

DAFTAR PUSTAKA

- Agarwal, P.K., Agarwal, P., Reddy, MK., Sopory, SK.. 2006. Role of DREB Transcription Factors in Abiotic and Biotic Stress Tolerance in Plants. *Plant Cell Rep.* 25: 1263-1274.
- Ahuja, I., de Vos, R.C.H., Bones, A.M., Hall, R.D. 2010. Plant Molecular Stress Responses Face Climate Change. *Trends in Plant Science* 15 : 664-674.
- Alam, M.M., Hasanuzzaman, M., Nahar, K. 2009. Growth Pattern of 3 High Yielding Rice Varieties under Different Phosphorus Level. *Advances in Biological Research* 3 : 110-116.
- Arbulu, M., Sampedro, M.C., Sanchez-Ortega, A., Gómez-Caballero, A., Unceta, N., Goicolea, M.A., Barrio, R.J. 2013. Characterisation of the Flavour Profile from Graciano *Vitis Vinifera* Wine Variety by A Novel Dual Stir Absorptive Extraction Methodology Coupled to Thermal Desorption and Gas Chromatography–Mass Spectrometry. *Analytica Chimica Acta* 777 : 41– 48.
- Atkinson, N.J., Urwin, P.E. 2012. The Interaction of Plant Biotic and Abiotic Stresses: From Genes to the Field. *Journal of Experimental Botany* 63: 3523–3543.
- Badan Pusat Statistik. 2013. www.bps.go.id. Diakses tanggal 5 Mei 2014.
- Bedair, M., Sumner, L. W. 2008. Current and Emerging Mass-Spectrometry Technologies for Metabolomics. *Trends in Analytical Chemistry* 27 : 238–250.
- Bidinger, F. R., Mahalakshmi, V., Talukdar, B.S., Alagarwamy, G. 1982. Improvement of Drought Resistance in Pearl Millet. *In* International Rice Research Institute. Drought Resistance in Crops with Emphasis on Rice, pp 357-375. Los Baños.
- Bino, R., Hall, R., Fiehn, O., Kopka, J., Saito, K., Draper, J., Nikolau, B., Mendes, P., Roessner-Tunali, U., Beale, M., Trethewey, R., Lange, B., Wurtele, E., Sumner, L., 2004. Potential of Metabolomics as a Functional Genomics Tool. *Trends Plant Sci.* 9:418–425.
- Bray, E.A. 2007. Molecular and Physiological Responses to Water-Deficit Stress. *In* Advances in Molecular Breeding Toward Drought and Salt Tolerant

- Crops, Jenks, M.A., Hasegawa, P.M., & Jain, S.M (Eds.), pg 121-140. Springer. New York.
- Catinot, J., Buchala, A., Abou-Mansour, E., Me'traux, J-P..2008. Salicylic Acid Production in Response to Biotic and Abiotic Stress Depends on Isochorismate in *Nicotiana benthamiana*. *FEBS Letters* 582 : 473–478.
- Chaves, M.M., Flexa, J., Pinheiro, C. 2009. Photosynthesis Under Drought and Salt Stress: Regulation Mechanisms from Whole Plant to Cell. *Annals of Botany* 103 : 551–560.
- Darwish, E., Testerink, C., Khalil, M., El-Shihy, O., Munnik, T. 2009. Phospholipid Signaling Responses in Salt-Stressed Rice Leaves. *Plant Cell Physiol.* 50 : 986–997.
- De Leonardis, A, M., Petrarulo, M., De Vita, P., Mastrangelo, A.M. 2012. Genetic and Molecular Aspects of Plant Response to Drought in Annual Crop Species. *In Advances in Selected Plant Physiology Aspects*, Montanaro, G (Ed.), pp 45-75. InTech. Rijeka.
- De Oliveira, A.B., Alencar, N.L.M., Gomes-Filho, E. 2013. Comparison Between the Water and Salt Stress Effects on Plant Growth and Development. *In Responses of Organism to Water Stress*, Akinci, S (Ed.), pp 67-94. Intech. Rijeka.
- Degenkolbe, T., Do, P.T., Kopka, J., Zuther, E., Hinch, D.K., Köhl, K.I. 2013. Identification of Drought Tolerance Markers in a Diverse Population of Rice Cultivars by Expression and Metabolite Profiling. *Plos One* 8 : 1-14.
- Dubouzet, J.G, Sakuma, Y., Ito, Y., Kasuga, M., Dubouzet, E.G, Miura, S., Seki, M., Shinozaki, K., Yamaguchi-Shinozaki, K. 2003. *OsDREB* Genes in Rice, *Oryza sativa L.*, Encode Transcription Activators that Function in Drought-, High-Salt- and Cold-Responsive Gene Expression. *Plant J.* 33: 751-763.
- Dunn, W.B., Ellis, D.I. 2005. Metabolomics: Current Analytical Platforms and Methodologies. *Trends in Analytical Chemistry* 24: 285-294.
- Effendi, Y. 2008. Kajian Resistensi Beberapa Varietas Padi Gogo (*Oryza sativa L.*) terhadap Cekaman Kekeringan. Tesis : Universitas Sebelas Maret. Surakarta.
- Farooq, M., Wahid, A., Koobayashi, N., Fujita, D., Basra, S.M.A. 2009. Plant Drought Stress: Effects, Mechanisms and Management. *Agron. Sustain. Dev* 29 : 185–212.

- Fiehn, O. 2007. Validated High Quality Automated Metabolome Analysis of *Arabidopsis thaliana* Leaf Disks. In Concepts in Plant Metabolomics, Nikolau, B.J. & Wurtele, E.S. (Eds.), pp 1-18. Springer. Netherlands.
- Fisher, R.A, Maurer, R. 1978. Drought Resistance in Spring Wheat Cultivars.I. Grain Yield Response. *Aust. J. Agric. Res.* 29 : 897-907.
- Fujita, Y., Fujita, M., Yamaguchi-Shinozaki, K., Shinozaki, K. 2009. Transcription Factors Involved in the Crosstalk between Abiotic and Biotic Stress-Signaling Networks. In Signal Crosstalk in Plant Stress Responses, Yoshioka, K. & Shinozaki, K (Eds.), pp 43-58. Wiley-Blackwell A John Wiley & Sons Ltd Publication. New Jersey.
- Garrity, D.P., O'Toole, J.C. 1994. Screening Rice for Drought Resistance at Reproductive Phase. *Field Crops Research* 39 : 99-110.
- Hu, H., M. Dai, J. Yao, B. Xiao, X. Li, Q. Zhang, L. Xiong. 2006. Overexpressing a NAM, ATAF, and CUC (NAC) Transcription Factor Enhances Drought Resistance and Salt Tolerance in Rice. *PNAS* 103 : 12987-12992.
- Huang, B., Jin, L.G., Liu, J.Y. 2008. Identification and Characterization of the Novel Gene *GhDBP2* Encoding a DRE-binding Protein from Cotton (*Gossypium hirsutum*). *J. Plant Physiol.* 165: 214-223.
- Hussain, S., Fujii, T., McGoey, S., Yamada, M., Ramzan, M, Akmal, M. 2014. Evaluation of Different Rice Varieties for Growth and Yield Characteristics. *The Journal of Animal and Plant Sciences* 24 : 1504-1510.
- Islam, M.SH., Bhuiya, M.SU., Gomosta, A.R., Sarkar, A.R., Hussain, M.M. 2009. Evaluation of Growth and Yield of Selected Hybrid and Inbreed Rice Varieties Grown in Net-House During Transplanted Aman Season. *Bangladesh J.Agril. Res.* 34: 67-73.
- Jain, M., Nijhawan, A., Tyagi, A.K., Khurana, J.P. 2006. Validation of Housekeeping Genes as Internal Control for Studying Gene Expression in Rice by Quantitative Real-Time PCR. *Biochemical and Biophysical Research Communications* 345 : 646-651.
- Ji, K., Wang, Y., Sun, W., Lou, Q., Mei, H., Shen, S., Chen, H. 2012. Drought-Responsive Mechanisms in Rice Genotypes with Contrasting Drought Tolerance During Reproductive Stage. *Journal of Plant Physiology* 169 : 336– 344.
- Jimenez, S., Ollat, N., Deborde, C., Maucourt, M., Rellán-Álvarez, R., Moreno, M.A., Gogorcena, Y. 2011. Metabolic Response in Roots of *Prunus*

Rootstocks Submitted to Iron Chlorosis. *Journal of Plant Physiology* 168 : 415–423.

Kanani, H., Dutta, B., Quackenbush, J., Klapa, M.I. 2007. Time-Series Integrated Metabolomic and Transcriptional Profiling Analysis. *In Concepts in Plant Metabolomics*, Nikolau, B.J. & Wurtele, E.S. (Eds.), pp 93-110. Springer. Netherlands.

Kanani, H.H., Klapa, M.I. 2007. Data Correction Strategy for Metabolomics Analysis Gas Chromatography–Mass Spectrometry. *Metabolic Engineering* 9: 39–51.

Laksmanan, M., Zhang, Z., Mohanty, B., Kwon, J-Y., Choi, H-Y., Nam, H-J., Kim, D-I., Lee, D-Y. 2013. Elucidating Rice Cell Metabolism under Flooding and Drought Stresses Using Flux-Based Modeling and Analysis. *Plant Physiology* 162 : 2140–2150.

Lenka, S.K., Katiyar, A., Chinnusamy, V., Bansal, K.C. 2011. Comparative Analysis of Drought-Responsive Transcriptome in *Indica* Rice Genotypes with Contrasting Drought Tolerance. *Plant Biotechnology Journal* 9: 315-327.

Liu, A-L., Zou, J., Liu, C-F., Zhou, X-Y, Zhang, X-W., Luo, G-Y., Chen, X-B. 2013. Over-expression of *OsHsfA7* Enhanced Salt and Drought Tolerance in Transgenic Rice. *BMB Reports* 46 : 31-36.

Livak, K.J., Schmittgen, T.D. 2001. Analysis of Relative Gene Expression data Using Real-Time Quantitative PCR and the $2^{-\Delta\Delta Ct}$ Method. *Methods* 25 : 402-408.

Matsukura, S., Mizoi, J., Yoshida, T., Todaka, D., Ito, Y., Maruyama, K., Shinozaki, K., Yamaguchi-Shinozaki, K. 2010. Comprehensive Analysis of Rice *DREB2*-type Genes that Encode Transcription Factors Involved in the Expression of Abiotic Stress-Responsive Genes. *Molecular Genetics and Genomics* 283: 185–196.

Muller, P.Y., Janovjak, H., Miserez, A.R., Dobbie, Z. 2002. Processing of Gene Expression Data Generated by Quantitative Real-Time RT-PCR. *BioTechniques* 32 : 2-7.

Mulyani, A., Ritung, S., Las, I. 2011. Potensi dan Ketersediaan Sumber Daya Lahan untuk Mendukung Ketahanan Pangan. *Jurnal Litbang Pertanian* 30 : 73-80.

- Muthurajan, R., Shobbar, Z-S., Jagadish, S.V.K, Bruskiwich, R., Ismail, A., Leung, H., Bennet, J. 2011. Physiological and Proteomic Responses of Rice Peduncles to Drought Stress. *Mol Biotechnol* 48: 173-182.
- Nakashima, K., Yamaguchi-Shinozaki, K., Shinozaki, K. 2014. The Transcriptional Regulatory Network in The Drought Response and its Crosstalk in Abiotic Stress Responses Including Drought, Cold, and Heat. *Frontiers in Plant Science* 5 : 1-7.
- Nonis, A., M. Scortegagna, A. Nonis, B. Ruperti. 2011. PRaTo: a Web-Tool to Select Optimal Primer Pairs for qPCR. *Biochem. Biophys. Res. Commun.* 415: 707-708.
- Nuruzzaman, M., Manimekalai, R., Sharoni, A.M., Satoh, K., Kondoh, H., Ooka, H., Kikuchi, S. 2010. Genome-Wide Analysis of NAC Transcription Factor Family in Rice. *Gene* 465: 30-44.
- Oikawa, A., Matsuda, F., Kusano, M., Okazaki, Y., Saito, K. 2008. Rice Metabolomics. *Rice* 1: 63-71.
- Olsen, A.N., Ernst, H.A., Leggio, L.L., Skriver, K. 2005. Transcriptional Networks in Plants NAC Transcription Factors : Structurally Distinct, Functionally Diverse. *Trends in Plant Science* 10 : 79-87.
- Orata, F. 2012. Derivatization Reactions and Reagents for Gas Chromatography Analysis. In *Advanced Gas Chromatography - Progress in Agricultural, Biomedical and Industrial Applications*, Mohd, M.A (Ed.), pp 83-109. InTech. Rijeka.
- Ouk, M., Basnayake, J., Tsubo, M., Fukai, S., Fisher, K.S., Cooper, M., Nesbitt, H. 2006. Use of Drought Response Index for Identification of Drought Tolerant Genotypes in Rainfed Lowland Rice. *Field Crops Research* 99 : 48-58.
- Pierce, K.M., Hope, J.L., Hoggard, J.C., Synovec, R.E. 2006. A Principal Component Analysis Based Method to Discover Chemical Differences in Comprehensive Two-Dimensional Gas Chromatography with Time-of-Flight Mass Spectrometry (GC×GC-TOFMS) Separations of Metabolites in Plant Samples. *Talanta* 70 : 797-804.
- Qiu, Y., Reed, D. 2014. Gas Chromatography in Metabolomics Study. In *Advances in Gas Chromatography*, Guo, X (Ed.), pg 83-101. Intech. Rijeka.
- Rabbani, M.A., Maruyama, K., Abe, H., Khan, M.A., Katsura, K., Ito, Y., Yoshiwara, K., Seki, M., Shinozaki, K., Yamaguchi-Shinozaki, K. 2003.

Monitoring Expression Profiles of Rice Genes under Cold, Drought, and High-Salinity Stresses and Abscisic Acid Application using cDNA Microarray and RNA Gel-Blot Analyses. *Plant Physiol* 133 : 1755-67.

Rejeb, I.B., Pastor, V., Mauch-Mani, B. 2014. Plant Responses to Simultaneous Biotic and Abiotic Stress : Molecular Mechanisms. *Plants* 3 : 458-475.

Rose, M.T., Rose, T.J., Pariasca-Tanaka, J., Yoshihashi, T., Neuweger, H., Goesmann, A., Frei, M., Wissuwa, M. 2012. Root Metabolic Response of Rice (*Oryza sativa* L.) Genotypes with Contrasting Tolerance to Zinc Deficiency and Bicarbonate Excess. *Planta* 236 : 959-973.

Sarker, B.C., Zahan, M., Majumder, U.K., Islam, M.A., Roy, B. 2013. Growth and Yield Potential of Some Local and High Yielding Boro Rice Cultivars. *J. Agrofor. Environ* 7 :107-110.

Sheveleva, E.V., Chmara, W., Bohnert, H.J., Jensen, R.G. 1997. Increased Salt and Drought Tolerance by D-Ononitol Production in Transgenic *Nicotiana tabacum* L. *Plant Physiology* 115 : 1211-1219.

Shinozaki, K., Yamaguchi-Shinozaki, K. 1999. Molecular Responses to Drought Stress. In *Molecular Responses to Cold, Drought, Heat and Salt Stress in Higher Plants*, Shinozaki, K & Yamaguchi-Shinozaki, K (Eds.), pp 11-28. R.G. Landes Company. Texas.

_____. 2000. Molecular Responses to Dehydration and Low Temperature: Differences and Cross-Talk Between Two Stress Signaling Pathways. *Current Opinion in Plant Biology* 3 : 217-223.

_____. 2007. Gene Networks Involved in Drought Stress Response and Tolerance. *Journal of Experimental Botany* 58 : 221-227.

Sinclair, T.R., Ludlow, M.M. 1986. Influence of Soil Water Supply on the Plant Water Balance of Four Tropical Grain Legumes. *Aust. J. Plant Physiol.* 13: 329-341.

Sitairesmi, T., Wening, R.H., Rakhmi, A.T., Yunani, N., Susanto, U. 2013. Pemanfaatan Plasma Nutfah Padi Varietas Lokal dalam Perakitan Varietas Unggul. *Iptek Tanaman Pangan* 8 : 22-30.

Smith, C.A., O'Maille, G., Want, E.J., Qin, C., Trauger, S.A., Brandon, T.R., Custodio, D.E., Abagyan, R., Siuzdak, G. 2005. Metlin : A Metabolite Mass Spectral Database. *Ther Drug Monit* 27 : 747-751.

Syamsiyah, S. 2008. Respon Tanaman Padi Gogo (*Oryza sativa* L.) terhadap Stres Air dan Inokulasi Mikoriza. *Skripsi* : Institut Pertanian Bogor. Bogor.

- Umezawa, T., Fujita, M., Fujita, Y., Yamaguchi-Shinozaki, K., Shinozaki, K. 2006. Engineering Drought Tolerance in Plants: Discovering and Tailoring Genes to Unlock the Future. *Current Opinion in Biotechnology* 17 : 113–122.
- Valliyodan, B., Nguyen, H.T. 2006. Understanding Regulatory Networks and Engineering for Enhanced Drought Tolerance in Plants. *Current Opinion in Plant Biology* 9 : 189-195.
- Velculescu, V.E., Zhang, L., Vogelstein, B., Kinzler, K.W. 2002. Serial Analysis of Gene Expression. *Science New Series* 270 : 484-487.
- Vinocur, B., Altman, A. 2005. Recent Advances in Engineering Plant Tolerance to Abiotic Stress: Achievements and Limitations. *Curr Opin Biotechnol* 16:123-132.
- Waluyo B. 2010. http://www.jatengprov.go.id/?document_srl=6540. Diakses tanggal 1 Februari 2011.
- Wang, W., Vinocur, B., Altman, A. 2003. Plant Response to Drought, Salinity, and Extreme Temperatures : Towards Genetic Engineering for Stress Tolerance. *Planta* 218: 1-14.
- Wening, R.H., Susanto, U. 2014. Skrining Plasma Nutfah Padi terhadap Cekaman Kekeringan. Balai Besar Penelitian Tanaman Padi. *Widyariset* 17 : 193-204.
- Widodo, Patterson, J.H., Newbigin, E., Tester, M., Bacic, A., Roessner, U. 2009. Metabolic Responses to Salt Stress of Barley (*Hordeum vulgare* L.) Cultivars, Sahara and Clipper, Which Differ in Salinity Tolerance. *Journal of Experimental Botany* 60 : 4089–4103.
- Xu, Z.S., Ni, Z.Y., Li, Z.Y., Li, L.C., Chen, M., Gao, D.Y., Yu, X.D., Liu, P., Ma, Y.Z. 2009. Isolation and Functional Characterization of *HvDREB1-a* Gene Encoding a Dehydration-Responsive Element Binding Protein in *Hordeum vulgare*. *J. Plant Res.* 122 : 121-130.
- Yamaguchi-Shinozaki, K., Shinozaki, K.. 2005. Organization of *Cis*-acting Regulatory Elements in Osmotic- and Cold-Stress-Responsive Promoters. *Trends Plant Sci.* 10 : 88-94.
- _____. 2006. Transcriptional Regulatory Networks in Cellular Responses and Tolerance to Dehydration and Cold Stresses. *Annu Rev Plant Biol* 57 : 781-803.

- You, J., Hu, H., Xiong, L. 2012. An Ornithine 1-Aminotransferase Gene *OsOAT* Confers Drought and Oxidative Stress Tolerance in Rice. *Plant Science* 197: 59–69.
- Yuwono, T. 2005. *Biologi Sel dan Molekuler*. Jakarta. Erlangga.
- Zheng, X., B. Chen, G. Lu, B. Han. 2009. Overexpression of a NAC transcription Factor Enhances Rice Drought and Salt Tolerance. *Biochemical and Biophysical Research Communications* 379 : 985–989.
- Zheng, X., Chen, B., Lu, G., Han, B. 2009. Overexpression of a NAC Transcription Factor Enhances Rice Drought and Salt Tolerance. *Biochemical and Biophysical Research Communications* 379: 985-989.
- Zhou, M-L., Ma, J-T., Pang, J-F., Zhang, Z-L., Tang, Y-X., Wu, Y-M. 2010. Regulation of Plant Stress Response by Dehydration Responsive Element Binding (DREB) Transcription Factors. *African Journal of Biotechnology* 9 : 9255-9279.
- Zhu J-K. 2001. Plant Salt Tolerance. *Trends in Plant Science* 6 : 66-71.