



REFERENCES

- Abbasi, M.K., M. Manzoor, M.M. Tahir. 2010. Efficiency of Rhizobium inoculation and P fertilization in enhancing nodulation, seed yield, and phosphorus use efficiency by field grown soybean under hilly region of Rawalakot Azad Jammu and Kashmir, Pakistan. *Journal of Plant Nutrition* 33 (7): 1080-1102.
- Alves, T.M., I.V. Macrae, R.L. Koch. 2015. Soybean aphid (Hemiptera: Aphididae) affects soybean spectral reflectance. *Journal of Economic Entomology* 108 (6): 2655-2664.
- Babikova, Z., L. Gilbert, K.C. Randall, T.J.A. Bruce, J.A. Pickett, D. Johnson. 2014b. Increasing phosphorus supply is not the mechanism by which arbuscular mycorrhiza increase attractiveness of bean (*Vicia faba*) to aphids. *Journal of Experimental Botany* 65 (18): 5231-5241.
- Babikova, Z., L. Gilbert, T. Bruce, S.Y. Dewhurst, J.A. Pickett, D. Johnson. 2014a. Arbuscular mycorrhizal fungi and aphids interact by changing host plant quality and volatile emission. *Functional Ecology* 28 (2): 375-385.
- Bamisile, B.S., C.K. Dash, K.S. Akutse, R. Keppanan, L. Wang. 2018. Fungal endophytes: Beyond Herbivore Management. *Frontiers in Microbiology* 9 (544):1-11.
- Barto, E.K., and M.C. Rilig. 2010. Does herbivory really suppress mycorrhiza? A meta-analysis. *Journal of Ecology* 98 (4): 745-753.
- Bernaola, L., C. Marco, R.W. Schneider, M. Stout. 2018. Belowground inoculation with Arbuscular Mycorrhizal Fungi increases local and systemic susceptibility of rice plants to different pest organisms. *Frontiers in Plant Science* 9 (747): 1-16.
- Catangui, M.A., E.A. Beckendorf, and W.E. Riedell. 2009. Soybean aphid population dynamics, soybean yield loss, and development of stage-specific economy injury levels. *Agronomy Journal* 101 (5): 1080-1092.
- Charters, M.D., S.M. Sait, K.J. Field. 2020. Aphid herbivory drives asymmetry in carbon for nutrient exchange between plants and an arbuscular mycorrhizal fungus. *Current Biology* 30 (10): 1801-1808.
- Chen, M., M. Aroto, L. Borghi, E. Nouri, D. Reinhardt. 2018. Beneficial services of Arbuscular Mycorrhizal Fungi – From Ecology to Application. *Front Plant Science* 9 (1270): 1-14.
- Chuang, C.C., Y.L. Kuo, C.C. Chao, W.L. Chao. 2007. Solubilization of inorganic phosphates and plant growth promotion by *Aspergillus niger*. *Biology and Fertility of Soils* 45 (5): 575-584.
- Clifton, E.H., S.T. Jaronski, B.S. Coates, E.W. Hodgson, A.J. Gassmann. 2018. Effects of endophytic entomopathogenic fungi on soybean aphid and identification of *Metarhizium* isolates from agricultural fields. *Plos One* 13 (3): 1-19.
- Domka, A.M., P. Rozpadek, and K. Turnau. 2019. Are fungal endophytes merely mycorrhizal copycats? The role of fungal endophytes in the adaptation of plants to metal toxicity. *Frontiers in Microbiology* 10 (371): 1-16.



- Fried, H.G., S. Narayanan, and B. Fallen. 2018. Characterization of a soybean (*Glycine max* L. Merr.) germplasm collection for root traits. *Plos One* 13 (7): 1-19.
- Gange, A.C., E. Bower, and V.K. Brown. 2002. Differential effects of insect herbivory on arbuscular mycorrhizal colonization. *Oecologia* 131 (1): 103-112.
- Gange, A.C., E. Bower, and V.K. Brown. 1999. Positive effects of an arbuscular mycorrhizal fungus on aphid life history traits. *Oecologia* 120 (1): 123-131.
- Garzo, E., E. Rizzo, A. Fereres, S.K. Gomez. 2020. High levels of arbuscular mycorrhizal fungus colonization on *Medicago truncatula* reduces plant suitability as a host for pea aphids (*Acyrtosiphon pisum*). *Insect Science* 27 (1): 99-112.
- Giovannetti, M., and B. Mosse. 1980. An evolution of techniques for measuring vesicular arbuscular mycorrhizal infections in roots. *New Phytologist* 84 (3): 489-500.
- Guerrieri, E., and M.C. Digilio. 2008. Aphid-plant interactions: a review. *Journal of Plant Interactions* 3 (4): 223-232.
- Guo, S.M., L.G. Kamphuis, L.L. Gao, J.P. Klingler, J. Lichtenzveig, O. Edwards, K.B. Singh. 2012. Identification of distinct quantitative trait loci associated with defence against the closely related aphids *Acyrtosiphon pisum* and *A. kondoi* in *Medicago truncatula*. *Journal of Experimental Botany* 63 (10): 1-10.
- Jaber, L.R., and S. Vidal. 2009. Interactions between an endophytic fungus, aphids and extrafloral nectaries: do endophytes induce extrafloral-mediated defences in *Vicia faba*?. *Functional Ecology* 23 (4): 707-714.
- Janouskova, M., K. Krak, M. Vosatka, D. Puschel, H. Storchova. 2017. Inoculation effects on root-colonizing arbuscular mycorrhizal fungal communities spread beyond directly inoculated plants. *Plos One* 12 (7): 1-21.
- Maulana, A.F. 2018. Characterization of arbuscular mycorrhizal and endophytic fungi isolated from forest sands in Indonesia and its effect on plant growth. Dissertation. The United Graduate School of Agricultural Science. Iwate University. (Not Published)
- Mishra, V., W. Ellouze, and R.J. Howard. 2018. Utility of arbuscular mycorrhizal fungi for improved production and disease mitigation in organic and hydroponic greenhouse crops. *Journal of Horticulture* 5 (3): 1-10.
- Mycobank. (2020, 06 25). Search on: Mycobank. Retrieved from Mycobank: <http://www.mycobank.org/name/Rhizophagus%20clarus&Lang=Eng>
- Newman, E.I. 1966. A method of estimating the total length of root in a sample. *Journal of Applied Ecology* 3 (1): 139-145.
- Rodriguez, R.J., J.F White, A.E. Arnold, R.S. Redman. 2009. Fungal endophytes: diversity and functional roles. *New Phytologist* 182 (2): 1-17.
- Roger, A., M. Gétaz, S. Rasmann, I.R. Sanders. 2013. Identity and combinations of arbuscular mycorrhizal fungal isolates influence plant resistance and insect preference. *Ecological Entomology* 38 (4): 330-338.



Rosyidah, U. 2018. Isolation of mycorrhizal fungi and endophytic fungi from opencast mining land in Indonesia and their effect on plant growth. Report of student exchange program in Yamagata University (Not Published).

Rutledge, C.E., and J.O. Robert. 2006. Soybean plant stage and population growth of soybean aphid. *Journal of Economic Entomology* 99 (1): 60-66.

Smaling, E.M.A., R. Roscoe, J.P. Lesschen, A.F. Bouwman, E. Comunello. 2008. From forest to waste: Assessment of the Brazilian soybean chain, using nitrogen as a marker. *Agriculture Ecosystems and Environment* 128 (3): 185-197.

Tawaraya, K., S. Shinpei, K. Ueda, H. Murayama, T. Nishizawa, T. Toyomasu, T. Murayama, S. Sato, T. Wagatsuma, H. Yasuda. 2012. Leaf herbivory by *Spodoptera litura* increases arbuscular mycorrhizal colonization in roots of soybean. *Soil Science and Plant Nutrition* 58 (4): 445-449.

Vestergard, M., L. Bjornlund, and S. Christensen. 2004. Aphid effects on rhizosphere microorganisms and microfauna depend more on barley growth phase than on soil fertilization. *Oecologia* 141 (1): 84-93.

Widariyanto, R., M.I. Pinem, F. Zahara. 2017. Pathogenicity of some entomopathogen's fungus (*Lecanicillium lecanii*, *Metarhizium anisopliae*, and *Beauveria bassiana* to *Aphid glycines* on soybean. *Jurnal Agroekoteknologi FP USU* 5 (1): 8-16.

Wilkinson, T.D.J., J.P. Miranda, J. Ferrari, S.E. Hartley, A. Hodge. 2019. Aphids influence soil fungal communities in conventional agricultural systems. *Frontiers in Plant Science* 10 (895): 1-13.

Wilkinson, T.L., and A.E. Douglas. 2003. Phloem amino acids and the host plant range of the polyphagous aphid, *Aphis fabae*. *The Netherlands Entomological Society* 106 (2): 103-113.

Yan, L., J. Zhu, X. Zhao, J. Shi, C. Jiang, D. Shao. 2019. Beneficial effects of endophytic fungi colonization on plants. *Applied Microbiology and Biotechnology* 103 (8): 3327-3340.