

## DAFTAR PUSTAKA

- Abdullah, B., T. Soewito, dan Sularjo. 2008. Perkembangan dan prospek perakitan padi tipe baru di Indonesia. *Jurnal Penelitian dan Pengembangan Pertanian* 27 : 1—9.
- Anonim. 2015. Gubernur NTB Gelar Panen Padi Varietas Inpari-13. <<http://www.jspo.net/>>. Diakses pada 10 Januari 2015.
- APG IV. 2016. An update of the angiosperm phylogeny group classification for the others and families of flowering plants: apg iv. *Botanical Journal of the Linnean Society* 181: 1-20.
- Babu, R. M., A. Sajeena, A. V. Samundeeswari, A. Sreedhar, P. Vidhyasekeran dan M. S. Reddy. 2003. Induction of bacterial blight (*Xanthomonas oryzae* pv. *oryzae*) resistance in rice by treatment with a cibenzolar-S-methyl. *Ann appl. Biol* 143: 333-340
- Bent, A.F. 1996. Plant disease resistance genes: function meets structure. *The Plant Cell* 8: 1757—1771.
- Bentota, A.P., D. Senadhira, dan M.J. Lawrence. 1995. Genetic analysis of new plant type in Rice (*Oryza sativa* L.) with a view to exploit yield potential. University of Birmingham, Birmingham.
- Chang, T. T. 2003. Origin, Domestication, and Diversification. *In*: W. C. Smith and R. H. Dilday (EDS.). John Wiley and Sons, Inc. Hoboken, New Jersey.
- Chen, S., Z. Huang, L. Zeng, J. Yang, Q. Liu, X. Zhu, 2008. High-resolution mapping and gene prediction of *Xanthomonas Oryzae* pv. *Oryzae* resistance gene *Xa7*. *Mol Breeding* 22: 433-441
- Collard, B.C.Y., M.Z.Z. Jahufer, J.B., Brouwer, dan E. C. K. Pang, 2005. An introduction to markers, quantitative trait loci (QTL) mapping and marker-assisted selection for crop improvement : the basic concepts. *Euphytica* 142 : 169—196.
- Direktorat Perlindungan Tanaman Pangan. 2011. Prakiraan serangan BLB pada padi di Indonesia masa tanam 2011. <[www.deptan.go.id](http://www.deptan.go.id)>. Diakses 11 Februari 2017.
- Djarmiko, H.A. dan Fatichin, 2009. Ketahanan dua puluh satu varietas padi terhadap penyakit hawar daun bakteri. *J. HPT Tropika* 9: 168-173
- Doyle, J.J., dan J.L. Doyle. 1990. Isolation of plant dna from fresh tissue. *Focus* 12: 13-15.
- Fatchiyah, E. L. Arumingtyas, S. Widyarti, dan S. Rahayu. 2011. *Biologi Molekular Prinsip Dasar Analisis*. Erlangga, Jakarta.

- Fatimah, J. Prasetyono, T.P. Priyatno, M. Yunus, T. Suhartini, I. Ridwan dan M. Baroya. 2015. Analisis molekuler piramida gen *Xa* pada progeneri padi varietas ciharang dan inpari 13. *Jurnal Biologi Indonesia* 11:109-119.
- Fatimah, T. P. Priyatno, S. H., Fadlilah, Hermanto, M. Baroya, Mahrup, Wawan, D. Sasongko, Y. Suryadi, dan T. S. Kadir. 2014. Isolation and disease assessment of *Xanthomonas oryzae* pv. *oryzae* from Java island and pathogenic assay on near isogenic lines with different resistant genes. *Jurnal Biologi Indonesia* 10: 237—245.
- Hummel, A.W., E.L. Doyle, dan A.J. Bognadove. 2012. Addition of transcription activator-like effector binding sites to a pathogen strain-specific rice bacterial blight resistance gene makes it effective against additional strains and against bacterial leaf streak. *New Phytologist* 195 : 883—893.
- Hifni, H. R., dan M. K. Kardin. 1998. Pengelompokan isolat *Xanthomonas oryzae* pv. *oryzae* dengan menggunakan isogenik padi IRRI. *Hayati* 5: 66-72.
- Hifni, H.R., dan S. Miharja. 1994. Studi penggeseran strain bakteri *Xanthomonas Campestris* pv. *Oryzae* penyebab penyakit hawar daun bakteri. Tidak dipublikasikan.
- Hospital F., 2003. Marker-assisted breeding. *Plant Molecular Breeding*. H.J. Newbury (ed) Blackwell Publishing, Carlton.
- Huang, N., E. R. Angeles, J. Domingo, G. Magpantay, S. Singh, G. Zhang, N. Kumaravadivel, J. Bennett, dan G. S. Khush, 1997. Pyramiding of bacterial blight resistance genes in rice: marker-assisted selection using rflp and pcr. *Theory Application Genetic* 95: 313—320.
- International Rice Research Institute (IRRI). 1996. Standard Evaluation System for Rice. IRRI, Philippines.
- Ishii, T., dan K. Yonezawa. 2007. Optimization of the marker-based procedures for pyramiding genes from multiple donor lines: ii. strategies for selecting the objective homozygous plant. *Crop Science* 47: 1878—1886.
- Jha, G., R. Rajeswhari, dan R.V. Shonti. 2007. Functional interplay between two *Xanthomonas oryzae* pv. *Oryzae* secretion systems in modulating virulence on rice. *Mol. Plant-Microbe Interact.* 20:31-40.
- Jiang, G. L. 2013. *Plant Breeding from Laboratories to Fields*. InTech, Croatia.
- Jonharnas. 2009. Keragaan pertumbuhan dan hasil galur padi sawah di Kabupaten Serdang Bedagai Sumatera Utara. *Jurnal Ilmiah Tambua* 8:386-389.

- Joshi, R. K. dan S. Nayak. 2010. Gene pyramiding: a broad spectrum technique for developing durable stress resistance in crops. *Biotechnology and Molecular Biology Review* 5: 51—60.
- Kadir, T. S. 1999. Variasi patogen *Xanthomonas oryzae* pv. *oryzae*. Prosiding Kongres Nasional XV dan Seminar Ilmiah PFI, Purwokerto, 16-18 September 1999.
- Kadir, T. S., Y. Suryadi, Sudir, dan M. Machmud. 2009. Penyakit Bakteri Padi dan Cara Pengendaliannya. *Dalam: Padi: Inovasi Teknologi Produksi, Buku 2*. A.A. Daradjat, A. Setyono, A.K. Makarim, dan A. Hasanuddin (Eds.), LIPI Press.
- Kardin M. K, dan H. R. Hifni. 1993. Penyakit Hawar Daun Bakteri Padi di Indonesia. Research Seminar Puslit
- Khaeruni, A., A. Rahim, Syair, dan Adriani, 2014. Induksi ketahanan terhadap penyakit hawar daun bakteri pada tanaman padi di lapangan menggunakan rizobakteri indigenos. *J. HPT Tropika* 14: 57-63.
- Khush, G. S. 1996. Prospects and Approaches to Increasing The Genetic Yield Potential of Rice. *In: R. I., Everson, R. W., Herdt, and M., Hossain (EDS)*. IRRI, Philippines.
- Lee, K. S., S. Patotipeabandith, E. R. Angeles, dan G.S. Khush. 2003. Inheritance of resistance to bacterial blight in 21 cultivars of rice. *Phytopathology* 93:147-152.
- Liu, D. O. N., C. R. Pamela, dan J. B. Adam. 2006. *Xanthomonas oryzae* pathovars: model pathogen of a model crop. *Molecular Plant Pathology* 7: 303—324.
- Loan, L.C., V.T.T. Ngan, dan P.V. Du. 2006. Preliminary evaluation of nonresistance genes against rice bacterial leaf blight in can tho province-vietnam. *Omonrice* 14: 44-47
- Ma, B. J., W. M. Wang, B. Zhao, dan Y. L. Zhou. 1999. Studies of pcr markers for the rice bacterial blight resistance gene *Xa4*. *Hereditas* 21: 9—12.
- Mazzola, M., J. E. Leach, R. Nelson, dan F. White. 1994. Analysis of the interaction between *Xanthomonas oryzae* pv. *Oryzae* and the rice cultivars IR24 and IRBB21. *Phytopathology* 84: 392—397.
- Mew, T.W., V. Cruz, dan R.C. Rayes. 1982. Interaction of *Xanthomonas campestris oryzae* and resistance of rice cultivar. *Phytopathology* 72:786—789.
- Morillo, S. A., dan F. E. Tax. 2006. Functional analysis of receptor-like kinases in monocots and dicots. *Curr Opin Plant Biol.* 9:460—469.
- Ogawa. 1993. Methods and strategy for monitoring rice distributions and identifications of resistance genes to bacterial leaf blight (*Xanthomonas campestris* pv. *oryzae*) in rice. *JARQ* 27:71—80.

- Ogawa, T., G. A. Busto, R. E. Tabien, dan G. S. Khush. 2012. Further study of *Xa4b* gene for resistance to bacterial blight of rice . *Dalam* Yuriyah, S., D. W. Utami, dan I. Hanarida. 2013. Uji ketahanan galur-galur harapan padi terhadap penyakit hawar daun bakteri (*Xanthomonas oryzae* pv. *oryzae*) ras iii, iv dan viii. *Buletin Plasma Nutfah* 19:53-60.
- Panigrahi, J., R. R. Mishra, A. R. Sahu, S. C. Rath, S. Seth, dan S. P. Mishra. 2013. Marker-assisted breeding for simple inherited traits conferring stress resistance in crop plants. *The Ecoscan* 3 : 217—233
- Peng, S., K. G. Cassman, S. S. Virmani, J. Sheehy, dan G. S. Khush. 1999. Yield potential trends of rice since the release of IR8 and the challenge of increasing rice yield potential. *Crop Science* 39 : 1552-1559.
- Rozakurniati. 2010. Inpari 13 padi sangat genjah dan tahan wereng coklat. *Warta Penelitian dan Pengembangan Pertanian* 32:7-9
- Sambrook, J., dan D. W. Russell. 2001. *Molecular Cloning: a laboratory manual*. Coldspring Harbor Laboratory Press, New York
- Servin, B., O. C. Martin, M. Mezard, dan F. Hospital. 2004. MDM: A program to compute fully informative genotypes frequencies in complex breeding schemes. *The Journal of Heredity* 93 : 227—228.
- Shanti, M. L., G. L. Devi, G. N. Kumar, dan H. E. Shashidhar. 2010. Molecular marker-assisted selection: a tool for insulating parental lines of hybrid rice against bacterial leaf blight. *Int. Jour. of Plant Pathology* 1: 114-123.
- Silitonga, T. S. 2004. Pengelolaan dan pemanfaatan plasma nutfah padi di indonesia. *Buletin Plasma Nutfah* 10: 56-71.
- Silitonga, T. S. 2010. The use of biotechnology in the characterization, evaluation, and utilization of indonesian rice germplasm. *Jurnal Agro Biogen* 6: 49—56.
- Singh, S., J. S. Sidhu, N. Huang, Y. Vikal, Z. Li, D. S. Brar. H. S. Dhaliwal, dan G. S. Khush. 2001. Pyramiding three bacterial blight resistance genes (*xa5*, *xa13* and *Xa21*) using marker-assisted selection into indica rice cultivar PR106. *Theor Appl Genet* 102:1011-1015
- Song, W. Y., G.L. Wang, L. L. Chen, H. S. Kim, L. Y. Pi, T. Holsten, J. Gardner, B. Wang, W. X. Zhai, L. H. Zhu, C. Fauquet, dan P. Ronald. 1995. A receptor kinase-like protein encoded by the rice disease resistance gene, *Xa21*. *Science* 270 : 1804—1806.
- Sudir, B. Nuryanto, dan T. S. Kadir. 2012. Epidemiologi, patotipe, dan strategi pengendalian penyakit hawar daun bakteri pada tanaman padi. *IPTEK Tanaman Pangan* 7:79-87.

- Sudir, T. S. Kadir, dan Suprihanto. 2009. Identifikasi patotipe *Xanthomonas oryzae* pv. *oryzae*, penyebab penyakit hawar daun bakteri padi di sentra produksi padi di jawa. Penelitian Pertanian Tanaman Pangan 28: 131—138.
- Sudir, T. S. Kadir, dan Suprihanto. 2010. Pemetaan patotipe *Xanthomonas oryzae* pv. *oryzae*, penyebab penyakit hawar daun bakteri padi di sentra produksi padi di jawa. Laporan Hasil Penelitian Tahun 2010. Balai Besar Penelitian Tanaman Padi, Sukamandi.
- Suh, J.P., J. U. Jeung, T. H. Noh, Y. C. Cho, S. H. Park, H. S. Park, M. S. Shin, C. K. Kim, dan K. K. Jena. 2013. Development of breeding lines with three pyramided resistance genes that confer broad-spectrum bacterial blight resistance and their molecular analysis in rice. Rice 6:5-16.
- Suparyono, Sudir, dan Suprihanto. 2003. Komposisi patotipe patogen hawar daun bakteri pada tanaman padi stadium tumbuh berbeda. Jurnal Penelitian Pertanian 22: 45-50.
- Suparyono, Sudir, dan Suprihanto. 2004. Pathotype profile of *Xanthomonas campestris* pv. *oryzae*, isolates from the rice ecosystem in Java. Indonesian Jurnal of Agricultural Science 5: 63-69.
- Suprihatno, B., A. A. Daradjat, Satoto, S.E. Baehaki, Suprihatno, A. Setyono, S.D. Indrasari, I. P. Wardana, dan H. Sembiring. 2010. Deskripsi varietas padi. Balai Besar Tanaman Padi, Sukamandi.
- Supriyanti, E. D. 2016. Seleksi Background pada Galur Piramida BC3F1 Inpari 13 Tahan Penyakit Hawar Daun Bakteri. Fakultas Pertanian. Universitas sultan Ageng Tirtayasa. Skripsi.
- Susanto, U., dan Sudir. 2012. Ketahanan genotipe padi terhadap *Xanthomonas oryzae* pv. *Oryzae* patotipe III, IV, dan VIII. Penelitian Pertanian Tanaman Pangan 31: 108—116.
- Takariyana. 2016. Analisis Outlook Komoditas Pertanian Tanaman Padi. Pusat Data dan Sistem Informasi Pertanian Kementerian pertanian.
- Tasliah. 2012. Gen ketahanan tanaman padi terhadap bakteri hawar daun (*Xanthomonas oryzae* pv. *oryzae*). Jurnal Litbang Pertanian 31:103-112.
- Thermo Fisher Scientific. 2009. Nanodrop 2000/200c Spectrophotometer V1.0 User Manual. Thermo Fisher Scientific, Wilmington.
- Utami, D. W, A. D. Ambarwati, A. Apriana, A. Sisharmini, I. Hanarida, D. Tharreau, dan Santosa. 2007. Spektrum ketahanan galur haploid ganda turunan IR64 dan *Oryza rufipogon* yang mengandung QTL ketahanan terhadap penyakit blas (*Pir*). Jurnal Agrobiogen 3: 1-7.

- Vera Cruz, C. 2002. Breeding for rice disease. Rice Breeding Course. IRRI, Los Banos, Phillipines.
- Virk, P.S., G.S. Khush, dan S. Peng. 2004. Breeding to enhance yield potential of rice at IRRI : the ideotype approach. IRRN Mini Review 29 : 5-9.
- Welsh, J.R., 1991. Dasar-dasar Genetika dan Pemuliaan Tanaman (Fundamental of Plant Genetics and Breeding, alih bahasa: J. P. Moge) . Erlangga. Jakarta.
- Xu, Y. 2010. Molecular Plant Breeding. CABI Publishing, London.
- Yang, Z., X. Sun, S. Wang, dan Q. Zhang. 2003. Genetic and physical mapping of a new gene for bacterial blight resistance in rice. Theor Appl Genet 106:1467-1472
- Ye, G., dan K. F. Smith. 2008. Marker assisted gene pyramiding for inbred line development: basic principles and practical guidelines. International Journal of Plant Breeding: 1-10.
- Yuliani, D., R.H. Wening, dan Sudir. 2015. Karakterisasi sifat morfologi dan ketahanan terhadap penyakit hawar daun bakteri pada beberapa varietas padi. Penelitian Tanaman Pangan 34: 121-130
- Yuriyah, S., D. W. Utami, dan I. Hanarida. 2013. Uji ketahanan galur-galur harapan padi terhadap penyakit hawar daun bakteri (*Xanthomonas oryzae* pv. *oryzae*) ras iii, iv dan viii. Buletin Plasma Nutfah 19:53-60.
- Yusida, S. Miharja, H. R. Hifni, dan T. Soewito. 1994. Identifikasi gen ketahanan pada varietas padi IRBBN yang efektif terhadap strain *Xanthomonan oryzae* pv. *oryzae* kelompok III dan IV. Dalam Machmud *et al.* (Eds). Risalah Hasil Penelitian Tanaman Pangan No. 3. Balai Penelitian Tanaman Pangan, Bogor.
- Zhang, Y., J. Wang, J. Pan, Z. Gu, X. Chen, Y. Jin, F. Liu, H. Zhang, dan B. Ma. 2009. Identification and molecular mapping of the rice bacterial blight resistance gene allelic to *Xa7* from an elite restorer line Zhenhui 084. Eur J. Plant Pathol 125:235-244