisae*. *New Phytologist* 82: 375-380.
- Goldschmidt, E.E., and S.C. Huber. 1992. Regulation of photosynthesis by end-product accumulation in leaves of plants storing starch, sucrose and hexose sugars. *Plant Physiol.* 99: 1443-1448.
- Gong, M., Y.-J. Li, and S.-G. Chen. 1998. Abscisic acid-induced thermotolerance in maize seedlings is mediated by calcium and associated with antioxidant systems. *J. Plant. Physiol.* 153: 488-496.
- Gordon, M.E., D.S. Letham, and C.W. Parker. 1974. Regulators of cell division in plant tissues XVII. The metabolism and translocation of zeatin in intact radish seedlings. *Ann. Bot.* 38: 809-825.
- Gruber, J., and F. Bangerth. 1990. Diffusible IAA and dominance phenomena in fruits of apple and tomato. *Physiol. Plant.* 79: 354-358.
- Guo, W.J., and N. Lee. 2006. Effect of leaf and plant age and day/night temperature on net CO<sub>2</sub> uptake in *Phalaenopsis amabilis* var. Formosa. *J. Amer. Soc. Hort. Sci.* 131: 320-326.
- Guy, C.L., J.L.A. Huber, and S.C. Huber. 1992. Sucrose phosphate synthase and sucrose accumulation at low temperature. *Plant Physiol.* 100: 502-508.

Hagiladi, A., N. Umiel, and X.H. Yang. 1997a. *Curcuma alismatifolia*. II. Effects of temperature and day length on the development of flowers and propagules.

Acta Hort. 430: 755-761.

Hagiladi, A., N. Umiel, X.H. Yang, and Z. Gilad. 1997b. *Curcuma alismatifolia*. I.

Plant morphology and the effect of tuberous root number on flowering date and yield of inf. Acta Hort. 430: 747-753.

Hamilton, D.W.A., A. Hills, B. Kohler, and M.R. Blatt. 2000.  $\text{Ca}^{2+}$  channels at the plasma membrane of stomatal guard cells are activated by hyperpolarization and abscisic acid. Proc. Natl. Acad. Sci. USA. 97: 4967-4972.

Hannapel, D.J. 2007. Signaling the induction of tuber formation, p. 237-256, In D. Vreugdenhil, ed. Potato Biology and Biotechnology. Elsevier, Amsterdam.

Hare, P.D., W.A. Cress, and J. Van Staden. 1997. The involvement of cytokinins in plant responses to environmental stress. Plant Growth Regul. 23: 79-103.

Haywood, R.M., A.W.D. Claxton, G.E. Hawkes, D.A. Richardson, D.P. Naughton, G. Coumbarides, E.J. Lynch, and Grootveld.M.C. 1985. Detection of aldehydes and their conjugated hydroperoxydiene precursors in thermally stressed culinary oils and fats: Investigations using high resolution proton NMR Spectroscopy. FEBS Letter. 355: 81-90.

Hewett, E.W., and P.F. Wareing. 1973. Cytokinin in *Populus robusta*: Changes during chilling and bud brust. Physiol. Plant. 28: 393-399.

Hongpakdee, P., T. Ohyama, and S. Ruamrungsri. 2009. Effects of production season on growth, flower qualities and endogenous ABA levels in *Curcuma alismatifolia* Gagnep. RGJ-Ph.D. Congress X Thailand research fund, Pattaya, Thailand 3-5 April 2009.

Hooykass, P.J.J., M.A. Hall, and K.R. Libbenga. 1999. Biochemistry and Molecular Biology of Plant Hormones. Elsevier Science, Amsterdam. 541 p.

Hopkins, W.G. 1999. Introduction to Plant Physiology. 2nd edition. John Wiley & Sons, Chichester. 512 p.

Hunt, P.G., R.B. Campbell, R.E. Sojka, and J.E. Parsons. 1981. Flooding-induced soil and plant ethylene accumulation and water status response of field-grown tobacco. *Plant Soil.* 59: 427-439.

Huttly, A.K., and A.L. Phillips. 1995. Gibberellins-regulated plant genes. *Physiol Plant.* 95: 310-317.

Ile, E.I., P.Q. Craufurd, N.H. Battey, and R. Asiedu. 2006. Phases of dormancy in yam tubers (*Dioscorea rotundata*). *Ann. Bot.* 97: 497-504.

Itai, C., A.E. Richmond, and Y. Vaadia. 1968. The role of root cytokinins during water and salinity stress. *Israel J. Bot.* 17: 187-195.

Jackson, M.B. 1990. Hormones and developmental change in plants subjected to submergence or soil water logging. *Aquatic Bot.* 38: 49-72.

Jackson, S.D. 2009. Plant responses to photoperiod. *New Phytologist.* 181: 517-531.

- Jacobs, W. 1985. The role of auxin in inductive phenomena. Biol. Plant. 27: 303-309.
- Jones, R.L. and J. Carbonell. 1984. Regulation of the synthesis of barley aleurone  $\alpha$ -amylase by gibberellic acid and calcium ions. Plant Physiol. 76: 213-218.
- Katekar, G.F. 1999. Structure-activity relationships of plant growth regulators, p. 89-111, In P. J. J. Hooykaas, M.A., Hall and K.R., Libbenga, eds. Biochemistry and Molecular Biology of Plant Hormones. Elsevier Science, Amsterdam.
- Kendrew, J., and E. Lawrence. 1994. The Encyclopedia of Molecular Biology. Blackwell Science, Oxford.
- Khuankaew, T. 2010. Assimilation and translocation of nitrogen and carbon in *Curcuma alismatifolia* Gagnep. Ph.D. Thesis, Niigata University, Niigata.
- Khuankaew, T., S. Ruamrungsri, S. Ito, T. Sato, N. Ohtake, K. Sueyoshi, and T. Ohyama. 2009. Assimilation and translocation of nitrogen and carbon in *Curcuma alismatifolia* Gagnep. Plant Biol. 12: 414-423.
- Khuankaew, T., T. Ohyama, and S. Rruamrungsri. 2008a. Effects of gibberellin application on growth and development of *Curcuma alismatifolia* Gagnep. Bull.Fac.Agro.Niigata Univ. 60: 135-140.
- Khuankaew, T., T. Ohyama, and S. Rruamrungsri. 2008b. Effects of gibberellin application at different growing stages on growth and development of *Curcuma alismatifolia* Gagnep. Bull. Fac. Agri. Niigata Univ. 60: 141-145.

- Kim, J.-Y., H.-R. Song, B.L. Taylor, and I.A. Carre. 2003. Light-regulated translation mediates gated induction of the *Arabidopsis* clock protein *LHY*. *Europ. Microbiol. J.* 22: 935-944.
- Kim, K.S., E. Davelaar, and G.J. De Clerk. 1994. Abscisic acid controls dormancy development and bulb formation in lily plantlets regenerated *in vitro*. *Physiol. Plant.* 90: 59-64.
- Kinet, J.M., P. Lejeune, and G. Bernier. 1993. Shoot-root interaction during floral transition: A possible role for cytokinins. *Expt. Bot.* 33: 459-469.
- Knaap, E., M. Sauter, R. Wilford, and H. Kende. 1996. Identification of a gibberellin-induced receptor-like kinase in deepwater rice. *Plant Physiol.* 112: 1397-1401.
- Kojima, K., E. Ohake, and Z. Yu. 2002. Distribution and transport of IAA in tomato plants. *Plant Growth Regul.* 37: 249-254.
- Komor, E., I. Liegl, and C. Schobert. 1993. Loading and translocation of various cytokinins in phloem and xylem of the seedlings of *Ricinus communis* L. *Planta*, 191: 252-255.
- Kondrat' Eva, V.V., M.V. Semenova, T.V. Voronkova, and N.N. Danilina. 2009. Changes in the carbohydrate and hormonal status in *Tulipa bifloriformis* bulbs forced into bloom in greenhouse and in the open ground. *Russ. J. Plant Physiol.* 56: 428-435.

- Koshita, Y., T. Takahara, T. Ogata, and A. Goto. 1999. Involvement of endogenous plant hormones (IAA, ABA, GAs) in leaves and flower bud formation of satsuma mandarin (*Citrus unshiu* Marc.). *Sci. Hort.* 79: 185-194.
- Kraepiel, Y., and E. Miginiac. 1997. Photomorphogenesis and phytohormones. *Plant Cell Environ.* 20: 807-812.
- Kraepiel, Y., P. Rousselin, B. Sotta, L. Kerhoas, J. Einhorn, M. Caboche, and E. Miginiac. 1994. Analysis of phytohormone and ABA-deficient mutants suggest that ABA degradation is controlled by light in *Nicotiana plumbaginifolia*. *Plant J.* 6: 665-672.
- Kramer, P.J. 1969. Plant & soil water relationships: a modern synthesis. McGraw-Hill, New York.
- Krauss, A. 1985. Interaction of nitrogen nutrition, phytohormones and tuberization, *In* P. H. Li, ed. Potatoes Physiology. Academic Press, London.
- Kuehny, J.S., M.J. Sarmiento, and P.C. Branch. 2002. Cultural studies in ornamental ginger, p. 477-482, *In* J. Janick and A. Whipkey, eds. Trends in New Crops and New Uses. ASHS Press, Alexandria, VA.
- Kumar, D., B.P. Singh, and P. Kumar. 2004. An overview of the factors affecting sugar content of potatoes. *Ann. Appl. Biol.* 145: 247-256.
- Kumar, D., R. Ezkiel, and S.M.P. Khurana. 2003. Effects of location, season and cultivar on the processing quality of potatoes. *J. Indian Potato Assoc.* 30: 247-251.

Kyozuka, J. 2007. Control of shoot and root meristem function by cytokinin. *Curr. Opinion Plant Biol.* 10: 442-446.

Lambers, H., R.v.d. Boogaard, E.J. Veneklaas, and R. Villa. 1995. Effects of global environmental change on carbon partitioning in vegetative plant in *Triticum aestivum* and closely related Aegilops species. *Global Change Biol.* 1: 397-406.

Langens-Gerrits, M.M., W.B.M. Miller, A.F. Croes, and G.-J. de Klerk. 2003. Effect of low temperature on dormancy breaking and growth after planting in lily bulblets regenerated *in vitro*. *Plant Growth Regul.* 40: 267-275.

Larsen, K., and S.S. Larsen. 2006. Gingers of Thailand Queen Sirikit Botanic Garden, Chiang Mai.

Le Nard, M., and A.A. De Hertogh. 1993. Bulb growth and development and flowering, p. 29-43, *In* A. A. De Hertogh and M. Le Nard, eds. *The Physiology of Flower Bulbs*. Elsevier, Amsterdam.

Le Page-Degivry, M.-T., and G. Garello. 1992. *In situ* abscisic acid synthesis: A requirement for induction of embryo dormancy in *Helianthus annuus*. *Plant Physiol.* 98: 1386-1390.

Lejeune P., J.M. Kinet and G. Bernier 1988. Cytokinin fluxes during floral induction in the long-day plant *Sinapis alba* L.. *Plant Physiol.* 86: 1095-1098.

Lejeune, P., J.-M. Kinet, and G. Bernier. 1988. Cytokinin fluxes during floral induction in the long day plant *Sinapis alba* L. *Plant Physiol.* 86: 1095-1098.

- Letham, D.S. 1974. Regulators of cell division in plant tissues. XX. The cytokinins of coconut milk. *Physio. Plant.* 32: 66-70.
- Letham, D.S. 1978. Cytokinins, p. 205-263, *In* D. S. Letham, P.B. Goodwin and T.J. Higgins, eds. *Phytohormones and Related Compounds, A Comprehensive Treatise*, Vol. 1. Elsevier, North Holland Biomedical Press, Amsterdam.
- Levy, Y.Y., and C. Dean. 1998. The transition to flowering. *Plant Cell.* 10: 1973-1989.
- Li, C., H. Pfeffer, F. Dannel, V. Romheld, and F. Bangerth. 2001. Effects of boron starvation on boron compartmentation, and possibly hormone-mediated elongation growth and apical dominance of pea (*Pisum sativum*) plants. *Physiol. Plant.* 111: 212-219.
- Li, C., O. Junttila, P. Heino, and E.T. Palva. 2003. Different responses of northern and southern ecotypes of *Betula pendula* to exogenous ABA application. *Tree Physiol.* 23: 481-487.
- Li, C., O. Junttila, P. Heino, and E.T. Palva. 2004. Low temperature sensing in silver birch (*Betula pendula* Roth) ecotypes. *Plant Sci.* 167: 165-171.
- Li, C., T. Puukainen, A. Welling, A. Viherä-Aarnio, A. Ernstsen, O.Junttila, P. Heino, and E.T. Palva. 2002. Cold acclimation in silver birch (*Betula pendula*). Development of freezing tolerance in different tissues and climatic ecotypes. *Physiol. Plant.* 116: 478-488.

- Li, T.H., and S.H. Li. 2007. Leaf responses of micropropagated apple plants to water stress: Changes in endogenous hormones and their influence on carbohydrates metabolism. *Agric. Sci. China.* 6: 58-67.
- Li, X., Y. Feng, and L. Boersma. 1994. Partitioning of photosynthates between shoot and root in spring wheat (*Triticum aestivum* L.) as a function of soil water potential and root temperture. *Plant Soil.* 164: 43-50.
- Li, Y., H.C. Pan, and D.Q. Li. 2000. Changes in contents of endogenous phytohormones and photosynthesis in leaves of maize (*Zea mays* L.) in drying soil. *Acta Phytophysiol. Sinica.* 26: 301-305.
- Liao, C.T., and C.H. Lin. 2001. Physiological adaptation of crop plants to flooding stress. *Proc. Natl. Sci. Counc.* 25: 148-157.
- Liu, J.H., and D.M. Reid. 1992. Auxin and ethylene-stimulated adventitious rooting in relation to tissue sensitivity to auxin and ethylene production in sunflower hypocotyls. *J. Expt. Bot.* 43: 1191-1198.
- Liu, K., L. Li, and S. Luan. 2005. An essential function of phosphatidylinositol phosphates in activation of plant shaker-type K<sup>+</sup> channels. *Plant J.* 42: 433-443.
- Ljung, K., R. Bhalerao, and G. Sandberg. 2001. Sites and homeostatic control of auxin biosynthesis in *Arabidopsis* during vegetative growth. *Plant J.* 28: 465-474.
- Logendra, S., and H.W. Janes. 1992. Light duration effects on carbon partitioning and translocation in tomato. *Sci. Hort.* 52: 19-25.

- Logendra, S., J.D. Putman, and H.W. Janes. 1990. The influence of light period on carbon partitioning, translocation and growth in tomato. *Sci. Hort.* 42: 75-83.
- Lorenzen, J.H., and E.E. Ewing. 1992. Starch accumulation in leaves of potato (*Solanum Tuberosum L.*) during the 1st 18 days of photoperiod treatment. *Ann. Bot.* 69: 481 - 485.
- Machackova, I., J. Krekule, J. Eder, F. Seidlova, and M. Strnad. 1993. Cytokinins in photoperiodic induction of flowering in *Chenopodium* species. *Physiol. Plant.* 87: 160-16.
- Machackova, I., T.N. Konstantinova, L.I. Sergeeva, V.N. Lozhnikova, S.A. Golyanovskaya, N.D. Dudko, J. Eder, and N.P. Aksanova. 1998. Photoperiodic control of growth, development and phytohormone balance in *Solanum tuberosum*. *Physiol. Plant.* 102: 272-278.
- Mahotiere, S., R.C. Herner, and F.G. Dennis. 1976. Effect of applied growth substances on growth of shoot apices excised from onions in rest. *J. Amer. Soc. Hort. Sci.* 101: 211-213.
- Marschner, H. 1986. Effect of external and internal factors on root growth and development, p. 429-446, In H. Marschner, ed. *Mineral Nutrition of Higher Plants* Academic Press, London.
- Marschner, H. 1995. *Mineral Nutrition of Higher Plants* (2th Edition). Academic Press, London.

- Matt, P., U. Schurr, A. Krapp, and M. Stitt. 1998. Growth of tobacco in short day conditions leads to high starch, low sugars, altered diurnal changes of the *NIA* transcript and low nitrate reductase activity, and an inhibition of amino acid synthesis. *Planta.* 207: 27-41.
- Mauk, C.S., and A.R. Langille. 1978. Physiology of tuberization in *Solanum tuberosum* L. *Plant Physiol.* 62: 438-442.
- Mengel, K., and E.A. Kirkby. 1987. Nitrogen, p. 347-384, *In* K. Mengel and E. A. Kirkby, eds. *Principles of Plant Nutrition* International Potash Institute, Worblaufen-Bern.
- Mitsui, T., J.T. Christeller, I. Hara-nishimura, and T. Akazawa. 1984. Possible roles of calcium and calmodulin in the biosynthesis and secretion of  $\alpha$ -amylase in rice seed scutella epithelium. *Plant Physiol.* 75: 21-25.
- Mizukoshi, K., T. Nishiwaki, N. Ohtake, R. Minagawa, K.Kobayashi, T. Ikarashi, and T. Ohyama. 1994. Determination of tungstate concentration in plant materials by  $HNO_3$ -  $HClO_4$  digestion and colorimetric method using thiocyanate. *Bull. Fac. Agri. Niigata Univ.* 46: 51-56.
- Mockler, T., H. Yang, X. Yu, D. Parikh, Y.-c. Cheng, S. Dolan, and C. Lin. 2003. Regulation of photoperiodic flowering by *Arabidopsis* photoreceptors. *Proc. Natl. Acad. Sci. USA.* 100: 2140-2145.
- Moore, R., and J.D. Smith. 1985. Graviresponsiveness and abscisic acid content of roots of carotenoid-deficient mutants of *Zea mays*. *Planta.* 164: 126-128.

Morgan, P.W., D.M. Taylor, and H.E. Joham. 1976. Manipulation of IAA-oxidase activity and auxin-deficiency symptoms in intact cotton plants with manganese nutrition. *Physiol. Plant.* 37: 149-156.

Mozafar, A., P. Schreiber, and J. Oertli. 1993. Photoperiod and root-zone temperature: Interacting effects on growth and mineral nutrients of maize. *Plant Soil.* 153: 71-78.

Nagel, O.W., H. Konings, H. Lambers. 1994. Growth rate, plant development and water relations of the ABA-deficient tomato mutant *sitiens*. *Physiol. Plant.* 92, 102-108.

Nakatani, M., and M. Komeichi. 1991. Changes in the endogenous level of zeatin riboside, abscisic acid and indole acetic acid during formation and thickening of tuberous roots in sweet potatoes. *J. Crop Sci.* 60: 91-100.

Naor, V., and J. Kigel. 2002. Temperature affects plant development, Flowering and tuber dormancy in calla lily (*Zantedeschia*). *J. Hort. Sci. & Biotechnol.* 77: 170-176.

Naor, V., J. Kigel, Y. Ben-Tal, and M. Ziv. 2008. Variation in endogenous

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- Naphrom, D. 2004. Effects of cool temperature and GAs-biosynthesis inhibitors on flower induction and related hormonal changes in mango (*Mangifera indica* L.) trees. Ph.D. Thesis, University of Hohenheim, Stuttgart. 98 p.
- Nayyar, H., T. Bains, and S. Kumar. 2005. Low temperature induced floral abortion in chickpea: relationship to abscisic acid and cryoprotectants in reproductive organs. Environ. Expt. Bot. 53: 39-47.
- Nemhauser, J., and J. Chory. 2002. Photomorphogenesis The Arabidopsis Book. American Society of Plant Biologists.
- Nishijima, T., H. Sugii, N. Fukino, and T. Mochizuki. 2005. Aerial tubers induced in turnip (*Brassica rapa* L. var. *rapa* (L.) Hartm.) by gibberellin treatment. Sci. Hort. 105: 423-433.
- Noquet, C., F. Meuriot, S. Caillot, J.-C. Avice, A. Ourry, S.M. Cunningham, and J. J. Volenec. 2003. Short-day photoperiod induces changes in N uptake, N partitioning and accumulation of vegetative storage proteins in two *Medicago sativa* cultivars. Functional Plant Biol. 30: 853-863.
- Oelmuller R. 1989. Photooxidative destruction of chloroplasts and its effect on nuclear gene expression and extraplastidic enzyme levels. Phytochem. Photobiol. 49: 229-239.
- Oelmuller, R. 1989. Photooxidative destruction of chloroplasts and its effect on nuclear gene expression and extraplastidic enzyme levels. Phytochem. Photobiol. 49: 229-239.

- Ofir, M., and J. Kigel. 1998. Abscisic acid involvement in the induction of summer-dormancy in *Poa bulbosa*, a grass geophyte. *Plant Physiol.* 102: 163-170.
- Oh, E., S. Yamaguchi, Y. Kamiya, G. Bae, W.I. Chung, and G. Choi. 2006. Light activates the degradation of *PIL5* protein to promote seed degradation through gibberellin in *Arabidopsis*. *Plant J.* 47:1 24-139.
- Oh, W., Y.H. Rhie, J.H. Park, E.S. Runkle, and K.S. Kim. 2008. Flowering of cyclamen is accelerated by an increase in temperature, photoperiod and daily light integral. *J. Hort. Sci. & Biotechnol.* 83: 559-562.
- Ohtake, N., S. Ruamrungsri, S. Ito, K. Sueyoshi, T. Ohyama, and P. Apavatjrut. 2006. Effect of nitrogen supply on nitrogen and carbohydrate constituent accumulation in rhizomes and storage roots of *Curcuma alismatifolia* Gagnep. *Soil Sci. Plant Nutr.* 52: 711-716.
- Ohyama, T., M. Ito, K. Kobayashi, S. Araki, S. Yasuyoshi, O. Sasaki, T. Yamazaki, K. Sayoma, R. Tamemura, Y. Izuno, and T. Ikarashi. 1991. Analytical procedures of N, P, K content in plant and manure materials using  $H_2SO_4-H_2O_2$  Kjeldahl digestion Method. *Bull. Fac. Agri. Niigata Univ.* 43: 111-120.
- Ohyama, T., T. Ikarashi, and A. Baba. 1986. Analysis of the reserve carbohydrate in bulb scales of autumn planting bulb plants. *J. Jap. Soil Sci. Plant Nutr.* 57: 119-225.

- Okubo, H. 2000. Growth cycle and dormancy in plant, p. 1-22, In J. D. Viémont and J. Crabbé, eds. *Dormancy in Plants from Whole Plant Behaviors to Cellular Control*. University Press, Cambridge.
- Okubo, H., and S. Uemoto. 1981. Changes in the endogenous growth regulators in bulbous iris in bulb-forming and non-bulb forming aspect. *Plant Cell Physiol.* 22: 279-301.
- O'Neill, D.P., J.J. Ross, and J.B. Reid. 2000. Changes in gibberellin a1 levels and response during de-etiolation of pea seedlings. *Plant Physiol.* 124: 805-812.
- Oquist, G., V.M. Hurry, and N.P.A. Huner. 1993. Low-temperature effects on photosynthesis and correlation with freezing tolerance in spring and winter cultivars of wheat and rye. *Plant Physiol.* 101: 245-250.
- Paisooksantivatana, Y., S. Kako, and H. Seko. 2001. Genetic diversity of *Curcuma alismatifolia* Gagnep.(Zingiberaceae) in Thailand as revealed by allozyme polymorphism. *Genet. Resources & Crop Evol.* 48: 459-465.
- Panavas, T. and B. Rubinstein. 1998. Oxidative events during programmed cell death of daylily (*Hemerocallis hybrid*) petals. *Plant Sci.* 133: 125-138.
- Phongpreecha, K. 1997. Unpublished data. Chiangrai Horticultural Research Center, Chiangrai.
- Phubuopuen, J. 1992. The growth and development of *Curcuma*, M.S. Thesis, Chiang Mai University, Chiang Mai. 82 p.

- Poder, D., S. Suleiman and M. Penot. 1988. Phosphate transport in potato cuttings: Effect of gibberellic acid and abscisic acid. *Physiol. Plant.* 72: 385-388.
- Pons, T.L., W. Jordi, and D. Kuiper. 2001. Acclimation of plants to light gradients in leaf canopies: evidence for a possible role for cytokinins transported in the transpiration stream. *J. Expt. Bot.* 52: 1563-1574.
- Popova, L. 1995. Effect of fluridone on plant development and stress-induced ABA accumulation in *Vicia faba* L. plants. *Bulg. J. Plant Physiol.* 21: 42-50.
- Popova, L.P., and K.A. Riddle. 1996. Development and accumulation of ABA in fluridone-treated and drought-stressed *Vicia faba* plants under different light conditions. *Physiol. Planta.* 98: 791-797.
- Potchanasin, P., K. Srungarm, P. Sruamsiri, and K.F. Bangerth. 2009. Floral induction (FI) in longan (*Dimocarpus longan*, Lour.) trees: Part I. Low temperature and potassium chloride effects on FI and hormonal changes exerted in terminal buds and sub-apical tissue. *Sci. Hort.* 122: 288-294.
- Proebsting, W.M., and M.H. Chaplin. 1981. The effect of photoperiod-induced flowering on the nutrient content of pea shoots. *J. Plant Nutr.* 4: 419-429.
- Purseglove, J.W. 1974. Tropical Crops: Dicotyledons. Longman, London.
- Reid, D.M., and A. Crozier. 1971. Effects of water logging on the gibberellin content and growth of tomato plants. *J. Expt. Bot.* 22: 39-48.

- Reid, J.B., N.A. Botwright, J.J. Smith, D.P. O'Neill, and L.H.J. Kerckhoffs. 2002. Control of gibberellin levels and gene expression during de-etiolation in pea. *Plant Physiol.* 128: 734-741.
- Ribeiro, R.V., E.C. Machado, M.G. Santos, and R.F. Oliveira. 2009. Seasonal and diurnal changes in photosynthetic limitation of young sweet orange trees. *Environ. Expt. Bot.* 66: 203-211.
- Rietveld, P.L., C. Wilkinson, H.M. Franssen, P.A. Balk, L.H.W. Van Der Plas, P.J. Weisbeek, and A.D. De Boer. 2000. Low temperature sensing in tulip (*Tulipa gesneriana* L.) is mediated through an increased response to auxin. *J. Expt. Bot.* 51: 587-594.
- Roberts, R.H. 1943. The role of night temperature in plant performance. *Sci. Sep.* 17: 260-265.
- Rodriguez-Falcon, M., J. Bou, and S. Prat. 2006. Seasonal control of tuberization in potato: Conserved elements with the flowering response. *Annu. Rev. Plant Biol.* 57: 151-180.
- Roitsch, T., and R. Ehneß. 2000. Regulation of source/sink relations by cytokinins. *Plant Growth Regul.* 32: 359-367.
- Ross, C.W. 1992. Hormones and growth regulators: auxins and gibberellins, p. 357-382, In F. B. Salisbury and C. W. Ross, eds. *Plant Physiology*, 4 ed. Wadsworth Publishing Company, California.

- Ruamrungsri, S., C. Suwanthada, N. Ohtake, K. Sueyoshi, T. Ohyama, and P. Apavatjrut. 2005. Effect of Nitrogen and Potassium on Growth and Development of *Curcuma alismatifolia* Gagnep. Acta Hort. 673: 443-448.
- Ruamrungsri, S., J. Uthaibutra, O. Wichailux, and P. Apavatjrut. 2007. Planting date and night break treatment affected off-season flowering in *Curcuma alismatifolia* Gagnep. Gardens' Bul. Singapore. 59: 173-182.
- Ruamrungsri, S., N. Ohtake, S. Kuni, C. Suwanthada, P. Apavajnut, and T. Ohyama. 2001. Changes in nitrogenous compounds, carbohydrates and abscisic acid in *Curcuma alismatifolia* Gagnep during dormancy. J. Hort. Sci. Biotechnol. 76: 48-51.
- Rubio, V., R. Bustos, M. Irigoyen, X. Cardona-López, M. Rojas-Triana, and J. Paz-Ares. 2009. Plant hormones and nutrient signaling. Plant Mol. Biol. 69: 361-373.
- Saab, I.N., R.E. Sharp, J. Pritchard, and G.S. Voetberg. 1990. Increased endogenous abscisic acid maintains primary root growth and inhibits shoot growth of maize seedlings at low water potentials. Plant Physiol. 93, 1329-1336.
- Sakakibara, H., K. Takei, and N. Hirose. 2006. Interactions between nitrogen and cytokinin in the regulation of metabolism and development. Trends Plant Sci. 11: 440-448.
- Salisbury, F.B. 1981. Responses to photoperiods. Encyclopedia of Plant Physiology, New Series, 12A.

- Salisbury, F.B., and C.W. Ross. 1992. *Plant Physiology*. 4 ed. Belmont, Wadsworth.
- Samuelson, M., and C.M. Larsson. 1993. Nitrate regulation of zeatin riboside levels in barley roots: effects of inhibitors of N assimilation and comparison with ammonium. *Plant Sci.* 93: 77-84.
- Saniewski, M., L. Kawa, and E. Wegrzynowicz. 1990. The effect of abscisic acid on pistil and stem growth in tulips. *Prace Inst. Sadownictwa i Kwiaciarsztwa Seria B-Rosliny Ozdobne*. 15: 95-104.
- Sasaki, H., K. Ichimura, and M. Oda. 1996. Changes in sugar content during cold acclimation and deacclimation of cabbage seedlings. *Ann. Bot.* 78: 365-369.
- Saugy, M., and L. River. 1988. GC-MS Quantification of free and ester indol-3yl-acetic acid in relation of root growth and gravitropism, p. 441-449, *In* R. P. Pharis and S. B. Rood, eds. *Plant Growth Substances*. Springer-Verlag, Berlin.
- Schiefelbein, J.W. 2000. Constructing a plant cell. The genetic control of root hair development. *Plant Physiol.* 124: 1525-1531.
- Seo, M., A. Hanada, A. Kuwahara, A. Endo, M. Okamoto, Y. Yamauchi, H. North, A. Marion-Poll, T.P. Sun, T. Koshiba, Y. Kamiya, S. Yamaguchi, and E. Nambara. 2006. Regulation of hormone metabolism in *Arabidopsis* seeds: phytochrome regulation of abscisic acid metabolism. *Plant J.* 48: 354-366.

Serraj, R., L.H. Allen, and T.R. Sinclair. 1999. Soybean leaf growth and gas exchange response to drought under carbondioxide enrichment. *Global Change Biol.* 5: 283-291.

Shaked, R., K. Rosenfeld, and E. Pressman. 2004. The effect of low night temperatures on carbohydrates metabolism in developing pollen grains of pepper in relation to their number and functioning. *Sci. Hort.* 102: 29-36.

Shashidhar, V.R., T.G. Prasad, and L. Sudharshan. 1996. Hormone signals from roots to shoots of sunflower (*Helianthus annuus* L.). Moderate soil drying increases delivery of abscisic acid and depresses delivery of cytokinins in xylem sap. *Ann. Bot.* 78: 151-155.

Shin, K.S., D. Chakrabarty, and K.Y. Paek. 2002. Sprouting rate, change of carbohydrate contents and related enzymes during cold treatment of lily bulblets regenerated *in vitro*. *Sci. Hort.* 96: 195-204.

Sinha, S., B.R. Sharma, and C.A. Scott. 2005. Understanding and managing the water – energy nexus: moving beyond the energy debate, p. 242-256, In B. R. Sharma, K.G. Villholth, K.D. Sharma, eds. *Groundwater Research and Management: Integrating Science into Management Decisions*. Sri Lanka: International Water Management Institute, Colombo.

Sirirungsa, P., C. Maknoi, and K. Larsen. 2001. The genus *Curcuma* L. (*Zingiberaceae*): Distribution and classification with reference to species diversity in Thailand, p. 55 4th International symposium on *Zingiberaceae*. Singapore Botanic Gardens, Singapore.

- Sivaci, A., and I. Yalcin. 2008. The seasonal changes in endogenous levels of indole-3-acetic acid, gibberellic acid and abscisic acid in stem of some apple varieties (*Malus sylvestris*, Miller). Asian J. Plant Sci. 7: 319-322.
- Sjut, V., and F. Bangerth. 1984. Induced the partinocarpy-a way of manipulating levels of endogenous hormones in tomato fruit (*Lycopersicon esculentum* Mill.) II. diffusible hormones. Plant Growth Regul. 2: 49-56.
- Slater, J.W. 1968. The effect of nigh temperature on tuber initiation of potatoes. Europ. Potato. J. 11: 14-22.
- Sorce, C., L. Lombardi, L. Giorgetti, B. Parisi, P. Ranalli, and R. Lorenzi. 2009. Indole acetic acid concentration and metabolism changes during bud development in tubers of two potato (*Solanum tuberosum*) cultivars. J. Plant Physiol. 166: 1023-1033.
- Sorce, C., R. Lorenzi, N. Ceccarelli, and P. Ranalli. 2000. Changes in free and conjugated IAA during dormancy and sprouting of potato tubers. Functional Plant Biol. 27: 371-377.
- Souza, A., C.Z. Sandrin, M.F.A. Calio, S.T. Meirelles, V.R. Pivello, and R.C.L. Figueiredo-Ribeiro. 2010. Seasonal variation of soluble carbohydrates and starch in *Echinolaena inflexa*, a native grass species from the Brazilian savanna, and in the invasive grass *Melinis minutiflora*. Brazilian J. Biol. 70: 395-404.

Srivastava, L.M. 2002. Plant Growth and Development: Hormones and Environment Academic Press, San Diego.

Srivastava, N., D. Prakash, and H.M. Behl. 1997. Biochemical contents, their variation and changes in free amino acids during seed germination in *Terminalia arjuna*. *Intl. J. Food Sci. Nutr.* 48: 215-219.

Steed, C.L., L.K. Taylor, and M.A. Harrison. 2004. Red light regulation of ethylene biosynthesis and gravitropism in etiolated pea stems. *Plant Growth Regul.* 43: 117-125.

Steer, B.T. 1980. The role of night temperature in the bulbing of onion (*Allium cepa* L.). *Australian J. Agr. Res.* 31: 519-523.

Stephen, G. T., R. Ivo, and M.S. Camille. 2005. Gibberellins metabolism and signaling. *Vita. Horm.* 72: 289-388.

Stern, R.A., A. Naor, N. Bar, S. Gazit, and B.-A. Bravdo. 2003. Xylem-sap zeatin-riboside and dihydrozeatin-riboside levels in relation to plant and soil water status and flowering in Mauritius lychee. *Sci. Hort.* 98: 285-291.

Stewart, C.R., and G. Voetberg. 1987. Abscisic acid accumulation is not required for proline accumulation in wilted leaves. *Plant Physiol.* 83: 747-749.

Suttle, J.C. 2004. Involvement of endogenous gibberellins in potato tuber dormancy and early sprout growth: a critical assessment. *J. Plant Physiol.* 161: 157-164.

- Suttle, J.C., and J.F. Hultstrand. 1994. Role of endogenous abscisic acid in potato microtuber dormancy. *Plant Physiol.* 105: 891-896.
- Symons, G., and J. Reid. 2003. Interactions between light and plant hormones during de-etiolation. *J. Plant Growth Regul.* 22: 3-14.
- Taiz, L., and E. Zeiger. 1998. Ancymidol and gibberellins on temperature induced elongation in Fuchsia, p. 792, *In* L. Taiz and E. Zeiger, eds. *Plant Physiology*. Sinauer Associates, Massachusetts.
- Takei, K., H. Sakakibara, M. Taniguchi, and T. Sugiyama. 2001. Nitrogen-dependent accumulation of cytokinins in root and the translocation to leaf: Implication of cytokinin species that induces gene expression of maize response regulator. *Plant Cell Physiol.* 42: 85-93.
- Takezaki, A., M. Fujino, M. Nonaka, H. Kawashima, and A. Mori. 2000. The effects of temperature treatments on stem length of *Eustoma grandiflorum*. *Acta Hort.* 515: 151-157.
- Talon, M., J.A.D. Zeevaart, and G.A. Gage. 1991. Identifications of gibberellins in spinach and effects of light and darkness on their levels. *Plant Physiol.* 97: 1521-1526.
- Thingnaes, E., S. Torre, A. Ernstsen, and R. Moe. 2003. Day and night temperature responses in Arabidopsis: effects on gibberellin and auxin content, cell size, morphology and flowering time. *Ann. Bot.* 92: 601-612.

- Thohirah, L.A., M.F. Ramlan, and N. Kamalakshi. 2005. The effects of paclobutrazol and flurprimidol on the growth and flowering of *Curcuma roscoeana* and *Curcuma alismatifolia*. *Malays. Appl. Biol.* 34: 1-5.
- Thomas, B., and D. Vince-Prue. 1997. Daylength perception in long-day plants, p. 118-142. In *Photoperiodism in Plants* (Second Edition). Academic Press, London.
- Tian, Q., and J.W. Reed. 2001. Molecular links between light and auxin signaling pathways. *J. Plant Growth Regul.* 20: 274-280.
- Tian, Q., N.J. Uhlir, and J.W. Reed. 2002. *Arabidopsis SHY2/IAA3* inhibits auxin-regulated gene expression. *Plant Cell.* 14: 301-319.
- Tromp, J., and J.C. Ovaa. 1990. Seasonal change in cytokinin composition of xylem sap of apple. *J. Plant Physiol.* 136: 606-610.
- Vaisberg, A.G., and J.A. Schiff. 1976. Events surrounding the early development of *Euglena* chloroplasts. 7. Inhibition of carotenoid biosynthesis by the herbicide SAN 9789 (4-chloro-5-methylamino-2-(2,a,2-trifluoro-m-tolyl)-3-(2H)-pyridazone) and its developmental consequences. *Plant Physiol.* 57: 260-269.
- Vaz, A.P.A., L.R. de-Cássia, F. Ribeiro, and G.B. Kerbauy. 2004. Photoperiod and temperature effects on in vitro growth and flowering of *P. pusilla*, an epiphytic orchid. *Plant Physiol. Biochem.* 42: 411-415.

Vencill, W.K. 2002. Herbicide Handbook. 8 ed. Weed Science Society of America, Lawrence.

Verslues, P.E., and J.K. Zhu. 2005. Before and beyond ABA: upstream sensing and internal signals that determine ABA accumulation and response under abiotic stress. *Biochem. Soc. Trans.* 33: 375-379.

Vieten, A., M. Sauer, P.B. Brewer, and J. Friml. 2007. Molecular and cellular aspects of auxin-transport-mediated development. *Trends in Plant Science* 12: 160-168.

Vreugdenhil, D., and L. Sergeeva. 1999. Gibberellins and tuberization in potato. *Potato Res.* 42: 471-478.

Wagner, B.M., and E. Beck. 1993. Cytokinins in the perennial herb *Urtica dioica* L. as influenced by its nitrogen status. *Planta*, 190: 511-518.

Walker, M.A., and E.B. Dumbroff. 1981. Effect of salt stress on abscisic acid and cytokinin levels in tomato. *Z. Pflanzen Physiol.* 101: 461-470.

Walker-Simmons, M.K., P.A. Roes, L.R. Hogge, and S.R. Abrams. 2000. Abscisic acid, ABA immunoassay and gas chromatography/ mass spectrometry verification, p. 33-47, In G. A. Tucker and J. A. Roberts, eds. *Plant Hormone Protocols, Methods in Molecular Biology*. Humana Press, New Jersey.

Walton, E.E., G.E. McLaren, and H.L. Boldinh. 2007. Seasonal patterns of starch and sugar accumulation in herbaceous peony (*Paeonia lactiflora* Pall). *J. Hort. Sci. Biotechnol.* 82: 365-370.

- Wang, G., V. Romheld, C. Li, and F. Bangerth. 2006. Involvement of auxin and CKs in boron deficiency induced changes in apical dominance of pea plants (*Pisum sativum* L.). *J. Plant Physiol.* 163: 591-600.
- Wang, T.W., and R.N. Arteca. 1992. Effects of low O<sub>2</sub> root stress on ethylene biosynthesis in tomato plants (*Lycopersicon esculentum* Mill cv. Heinz 1350). *Plant Physiol.* 98: 97-100.
- Wang, X.T., and F.E. Below. 1996. Cytokinins in enhanced growth and tillering of wheat induced by mixed nitrogen source. *Crop Sci.* 36: 121-126.
- Wang, Z., Q. Xu, and B. Huang. 2004. Endogenous cytokinin levels and growth responses to extended photoperiods for creeping bentgrass under heat stress. *Crop Sci.* 44: 209-213.
- Wannakrairoj, S. 1996. *Patumma and Krajeaw (Curcuma)*. Amarin Printing and Publishing, Bangkok.
- Weaver, R.J., and J.O. Johnson. 1985. Relation of hormones to nutrient mobilization and the internal environment of the plant: The supply of mineral nutrients and photosynthates. *Encyclo. Plant Physiol.* 2: 3-36.
- Welling, A., P. Kaikuranta, and P. Rinne. 1997. Photoperiodic induction of dormancy and freezing tolerance in *Betula pubescens*. Involvement of ABA and dehydrins. *Physiol. Plant.* 100: 119-125.
- Went, F. W. 1953. Gene action in relation to growth and development: I Phenotypic variability. *Proc. Natl. Acad. Sci. USA.* 39: 839-848.

Werner, T., V. Motyka, V. Laucou, R. Smets, H. Van Onckle, and T. Schmülling.

2003. Cytokinin deficeint transgenic *Arabidopsis* plants show multiple developmental alterations indicating opposite functions of cytokinin in regulation of shoot and root meristem activity. *Plant Cell.* 15: 2532-2550.

Wichailak, O. 2005. Patumma. Department of Agricultural Extension, Bangkok.

Wittenmayer, L., and W. Merbach. 2005. Plant responses to drought and phosphorus deficiency: contribution of phytohormones in root-related processes. *J. Plant Nutr. Soil Sci.* 168: 531-540.

Xiong, L., K.S. Schumaker, and J.-K. Zhu. 2002. Cell signaling during cold, drought, and salt stress. *Plant Cell.* 14: 165-183.

Xu, R.Y., Y. Niimi, and D.S. Han. 2006. Changes in endogenous abscisic acid and soluble sugars levels during dormancy-release in bulbs of *Lilium rubellum*. *Sci. Hort.* 111: 68-72.

Xu, X., A. van Lammeren, E. Verner, and D. Vreugdenhil. 1998. The role of gibberellin, abscisic acid and sucrose in the regulation of potato tuber formation *in vitro*. *Plant Physiol.* 117: 575-584.

Xu, Z., Q.M. Wang, Y.P. Guo, D.P. Guo, G.A. Shah, H.L. Liu, and A. Mao. 2008. Stem-swelling and photosynthate partitioning in stem mustard are regulated by photoperiod and plant hormones. *Environ. Expt. Bot.* 62: 160-167.

- Yamazaki, H., T. Nishijima, M. Koshioka, and H. Miura. 2002. Gibberellins do not act against abscisic acid in the regulation of bulb dormancy of *Allium wakegi* Araki. *Plant Growth Regul.* 36: 223-229-229.
- Yamazaki, H., T. Nishijima, Y. Yamato, M. Koshioka, and H. Miura. 1999. Involvement of abscisic acid in relation to bulb dormancy of *Allium wakegi* 'Araki' I. Endogenous levels of ABA in relation to bulb dormancy and effects of exogenous ABA and fluridone. *Plant Growth Regul.* 29: 189-194.
- Yasin, H.J. and G. Buller. 2007. Dormancy and sprouting in onion (*Allium cepa* L.) bulbs. I. Changes in carbohydrate metabolism. *J. Hort. Sci. & Biotechnol* 82: 89-96.
- Yoo, Y.K. and K.S. Kim. 1996. Seasonal variation in rooting ability, plant hormones, carbohydrate, nitrogen, starch and soluble sugar contents in cutting of white forsythia (*Abeliophyllum distichum* Nakai). *J. Kor. Soc. Hort. Sci.* 22: 554-560.
- Yu, H., T. Dhavale, and S. Yang. 2006. Molecular mechanisms of hormone functions in flowering, p. 25-32, *In* J. A. Teixeira da Silva, ed. *Floriculture, Ornamental and Plant Biotechnology: Advances and Topical Issues*, Vol. 1, Global Science Books, London.
- Zeevaart, J.A.D., and R.A. Creelman. 1988. Metabolism and physiology of abscisic acid. *Annu. Rev. Plant Physiol. Plant Mol. Biol.* 39: 439-473.

Zeevaart, J.A.D. 1999. Abscisic acid metabolism and its regulation, p. 189-207, *In*  
P.J.J. Hooykaas, M.A. Hall, and K.R. Libbenga, eds. Biochemistry and  
Molecular Biology of Plant Hormones. Elsevier, Amsterdam.

Zhang, J., and X. Zhang. 1994. Can early wilting of old leaves account for much of  
the ABA accumulation in flooded pea plants? *J. Expt. Bot.* 45: 1335-1342.

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