

ANOWAR ISLAM

Department of Plant and Environmental Sciences and Department of Extension Plant Sciences
New Mexico State University
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Education and Training:

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| University of Sydney, Australia | Agronomy | Ph.D. 2003 |
| Institute of Postgraduate Studies in Agriculture, Bangladesh | Agronomy | M.Sc. 1996 |
| Bangladesh Agricultural University | Agriculture | B.Sc. 1990 |
| Postdoctoral Training; Noble Foundation, OK, USA | Agronomy | 2005-2008 |
| Postdoctoral Training; University of Sydney, Australia | Agronomy | 2004-2005 |
| Postdoctoral Training; Miyazaki University, Japan | Agronomy | 2002-2004 |

Research and Professional Experience:

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| 2023-present | Department Head and Professor, Department of Plant and Environmental Sciences and Department of Extension Plant Sciences, New Mexico State University, Las Cruces, NM. |
| 2023-present | Adjunct Professor, Department of Plant Sciences, University of Wyoming, Laramie, WY. |
| 2019-2023 | Professor and Forage Agroecologist, Department of Plant Sciences, University of Wyoming, Laramie, WY. |
| 2014-2019 | Associate Professor and Forage Agroecologist, Department of Plant Sciences, University of Wyoming, Laramie, WY. |
| 2008-2014 | Assistant Professor and Forage Agroecologist, Department of Plant Sciences, University of Wyoming, Laramie, WY. |
| 2005-2008 | Postdoctoral Researcher, Forage Agronomist, Noble Foundation, OK. |
| 2004-2005 | Postdoctoral Fellow, Agronomy Dept., University of Sydney, Australia. |
| 2002-2004 | Postdoctoral Fellow, Grassland Ecology & Systems, Univ. Miyazaki, Japan. |
| 1998-2002 | Research Fellow, Department of Primary Industries, NSW, Australia. |
| 1996-1998 | Teaching Assistant, Crop Sciences Dept., University of Sydney, Australia. |
| 1990-1996 | Research Scientist, Bangladesh Agricultural Research Institute, Dhaka. |
| 1990 | Junior Executive Officer, Bangladesh Agricultural Development Corporation. |

Teaching Experience:

- Forage Crop Science (PLNT 3200; PLNT 4700/5700)
- Internship in Agroecology (AECL 4930)
- Research in Crops (PLNT 5600)
- Research Apprenticeship (AECL 4920)
- Thesis Research (PLNT 5960)
- Dissertation Research (PLNT 5980)

Synergistic Activities:

- Committee chair of 14 and member of 15 graduate student committees since 2008.
- President and President Elect, Western Society of Crop Science, 2019-2023.
- Associate Editor, *Agronomy Journal*, 2018-2021.
- Guest Editor, *Sustainability*, Special Issue (an International Journal), Agroecology: Principles and Application for Efficient and Sustainable Agricultural Production, 2017-2019.
- Received *Outstanding Research Achievement Award* of Wyoming Agricultural Experiment Station, 2021
- Received *Outstanding Educator Award* in the College of Agriculture and Natural Resources, University of Wyoming, 2017.

- Visiting Professor, Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 2016.
- Visiting Professor and Fellowship Award, Hokkaido University, Japan, 2015.
- Search Committee Chair (2015-16), Assistant Professor (Agronomist/Irrigation Specialist).
- NIFA Foundational Knowledge of Agricultural Production Systems Panel Reviewer, Washington DC, September 12-14, 2017; August 26-28, 2020 (Adhoc Panel Reviewer).
- NIFA Climate Change Panel Reviewer, Washington DC, July 22-25, 2013.

Grants Received (Reported only selected grants):

Successful: Over \$14 million as PI and Co-PI (reported only selected projects).

USDA Specialty Crop Block Grant Program–Farm Bill. 2023-2025. **Islam, M.A.** Evaluation of Peas in Rotation with Annual Crop for Monitoring Productivity and Soil Health. \$100,000.

USDA-NIFA AFRI Sustainable Agricultural Systems (SAS). 2021-2026. Picasso, V., Berti, M., **Islam, M.A.**, et al. Fostering Resilience and Ecosystem Services in Landscapes by Integrating Diverse Perennial Circular Systems. \$10,000,000.

US Department of Energy and Navarro Research and Engineering. 2021-2024. **Islam, M.A.**, Kastens, M., McGraw, J., Holbrook, D., and Heward, T. Regenerate Grazing for Carbon Sequestration in Shirley Basin, Wyoming. \$150,000.

Hatch Multistate, Wyoming Agricultural Experiment Station Competitive Grants Program. 2021. **Islam, M.A.** Upgrading Near Infrared Reflectance Spectroscopy (NIRS) for Forage Quality Analysis. \$9,295.

USDA Specialty Crop Block Grant Program – Farm Bill (SCBGP-FB), Wyoming Department of Agriculture. 2021-2024. **Islam, M.A.** Forage pea production in rotation with papa criolla potato. \$46,985.

USDA-NIFA ASAFS Program. 2019-2021. Afshar, R.K., **Islam, M.A.**, et al. Increasing yield, quality, and economy of alfalfa hay through grass species selection and planting configuration. \$457,339.

Specialty Crop Block Grant Program–Farm Bill (SCBGP-FB), USDA WY Department of Agriculture. 2019-2021. **Islam, M.A.** Evaluation of Yacon in Rotation with Fenugreek in Wyoming Environments. \$46,499.

USDA NIFA Crop Protection and Pest Management. 2018-2022. Jabbour, R., **Islam, M.A.**, Rand, T.A., Peairs, F., Ritten, J., and Lee, B. Integration of early harvest with biological control for sustainable alfalfa production. \$324,998.

Energy GA Fellowships, UW. 2018-2020. **Islam, M.A.** Reclamation of disturbed areas used by gas industries in Wyoming by using some promising grass and legume genotypes. \$55,008.

Specialty Crop Block Grant Program – Farm Bill (SCBGP-FB), USDA Wyoming Department of Agriculture. 2017-2019. **Islam, M.A.** Evaluation of chickpeas in Wyoming Environments. \$24,500.

USDA-NIFA Alfalfa and Forage Research Program. 2016-2019. **Islam, M.A.**, Burmmer, J., and Min, D. The silent decline in soil potassium levels and its effect on alfalfa productivity in the central and western US. \$250,000.

Publications (Reported only selected publications):

Peer-Reviewed Journal Articles

Baidoo, M. and **Islam, M.A.** 2024. Potassium and harvest time interaction effect on alfalfa production and economic benefits. *Agronomy Journal (In press)*.

Carr, P.M., Bell, J.M., Boss, D.L., DeLaune, P., Eberly, J.O., Edwards, L., Fryer, H., Graham, C., Holman, J., **Islam, M.A.**, Liebig, M., Miller, P.R., Obour, A., Xue, Q. 2021. Annual forage impacts on dryland wheat farming in the Great Plains. *Agronomy Journal*. doi. 10.1002/agj2.20513.

- Khatiwada, B., Acharya, S.N., Larney, F.J., Lupwayi, N.Z., Smith, E.G., **Islam, M.A.**, Thomas, J.E., and Poudel, H.P. 2020. Pasture rejuvenation using sainfoin and cicer milkvetch in western Canada. *Agronomy Journal*. doi: 10.1002/agj2.20466.
- Khatiwada, B., Acharya, S.N., Larney, F.J., Lupwayi, N.Z., Smith, E.G., **Islam, M.A.**, and Thomas, J.E. 2020. Benefits of mixed grass–legume pastures and pasture rejuvenation using bloat-free legumes in western Canada: a review. *Canadian Journal of Plant Science*. 100:463-476. doi.org/10.1139/cjps-2019-0212.
- Nilahyane, A., **Islam, M.A.**, Mesbah, A.O., Herbert, S.K., and Garcia y Garcia, A. 2020. Growth, water productivity, nutritive value, and physiology responses of silage corn to water stress. *Agronomy Journal*. <https://doi.org/10.1002/agj2.20015>.
- Islam, M.A.** and Adjesiwor, A.T. 2019. Nitrogen fertilization in tall fescue: Productivity, agronomic efficiency and relative profitability. *Grassland Science*. 00:1–7. <https://doi.org/10.1111/grs.12261>.
- Homer, A., **Islam, M.A.**, Krall, J.M., Nachtman, J.J., and Goose, R.W. 2019. Registration of ‘WyoWinter’ Feed Pea for the US Central Great Plains. *Journal of Plant Registrations*. 13:128-133. doi:10.3198/jpr2018.07.0047crc.
- Aryal, P. and **Islam, M.A.** 2018. Effect of forage kochia on seedling growth of cheatgrass (*Bromus tectorum*) and perennial grasses. *Invasive Plant Science and Management*. 11:201–207. doi: 10.1017/inp.2018.27.
- Aryal, P. and **Islam, M.A.** 2018. Establishment of forage kochia in seeding mixtures with perennial grasses. *Grassland Science*. 00:1–8. doi.org/10.1111/grs.12228.
- Islam, M.A.** and Ashilenje, D. 2018. Diversified forage cropping systems and their implications on resilience and productivity. *Sustainability*. 10, 3920; doi:10.3390/su10113920.
- Nilahyane, A., **Islam, M.A.**, Mesbah, A.O., and Garcia y Garcia, A. 2018. Effect of irrigation and nitrogen fertilization strategies on silage corn grown in semi-arid conditions. *Agronomy*. 8, 208; doi:10.3390/agronomy8100208.
- Dhakal, D. and **Islam, M.A.** 2018. Grass-legume mixtures for improved soil health in cultivated agroecosystem. *Sustainability*. 10, 2718; doi:10.3390/su10082718.
- Nilahyane, A., **Islam, M.A.**, Mesbah, A.O., and Garcia y Garcia, A. 2018. Evaluation of silage corn yield gap: An approach for sustainable production in the semi-arid region of USA. *Sustainability*. 10, 2523; doi:10.3390/su10072523.
- Tracy, B.F., Foster, J.L., Butler, T.J., **Islam, M.A.**, Toledo, D., and Vendramini, J.M.B. 2018. Resilience in Forage and Grazinglands. *Crop Science*. 58:1–12. doi: 10.2135/cropsci2017.05.0317.
- Adjesiwor, A.T., **Islam, M.A.**, Zheljzkov, V.D., Ritten, J.P., and Garcia y Garcia, A. 2017. Grass-legume seed mass ratios and nitrogen rates affect forage accumulation, nutritive value, and profitability. *Crop Science*. 57:1-13. doi: 10.2135/cropsci2016.09.0776.
- Islam, M.A.**, Obour, A.K., Rule, D., Bandara, M., and Acharya, S. 2017. Forage and seed production potential, nutritive value, and fatty acid profile of fenugreek. *Crop Science*. 57:1764–1772. doi: 10.2135/cropsci2016.08.0685.
- Adjesiwor, A.T. and **Islam, M.A.** 2016. Rising nitrogen fertilizer prices and projected increase in maize ethanol production: the future of forage production and the potential of legumes in forage production systems. *Grassland Science*. 62:203-212. doi: 10.1111/grs.12130.
- Tracy, B.F., Albrecht, K., Flores, J., Hall, M., **Islam, M.A.**, Jones G., Lamp, W., MacAdam, J.W., Skinner, H., and Teutsch, C. 2016. Evaluation of alfalfa-tall fescue mixtures across multiple environments. *Crop Science*. 56:2026-2034. doi: 10.2135/cropsci2015.09.0553.

- Sintim, H.Y., Adjesiwor, A.T., Zheljaskov, V.D., **Islam, M.A.**, and Obour, A.K. 2016. Nitrogen application in sainfoin under rain-fed conditions in Wyoming: Productivity and cost implications. *Agronomy Journal*. 108:294–300. doi: 10.2134/agronj2015.0317.
- Islam, M.A.**, Obour, A.K., Saha, M.C., Nachtman, J.J., Cecil, W.K., and Baumgartner, R.E. 2013. Grain yield, forage yield, and nutritive value of dual-purpose small grains in the Central High Plains of the USA. *Crop Management*. doi: 10.1094/CM-2012-0154-RS.

Refereed Bulletins, Proceedings, and Technical Publications:

- Islam, M.A.** and Baidoo, M. 2022. Alfalfa response to phosphorus and potassium in association with calcium and magnesium and harvest time. 2022 World Alfalfa Congress, November 14-17, 2022, San Diego, California. <https://calhaysymposium.com/>.
- Islam, M.A.** and Ashilenje, D. 2022. Comparison of Grass-legume Mixtures and Nitrogen Effects on Trace Gas Emission and Soil Microbial Biomass. The 8th International Greenhouse Gas & Animal Agriculture Conference, July 31-August 5, 2022, Glasgow, UK. <https://www.22wcss.org>.
- Islam, M.A.** and Ashilenje, D. 2022. Grass-legume Mixtures and Nitrogen Fertilizers Can Affect Trace Gas Emission and Soil Microbial Biomass. The 8th International Greenhouse Gas & Animal Agriculture Conference, June 5-9, 2022, Orlando, Florida. <https://conference.ifas.ufl.edu/ggaa/>.
- Islam, M.A.** and Ashilenje, D. 2021. Grass-Legume Mixtures for Diversified and Profitable Forage Production. Proceedings of the XXIV International Grassland Congress/XI International Rangeland Congress (Virtual), October 25-29, 2021, Nairobi, Kenya. <https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=4238&context=igc>.
- Dhakal, D. and **Islam, M.A.** 2018. Grass-legume mixtures can maximize farm profits in Wyoming. University of Wyoming Extension Bulletin B-1329, Ed. S.L. Miller, pp.1-4, September 2018. University of Wyoming, Laramie. Available at: http://www.wyoextension.org/agpubs/pubs/b-1329farm_profits_web.pdf.
- Islam, M.A.**, Baidoo, M., Brummer, J., and Min, D. 2018. Effects of potassium, cultivar, and harvest time on sustainable alfalfa production. Proceedings of the 2nd World Alfalfa Congress, November 11-14, 2018, Cordoba, Argentina.

Refereed Book Chapter:

- Islam, M.A.** and Adjesiwor, A.T. 2023. Forage Crops and Their Photosynthesis. *In: Handbook of Photosynthesis*, 4th Edition (M. Pessaraki, Ed.), CRC Press, Taylor & Francis Publishing Company, Florida (*In press*).
- Islam, M.A.** and Baidoo, M.M. 2021. Effect of Potassium on Growth and Physiology of Alfalfa. *In: Handbook of Plant and Crop Physiology*, 4th Edition (M. Pessaraki, Ed.). pp. 29-39. CRC Press, Taylor & Francis Publishing Company, Florida.
- Islam, M.A.** and Adjesiwor, A. T. 2019. Moisture Stress and its Effects on Forage Production Systems. *In: Handbook of Plant and Crop Stress*, 4th Edition (M. Pessaraki, Ed.). CRC Press, Taylor & Francis Publishing Company, Florida.
- Islam, M.A.** and Nilahyane, A. 2019. Water Stress Effects on Growth and Physiology of Corn. *In: Handbook of Plant and Crop Stress*, 4th Edition (M. Pessaraki, Ed.). CRC Press, Taylor & Francis Publishing Company, Florida.
- Islam, M.A.** and Ashilenje, D. 2018. Understanding species traits and biodiversity indices to solve problems associated with legume persistence in cropping systems. *In: Plant Competition in Cropping Systems*, (D. Dunea, Ed.). pp. 23-36. InTechOpen, Rijeka, Croatia. DOI: 10.5772/intechopen.76523.