

REFERENCES

- Abbott, L.K. and A.D. Robson. 1979. A quantitative study on the spores and anatomy of mycorrhizas formed by a species of *Glomus*, with special reference to its taxonomy. *Australian Journal of Botany*. 27: 363 - 375.
- Abbott, L.K. 1982. Comparative anatomy of vesicular-arbuscular mycorrhizas formed on subterranean clover. *Australian Journal Botany*. 30: 485 - 495.
- Amijee, F., P.B. Tinker and D.P. Stribley. 1989. The development of endomycorrhizal root systems. VII. A detailed study of effects of soil phosphorus on colonization. *New Phytologist*. 111: 435 - 446.
- Ananthakrishnan, G., R. Ravikumar, S. Girija and A. Ganapathi. 2004. Selection of effecient arbuscular mycorrhizal fungi in the rhizosphere of cashew and their application in the cashew nursery. *Scientia Horticulturae*. 100: 369 - 375.
- Asimi, S., V. Gianinazzi-Pearson and S. Gianinazzi. 1980. Influence of increasing soil phosphorus levels on interactions between vesicular-arbuscular mycorrhizae and Rhizobium in soybeans. *Canadian Journal of Botany*. 58: 2200 - 2205.
- Azcon, R. and J.A. Ocampo. 1981. Factors affecting the vesicular-arbuscular infection and mycorrhizal dependency of thirteen wheat cultivars. *New Phytologist*. 87: 677 - 685.
- Bagayoko, M., E. George, V. RÖmhild and A. Buerkert. 2000. Effects of mycorrhizae and phosphorus on growth and nutrient uptake of millet, cowpea and sorghum on a West African soil. *Journal of Agricultural Science*. 135: 399 - 407.

- Bai, J., L. Xiangui, Y. Rui, Z. Huayong, J. Wang, X. Chen and Y. Luo. 2008. The influence of arbuscular mycorrhizal fungi on As and P uptake by maize (*Zea mays* L.) from As-contaminated soils. *Applied Soil Ecology*. 38: 137 - 145.
- Balestrini, R. and L. Lanfranco. 2006. Fungal and plant gene expression in arbuscular mycorrhizal symbiosis. *Mycorrhiza*. 16: 509 - 524.
- Baon, J.B., S.E. Smith and A.M. Alston. 1993. Mycorrhizal responses of barley cultivars differing in P efficiency. *Plant and Soil*. 157: 97 - 105.
- Bass, S. and E. Morrison. 1994. Shifting cultivation in Thailand, Laos and Vietnam: Regional overview and policy recommendations forestry and land use programme. IIED Forestry and Land Use Series No. 2. London: International Institute of Environment and Development.
- Brundrett, M., N. Bougher, B. Dell, T. Grove and N. Malajczuk. 1996. Working with Mycorrhizas in Forest and Agriculture. ACIAR Monograph. Canberra, Australia.
- Buwalda, J.G., D.P. Sibley and P.B. Tinker. 1983. Increase uptake of anions by plants with vesicular-arbuscular mycorrhizas. *Plant and Soil*. 71: 463 - 467.
- Carling, D.E., R.W. Roncadori and R.S. Hussy. 1996. Interaction of arbuscular mycorrhizae, *Meloidogyne arenaria*, and phosphorus fertilization on peanut. *Mycorrhiza*. 6: 9 - 13.
- Cairns, M. and D.P. Garrity. 1999. Improving shifting cultivation in Southeast Asia by building on indigenous fallow management strategies. *Agroforestry System*. 47: 37 - 48.
- Clark, R.B. 1997. Arbuscular mycorrhizal adaptation, spore germination, root colonization, and host plant growth and mineral acquisition at low pH. *Plant and Soil*. 192: 15 - 22.

- De Miranda, J.C.C., P.J. Harris and A. Wild. 1989. Effects of soil and plant phosphorus concentrations on vesicular-arbuscular mycorrhizae in sorghum plants. *New Phytologist*. 112: 405 - 410.
- Devendra, C. and D. Thomas. 2002. Smallholder farming system in Asia. *Agricultural Systems*. 71: 17 - 25.
- Diop, T.A., T.K. Wade, A. Diallo, M. Diouf and M. Gueye. 2003. Solanum cultivar responses to arbuscular mycorrhizal fungi: growth and mineral status. *African Journal of Biotechnology*. Vol.2 (11): 429 - 433.
- Dhillon, S.S. 1992. Host-endophyte specificity of vesicular-arbuscular mycorrhizal colonization of *Oryza sativa* L. at the pre-transplant stage in low of high phosphorus soil. *Soil Biology and Biochemistry*. 24: 405 - 411.
- DOA website, <http://www.doa.go.th/> (15/02/2008)
- Duponnois, R., C. Plenquette and A.M. Bâ. 2001. Growth stimulation of seventeen fallow leguminous plants inoculated with *Gomus aggregatum* in Senegal. *European Journal of Soil Biology*. 37: 181 - 186.
- Friberg, S. 2001. Distribution and diversity of arbuscular mycorrhizal fungi in traditional agriculture on the Niger inland delta, Mali, West Africa. CBM:s Skriftserie 3: 53 - 80.
- Galvez, L., D.D. Douds Jr, L.E.D. Jr and P. Wagoner. 2001. Effect of tillage and farming system upon VAM fungus population and mycorrhizas and nutrient uptake of maize. *Plant and Soil*. 228: 299 - 308.
- Gao, X., W.T. Kuyper, C. Zou, F. Zhang and E. Hoffland. 2007. Mycorrhizal responsiveness of aerobic rice genotypes is negatively correlated with their zinc uptake when nonmycorrhizal. *Plant and Soil*. 290: 283 - 291.

- Gavito, M.E. and M.H. Miller. 1998. Changes in mycorrhiza development in maize induced by crop management practice. *Plant and Soil.* 198: 185 - 192.
- Gianinazzi-Pearson, B. and S. Gianinazzi. 1983. The physiology of vesicular-arbuscular mycorrhizal roots. *Plant and Soil.* 71: 197 - 209.
- Gildon, A. and P.B. Tinker. 1983. Interactions of vesicular-arbuscular mycorrhizal infections and heavy metals in plants. II. The effects of infection on uptake of copper. *New Phytologist.* 95: 263 - 268.
- Giovannetti, M., A. Schubert, M.C. Cravero and L. Salutini. 1988. Spore production by the vesicular-arbuscular mycorrhizal fungus *Glomus monosporum* as related to host species, root colonization and plant growth enhancement. *Biology and Fertility of Soils.* 6: 120 - 124.
- Graham, J.H., R.T. Leonard and J.A. Menge. 1981. Membrane-mediated decrease in root exudation responsible for phosphorus exhibition of vesicular-arbuscular mycorrhiza formation. *Plant Physiology.* 68: 548 - 552.
- Grandcourt, A.D., D. Epron, P. Montpied, E. Louisanna, M. Bereau, J. Garbaye and J.M. Guehl. 2004. Contrasting responses to mycorrhizal inoculation and phosphorus availability in seedlings of two tropical rainforest tree species. *New Phytologist.* 161: 865 - 875.
- Harley, J.L. and S.E. Smith. 1983. Mycorrhizal Symbiosis. Academic Press. London.
- Hart, M.M. and R.J. Reader. 2002. Taxonomic basis for variation in the colonization strategy of arbuscular mycorrhizal fungi. *New Phytologist.* 153: 335 - 344.
- Hetrick, B.A.D. 1991. Mycorrhizas and root architecture. *Experientia.* 47: 355 - 362.

- Hetrick, B.A.D., G.W.T. Wilson and T.C. Todd. 1992. Relationship of mycorrhizal symbiosis, root strategy, and phenology among tallgrass prairie forbs. Canadian Journal of Botany. 70: 1521 - 1528.
- Huante, P., E. Rincon and E.B. Allen. 1993. Effect of vesicular-arbuscular mycorrhizae on seedling growth of four tree species from the tropical deciduous forest in Mexico. Mycorrhiza. 2: 141 - 145.
- Insalud, N. 2006. Genotypic variation in responses to aerobic and anaerobic condition in rice. Ph.D. Thesis. Chiang Mai University.
- INVAM website, <http://invam.caf.wvu.edu/> (30/03/2006)
- Jackson, H. 1967. Soil Chemistry Analysis. Prentice-Hall of India Private Limited. New Delhi.
- Jakobsen, I., L.K. Abbott and A.D. Robson. 1992. External hyphae of vesicular arbuscular mycorrhizal fungi associated with *Trifolium subterraneum* L. 1. Spread of hyphae and phosphorus inflow into roots. New Phytologist. 120: 371 - 380.
- Kabir, Z., I.P. O'Halloran, J.W. Fyles and C. Hamel. 1997. Seasonal changes of arbuscular mycorrhizal fungi as affected by tillage practices and fertilization: Hyphal density and mycorrhizal root colonization. Plant and Soil. 192: 285 - 293.
- Karasawa, T., Y. Kasahara and M. Takebo. 2002. Differences in growth responses of indigenous arbuscular mycorrhizal fungi. Soil Biology and Biochemistry. 34: 851 - 857.
- Kilham, K. and M.K. Firestone. 1983. Vesicular arbuscular mycorrhizal mediation of grass response to acidic and heavy metal depositions. Plant and Soil. 72: 39 - 48.

- Klironomos, J.N., J. McCune, M. Hart and J. Neville. 2000. The influence of arbuscular mycorrhizae on relationship between plant diversity and productivity. *Ecology Letter.* 3: 137 - 141.
- Klironomos, J.N. 2003. Variation in plant response to native and exotic arbuscular mycorrhizal fungi. *Ecology.* 84(9): 2292 - 2301.
- Koide, R.T., M. Li, J. Lewis and C. Irby. 1988. Role of mycorrhizal infection in the growth and reproduction of wild vs cultivated plants. I. Wild vs cultivated oats. *Oecologia.* 77: 537 - 543.
- Koide, R.T. and M. Li. 1990. On host regulation of the vesicular-arbuscular mycorrhizal symbiosis. *New Phytologist.* 114: 59 - 65.
- Koide, R.T. 1991. Nutrient supply, nutrient demand and plant response to mycorrhizal infection. *New Phytologist.* 117: 365 - 386
- Krishna, K.R. 2005. Mycorrhizas: A Molecular Analysis. Science Publishers, Inc., NH. 316 pp.
- Kunstadter, P., E.C. Chapman and S. Sabhasri. 1978. Farmer in the forest: Economic development and marginal agriculture in northern Thailand. Honolulu: University Press of Hawaii for the East-West Center. 402 pp.
- Lambert, D.H., D.E. Baker and H. Cole. 1979. The role of mycorrhizae in the interactions of phosphorus with zinc, copper and other elements. *Soil Science Society of America Journal.* 43: 976 - 980.
- Marschner, H. 1995. Mineral nutrition of higher plants, 2nd/Ed. Academic Press, London.
- Marschner, H. and B. Dell. 1994. Nutrient uptake in mycorrhizal symbiosis. *Plant and Soil.* 159: 89 - 102.

- McGonigle, T.P., M.H. Miller, D.G. Evans, G.L. Fairchild and J.A. Swan. 1990. A new method which gives an objective measure of colonization of root by vesicular-arbuscular mycorrhizal fungi. *New Phytologist*. 115: 495 - 501.
- Monzon, A. and R. Azcón. 1996. Relevance of mycorrhizal fungal origin and host plant genotype to inducing growth and nutrient uptake in *Medicago* species. *Agriculture, Ecosystem and Environment*. 60: 9 - 15.
- Murphy, J. and J.P. Riley. 1962. A modified single solution for determination of phosphate in natural waters. *Analytica Chimica Acta*. 27: 31 - 36.
- Na Bhadalung, N., A. Suwanarit, B. Dell, O. Nopamornbodi, A. Thamchaipenet and J. Rungchuang. 2005. Effects of long-term NP-fertilization on abundance and diversity of arbuscular mycorrhizal fungi under a maize cropping system. *Plant and Soil*. 270: 371 - 382.
- NAFRI. 2005. Improving livelihoods in the uplands of the LAO PDR. 262 pp.
- Nagahashi, G., D.D. Douds Jr and G.D. Abney. 1996. Phosphorus amendment inhibits hyphal branching of the VAM fungus *Gigaspora margarita* directly and indirectly through its effect on root exudation. *Mycorrhiza*. 6: 403 - 408.
- Newman, E.I. and P. Rydell. 1987. The distribution of mycorrhizas among families of vascular plants. *New Phytologist*. 106:745 - 751.
- Nwoko, H. and N. Sanginga. 1999. Dependence of promiscuous soybean and herbaceous legumes on arbuscular mycorrhizal fungi and their response to bradyrhizobial inoculation in low P soils. *Applied Soil Ecology*. 13: 251 - 258.
- OAE. 1998. Report on the Survey of Main Season Rice, 1996/97 Season. In Agricultural Statistic Document No. 9/1998.

- Oehl, F., E. Sieverding, K. Ineichen, P. Ma der, T. Boller and A. Wiemken. 2003. Impact of land use intensity on the species diversity of arbuscular mycorrhizal fungi in agroecosystems of central Europe. *Applied and Environmental Microbiology*. 69: 2816 - 2824.
- Plenchette, C., J.A. Fortin and B. Furlan. 1983. Growth responses of several plant species to mycorrhizae in a soil of moderate P-fertility. Part I. Mycorrhizal dependency under field conditions. *Plant and Soil*. 70: 199 - 209.
- Plenchette, C. and C. Morel. 1996. External phosphorus requirement of mycorrhizal and non-mycorrhizal barley and soybean plants. *Biology and Fertility of Soils*. 21: 303 - 308.
- Ponnamperuma, F.N. 1972. The chemistry of submerged soils. *Advances in Agronomy*. 24: 29 - 96.
- Ratnayake, M., R.T. Leonard and J.A. Menge. 1978. Root exudation in relation to supply of phosphorus and its possible relevance to mycorrhizal formation. *New Phytologist*. 81: 543 - 552.
- Rerkasem, K. and B. Rerkasem. 1994. Shifting Cultivation in Thailand: Its current situation and dynamics in the context of highland development. IIED Forest and Land Use Series No. 4. London: International Institute of Environment and Development.
- Rerkasem, K., N. Yimyam, C. Kosamphan, C. Thong-Ngam and B. Rerkasem. 2002. Agrodiversity lessons in mountain land management. *Mountain Research and Development*. 22: 4 - 9.
- Rerkasem, K. 2003. Upland land use. In M. Kaosa-ard and J. Dore (eds.) *Social Challenged for the Mekong region*. 323 - 346. Bangkok: White Lotus.

- Schwarzott, D., C. Walker and A. Schüßler. 2001. *Glomus*, the largest genus of the arbuscular mycorrhizal fungi (Glomales), is nonmonophyletic. Molecular Phylogenetic and Evolution. 21(2): 190 - 197.
- Schweiger, P.F., A.D. Robson and N.J. Barrow. 1995. Root hair length determines beneficial effect of a *Glomus* species on shoot growth of some pasture species. New Phytologist. 131: 247 - 254.
- Secilia, J. and D.J. Bagyaraj. 1992. Selection of efficient vesicular-arbuscular mycorrhizal fungi for wetland rice (*Oryza sativa L.*). Biology and Fertility of Soils. 13: 108 - 111.
- Smith, S.E. and D.J. Read. 1997. Mycorrhizal Symbiosis 2nd ed. Academic Press. London.
- Smith, S.E. and D.J. Read. 2000. Mycorrhizal Symbiosis 2nd ed. Academic Press. London.
- Solaiman, M.Z. and H. Hirata. 1997. Effect of arbuscular mycorrhizal fungi inoculation of rice seedlings at the nursery stage upon performance in the paddy field and greenhouse. Plant and Soil. 191: 1 - 12.
- Stark, M.T. 2006. Early Mainland Southeast Asian Landscapes in the first Millennium A.D. Annual Review Anthropology. 35: 21.1 - 21.26.
- Talavera, M., K. Itou and T. Mizukubo. 2001. Reduction nematode damage by root colonization with arbuscular mycorrhiza (*Glomus* spp.) in tomato-*Meloidogyne incognita* (Tylenchida: Meloidogynidae) and carrot-*Pratylenchus penetrans* (Tylenchida: Pratylenchidae) pathosystem. Applied Entomology and Zoology. 36(3): 387 - 392.

- Tawaraya, K., K. Hashimoto and T. Wagatsuma. 1998. Effect of root exudate fractions from P-deficient and P-sufficient onion plants on root colonisation by the arbuscular mycorrhizal fungus *Gigaspora margarita*. *Mycorrhiza*. 8: 67 - 70.
- Tawaraya, K., K. Tokairin and T. Wagatsuma. 2001. Dependence of *Allium fistulosum* cultivars on the arbuscular mycorrhizal fungus, *Glomus fasciculatum*. *Applied Soil Ecology*. 17: 119 - 124.
- Turjaman, M., Y. Tamai, E. Santoso, M. Osaki and K. Tawara. 2006. Arbuscular mycorrhizal fungi increased early growth of two non timber forest product species *Dyera polyphylla* and *Aquilaria filaria* under greenhouse condition. *Mycorrhiza*. 16: 459 - 464.
- Vandenkoornhuyse, P., R. Husband, T.J. Daniell, I.J. Watson, J.M. Duck, A.H. Fitter and J.P.W. Young. 2002. Arbuscular mycorrhizal community composition associated with two plant species in a grassland ecosystem. *Molecular Ecology*. 11: 1555 - 1564.
- Van der Heijden, M.G.A., A. Wiemken and I.R. Sanders. 2003. Different arbuscular mycorrhizal fungi alter coexistence and resource distribution between co-occurring plant. *New Phytologist*. 157: 569 - 578.
- Wanatabe, F.S. and S.R. Olsen. 1962. Colorimetric determination of phosphorus in water extracts of soil. *Soil Science*. 93: 183 - 188.
- Yimyam, N., K. Rerkasem and B. Rerkasem. 2003. Fallow enrichment with pada (*Macaranga denticulata* (Bl.) Muell. Arg.) trees in rotational shifting cultivation in northern Thailand. *Agroforestry Systems*. 57: 79 - 86.

- Yimyam, N. 2006. Fallow regeneration and upland rice yield variation in a system of shifting cultivation with pada (*Macaranga denticulata* (BL.) Muell. Arg) as the fallow enriching species in northern Thailand. Ph.D. Thesis. Chiang Mai University.
- Youpensuk, S. 2004. Diversity of arbuscular mycorrhizal fungi in mildew mahang (*Macaranga denticulata* Muell. Arg.) and their effects on the host plant. Ph.D. thesis. Chiang Mai University.
- Youpensuk, S., S. Lumyong, B. Dell and B. Rerkasem. 2004. Arbuscular mycorrhizal fungi in the rhizosphere of *Macaranga denticulata* Muell. Arg., and their effect on the host plant. Agroforestry Systems. 60: 239 - 246.
- Youpensuk, S., B. Rerkasem, B. Dell and S. Lumyong. 2005. Effects of arbuscular mycorrhizal fungi on a fallow enriching tree (*Macaranga denticulata*). Fungal Diversity: 189 - 199.
- Youpensuk, S., S. Lordkeaw and B. Rerkasem. 2006. Comparing the effect of arbuscular mycorrhizal fungi on upland rice and *Macaranga denticulata* in soil with different levels of acidity. ScienceAsia. 32: 121 - 126.
- Zhu, Y.G., A.S. Laidlaw, P. Christie and M.E.R. Hammond. 2000. The specific of arbuscular mycorrhizal fungi in perennial ryegrass-white clover pasture. Agriculture, Ecosystems and Environment. 77: 211 - 218.
- Zhu, Y.G., S.E. Smith, A.R. Barritt and F.A. Smith. 2001. Phosphorus (P) efficiencies and mycorrhizal responsiveness of old and modern wheat cultivars. Plant and Soil. 237: 249 - 255.