

**Albert T. Adjesiwor**

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**Education:**

2015 – 2018: Ph.D. Plant Sciences (Minor in Statistics), University of Wyoming, Laramie WY

2013 – 2015: M.S. Agronomy, University of Wyoming, Laramie, WY

2008 – 2012: B.Sc. Agriculture (Honors), Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

**Professional Experience:**

2020 – present: Assistant Professor & Extension Specialist, University of Idaho, Kimberly, ID

- Weed management in sugarbeet, dry beans, corn, and small grains
- Plant growth regulators for weed seedhead suppression
- Herbicide resistance management
- Cover crops for weed control

2018 – 2020: Postdoctoral Research Associate, University of Wyoming, Laramie, WY

- Assessing the effect of relative humidity on the volatilization of dicamba.
- Collaborated with weed scientists in CO, MT, NE, and WY to quantify the economic implications of herbicide-resistant weed management in glyphosate-resistant sugarbeet.
- Co-developed the Herbicide Resistance Risk Calculator (<http://bit.ly/HerbRisk>).
- Assessing the effect of flowering timing and herbicide susceptibility in common lambsquarters.
- Assessed the interaction effect of reflected light quality and moisture stress on sugarbeet growth and development.
- Evaluated Ray and factorial designs for confirming the synergistic effect of herbicides using mesotrione plus atrazine on common lambsquarters.
- Assessed time to flowering in glyphosate-resistant kochia biotypes from Hays KS and Worland WY.
- Evaluated the potential of red-light exposure for common lambsquarters seedbank management.
- Pesticide applications using field pesticide sprayers and spray chambers.
- Statistical data analyses using R statistical language and Statistical Analysis System (SAS).
- Mentoring undergraduate and graduate students and supervising graduate student projects.

2015 – 2018: Graduate Assistant, University of Wyoming, Laramie, WY

- Assessed effect of weed presence on Phenmedipham and Desmedipham injury in sugarbeet.
- Determined the effect of reflected light quality on the critical period of weed removal in sugarbeet.
- Assessed the effect of reflected light quality on growth and photosynthate partitioning in sugarbeet.
- Evaluated herbicide options for creeping bellflower (*Campanula rapunculoides*) control.
- Evaluated the synergistic effect of a glyphosate and proline fungicide on glyphosate-resistant kochia.

- Sugarbeet non-structural carbohydrate analysis using enzymatic assays and anthrone reagent methods.
- Determined the relative toxicities of selected organic and conventional herbicides to large nightcrawlers (*Lumbricus terrestris*).
- Supervised undergraduate interns and student projects

2013 – 2015: Graduate Assistant, University of Wyoming, Laramie, WY

- Determined optimal seed mass ratios for improved productivity and profitability of irrigated grass-legume mixtures.
- Assessed cultivar selection and nutrient management in rainfed sainfoin (*Onobrychis viciifolia*).
- Quantified soil water use in forage grasses, legumes, and grass-legume mixtures using a neutron probe.
- Conducted forage nutritive value analysis using Near Infrared Reflectance Spectroscopy.
- Analyzed soil nitrogen using Biotek and soil microbial biomass using Phospholipid Fatty Acid Analysis.

2012 – 2013: Teaching Assistant (National Service), Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

- Prepared lecture notes, tutored undergraduate students, and proctored exams.
- Laboratory set-up for hands-on lab activities and graded soil science laboratory reports
- Assisted in supervising undergraduate research projects.

### **Teaching:**

Spring 2020: Co-instructor, PLNT 5790: Applied Statistics in Plant Sciences (online), University of Wyoming, Laramie WY

Spring 2020: Co-instructor/host, PLNT 5820: Graduate Seminar, University of Wyoming, Laramie WY

Fall 2019: Co-instructor, AECL 3030: Ecology of Plant Protection, University of Wyoming, Laramie WY

2018 – 2019: Panel discussion on “Agriculture in Africa”, AGEL1000: Agroecology, University of Wyoming, Laramie WY

2015 – 2019: Teaching assistant, PLNT 4070/5070: Weed Science and Technology, University of Wyoming, Laramie WY

2012 – 2013: Teaching Assistant for Arable Crop Production & Management (CS 157), Physiology of Crop Plants (CS 353), and Arable Crop Production (CS 356), Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

### **Selected Extension/Outreach Activities:**

2020: Integrated weed management in Wyoming: ecology, herbicides, and an interactive Web App. Wyoming Weed Management Association annual meeting, Casper, WY

2017: Herbicide Mixtures, Pesticide applicator training, Laramie WY

2016: Glyphosate-resistant kochia (*Kochia scoparia* (L.) Schrad) update”. Wyoming Weed Management Association annual meeting, Casper, WY

2015: Effect of reflected light quality on weed removal timing in sugarbeet, Annual Field Day, University of Wyoming Laramie Research and Extension Center, Laramie WY

2015: Effect of reflected light quality on removal timing in sugarbeet, Annual Field Day, University of Wyoming Sustainable Agriculture Research and Extension Center, Laramie WY

2014: Irrigated grass-legume mixtures, Annual Field Day, University of Wyoming Sheridan Research and Extension Center, Sheridan WY

### **Research Grants:**

#### ***Awarded***

2014: Western Sustainable Agriculture Research and Education Grant (GW15-020; \$24,998) “Economic and environmental sustainability of irrigated grass-legume mixtures.”

#### ***Unsuccessful***

2018: USDA NIFA, Agriculture and Food Research Initiative (AFRI) Foundational Knowledge of Agricultural Production Systems. “Should We Harvest the Weeds? Toward a Mechanistic Understanding of Biodiversity Impacts on Forage Crop Productivity and Nutritive Value.”

2015: UW College of Agriculture and Natural Resources AES Competitive Grants Program. “Economic and Environmental Sustainability of Replacing Nitrogen-Fertilized Grasses with Grass-Legume Mixtures under Irrigation.”

#### ***Contributed Projects***

2018 – 2020: Weed Biology, Ecology, and Management in Sugarbeet (\$20,500). Western Sugar Cooperative

2016 – 2020: Systems Analysis of Shade-Avoidance Responses as a Mechanism of Crop Yield Loss Due to Weeds (\$500,000). USDA National Institute of Food and Agriculture.

### **Publications:**

#### ***Refereed***

Islam MA, **Adjesiwor AT** (2020) Nitrogen application in tall fescue: productivity, agronomic efficiency, and relative profitability. *Grassl Sci.* 66:67–73. <https://doi.org/10.1111/grs.12261>

**Adjesiwor AT**, Claypool DA, Kniss AR (2019) Dry bean response to preemergence application of flumioxazin. *Weed Technol.* doi:10.1017/wet.2019.87

Sbatella GM, **Adjesiwor AT**, Kniss AR, Stahlman PW, Westra P, Moechnig M, Wilson RG (2019) Herbicide options for glyphosate-resistant kochia (*Bassia scoparia*) management in the Great Plains. *Weed Technol.* doi:10.1017/wet.2019.48

Schambow TJ, **Adjesiwor AT**, Lorent L, Kniss AR (2019) Shade Avoidance Cues Reduce Beta vulgaris Growth. *Weed Sci.* *Weed Sci.* 67:311-317 doi: 10.1017/wsc.2019.2

Coburn C W, **Adjesiwor AT**, Kniss AR (2018) Creeping bellflower response to glyphosate and synthetic auxin herbicides. *HortTech.* 28:6-9. DOI: 10.21273/HORTTECH03853-17

**Adjesiwor AT**, Islam MA, Zheljzakov V, Ritten JP, Garcia y Garcia A (2017) Grass-legume seed mass ratios and nitrogen rates affect forage accumulation, nutritive value, and profitability. *Crop Sci.* 57:1–13. DOI: 10.2135/cropsci2016.09.0776

- Adjesiwor AT**, Islam MA (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. *Grassl Sci* 62: 203–212. DOI: 10.1111/grs.12130
- Sintim HY, **Adjesiwor AT**, Zheljzkov VD, Islam MA, Obour AK (2016) Nitrogen application in sainfoin under rain-fed conditions in Wyoming: Productivity and Cost Implications. *Agron J* 108:294-300. DOI:10.2134/agronj2015.0317

### ***Book Chapters***

- Islam MA, **Adjesiwor AT**. (2019) Moisture Stress and its Effects on Forage Production Systems. Pages 703-712 in: Pessarakli M ed. *Handbook of Plant and Crop Stress*, 4<sup>th</sup> Edition. CRC Press, New York, United States
- Islam MA, **Adjesiwor AT** (2018) Nitrogen fixation and transfer in agricultural production systems. Pages 95-110 in: Khan A, Fahad S ed. *Nitrogen in Agriculture – Updates*. Rijeka, Croatia: InTechOpen
- Islam MA, **Adjesiwor AT** (2016) Forage crops and their photosynthesis. Pages 465-474 in: Pessarakli M ed. *Handbook of Photosynthesis*, 3<sup>rd</sup> Edition. CRC Press, New York, United States

### **Selected Extension Publications:**

- Kniss AR, **Adjesiwor AT**, Unverzagt JC, Rapp RE (2019) Weed Management in Sainfoin. University of Wyoming Extension. B-1333. 7 p.
- Adjesiwor AT**, Islam MA (2018). Birdsfoot trefoil: Establishment and management as monocultures and mixtures in Wyoming. University of Wyoming Extension, B-1321. 7 p.
- Adjesiwor AT**, Islam MA, Jeliakzov V, Garcia y Garcia A, Ritten J (2014) Productivity and profitability of irrigated grass-legume mixture. *Fields Day Bulletin*, University of Wyoming Sheridan Research and Extension Center, pp 123-124.

### **Conference Abstracts and Papers:**

- Adjesiwor AT**, Kniss AR (2020) Light Quality and Weed Seed Germination: What We Have Learnt and the Practical Application Potential. WSSA Annual Meeting, 2020. Maui, Hawaii
- Ballenger JG, **Adjesiwor AT**, Claypool DA, Kniss AR (2020) Weighing the mechanisms of yield loss: from the Buckle to the Field. WSSA Annual Meeting, 2020. Maui, Hawaii
- Kniss AR, **Adjesiwor AT**, Lawrence NC (2020) Herbicide Diversity Calculator: Interactive Web App that Estimates the Risk of Herbicide Resistance (<http://bit.ly/HerbRisk>). WSSA Annual Meeting, 2020. Maui, Hawaii
- Adjesiwor AT**, Lawrence NC, Jha P, Gaines T, Westra E, Kniss AR (2019) Economic Implications of Herbicide Resistant Weed Management in Glyphosate-Resistant Sugarbeet. WSWS Annual Meeting, 2019. Denver, Colorado
- Asay JM, Mosqueda EG, **Adjesiwor AT**, Kniss AR (2019) Effect of Weed Presence on Sugarbeet Injury with Phenmedipham and Desmedipham. WSWS Annual Meeting, 2019. Denver, Colorado
- Adjesiwor AT**, Kniss AR (2019) Weed Emergence Timing and Shade Avoidance Responses in Sugarbeet. WSWS Annual Meeting, 2019. Denver, Colorado

- Adjesiwor AT**, Kniss AR (2019) Early Season Exposure to Weed Reflected Light has Season Long Implications for Sugarbeet. WSSA Annual Meeting, 2019. New Orleans, Louisiana
- Adjesiwor AT**, Lawrence NC, Jha P, Gaines T, Westra E, Kniss AR (2019) Economic Implications of Herbicide Resistant Weed Management in Glyphosate-Resistant Sugarbeet. WSSA Annual Meeting, 2019. New Orleans, Louisiana
- Kniss AR, **Adjesiwor AT**, Lawrence NC (2019) An Interactive Web App that Estimates the Risk of Developing Herbicide Resistance. WSSA Annual Meeting, 2019. New Orleans, Louisiana
- Mosqueda EG, **Adjesiwor AT**, Kniss AR (2019) Relative toxicities of selected organic and conventional herbicides to worms. WSSA Annual Meeting, 2019. New Orleans, Louisiana
- Adjesiwor AT**, Kniss AR (2018) Shade Avoidance in Sugarbeet: Tragedy of the Commons? WSWS Annual Meeting, 2018. Anaheim, California
- Adjesiwor AT**, Kniss AR (2018) Response of *Beta vulgaris* to Reflected Light Quality. WSSA Annual Meeting, 2018. Arlington, Virginia
- Adjesiwor AT**, Kniss AR (2017) Effects of Reflected Light Quality on Growth and Photosynthate Partitioning in *Beta vulgaris*. WSWS Annual Meeting, 2017. Coeur d'Alene, Idaho
- Adjesiwor AT**, Kniss AR (2017) Kin recognition in *Beta vulgaris*. WSWS Annual Meeting, 2017. Coeur d'Alene, Idaho
- Adjesiwor AT**, Kniss AR (2017) Effects of reflected light quality on growth and yield of *Beta vulgaris*. Binn. Meeting of American Society of Sugar Beet Technologists, 2017. Greenville, South Carolina
- Adjesiwor AT**, Kniss AR (2016) Role of Shade Avoidance in Critical Period of Weed Control in *Beta vulgaris*. WSSA Annual Meeting, 2016. San Juan, Puerto Rico
- Adjesiwor AT**, Kniss AR (2016) Effects of Shade Avoidance on Growth and Yield of *Beta vulgaris*. WSSA Annual Meeting, 2016. San Juan, Puerto Rico
- Adjesiwor AT**, Kniss AR (2016) T. J. Schambow, and A. R. Kniss. Physiological Mechanisms of Shade Avoidance Response in *Beta vulgaris*. WSWS Annual Meeting, 2016. Albuquerque, New Mexico
- Adjesiwor AT**, Kniss AR (2016) Response of Light-Grown *Beta vulgaris* to Reflected Far-red Light. WSWS Annual Meeting, 2016. Albuquerque, New Mexico
- Adjesiwor, A.T.** and M.A. Islam. Grass, legumes, and grass-legume mixtures: yield, nutritive value, and soil water use. Proc. 2015 Western Alfalfa & Forage Symposium, Reno, Nevada

### **Honors, Awards, and Scholarships:**

- 2015 – 2018: Graduate Research Assistantship, University of Wyoming, Laramie WY
- 2018: First Place, Graduate Student Oral Presentation Contest, Basic Biology and Ecology section, Western Society of Weed Science (WSWS), 2018 Annual Meeting, Anaheim, California
- 2017: Gerald O. Mott Meritorious Graduate Student Award in Crop Science, Crop Science Society of America (CSSA)
- 2017: Second Place, Graduate Student Poster Presentation Contest, Basic Biology and Ecology section, Western Society of Weed Science (WSWS), 2017 Annual Meeting, Coeur d'Alene, Idaho
- 2016: Second Place Graduate Student Poster Presentation Contest, Basic Biology and Ecology section, Western Society of Weed Science (WSWS), 2016 Annual meeting, Albuquerque, New Mexico.
- 2015: University of Wyoming Dept. of Plant Sciences, Edward Ted & Susan King Lloyd Graduate Research Award (\$2100)

- 2013 – 2015: Graduate Research Assistantship, University of Wyoming, Laramie WY
- 2012: Valedictorian and Outstanding Graduating Student in the College of Agriculture and Natural Resources, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
- 2012: NUGs/Vice Chancellors Award for Outstanding Student, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
- 2011: Upper Manya Kro Rural Bank Limited Undergraduate Research Support (\$316) “Response of maize to weed management.”
- 2011: NUGs/Vice Chancellors Award for Outstanding Student, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
- 2009 – 2012: Scholarship for brilliant students, Upper Manya Kro Rural Bank Ltd, Asesewa, Ghana
- 2009 – 2012: Finatrade Foundation Scholarship, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

**Certifications:**

- 2017: Private Pesticide Application License, Wyoming Department of Agriculture
- 2014: Department of Transportation Hazardous Materials Shipping Refresher
- 2014: Nuclear Gauge Safety Training
- 2014: Pesticide Safety Training

**Leadership and Service:**

- 2019: Moderator and Discussion Section Chair, Basic Biology and Ecology section, 2019 WSWS Annual Meeting. Denver, Colorado
- 2019: Graduate Student Paper Contest Judge, 2019 WSSA Annual Meeting. New Orleans, Louisiana
- 2019: Graduate Student Poster Contest Judge, 2019 WSWS Annual Meeting. Denver, Colorado
- 2015 – 2016: Vice President, Graduates in Plant Sciences, University of Wyoming, Laramie WY
- 2011 – 2012: Secretary, Finatrade Scholars Association, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

**Journals Ad-hoc Reviewer:**

- 2019 – present: Agronomy Journal
- 2019 – present: Weed Science
- 2019 – present: Weed Technology
- 2019 – present: Canadian Journal of Plant Science
- 2019 – present: Journal of Crop Improvement
- 2019 – present: PLOS ONE
- 2019 – present: Agronomy, Publication of MDPI, Basel, Switzerland.
- 2018 – present: Grassland Science

**Professional Affiliation:**

Weed Science Society of America

Western Society of Weed Science

Crop Science Society of America

American Society of Agronomy

Gamma Sigma Delta

The Honor Society of PHI Kappa PHI