

CURRICULUM VITAE

NAME

Essah, Samuel YC

ADDRESS

0249 East Rd. 9 N, Center, CO 81125
San Luis Valley Research Center, Center, CO

PHONE

(719) 754-3594

EDUCATION

- 1999 Ph D, Alabama A & M University
- 1994 MS, University of Guelph
- 1989 BS, University of Science and Technology

ACADEMIC POSITIONS

2008 - Present Assistant Professor and Extension Specialist, Colorado State University.

OTHER POSITIONS

- 2002 - 2008 Research Scientist, Colorado State University.
- 2000 - 2002 Postdoctoral Research Associate, USDA-ARS, New England Plant, Soil, and Water Lab, Orono, ME.
- 1996 - 1999 Teaching and Research Assistant, Alabama A&M University.
- 1991 - 1995 Teaching and Research Assistant, University of Guelph, Ontario, Canada.
- 1989 - 1991 Part-time instructor, Agricultural Surveying and Mechanization, Kumasi Institute of Tropical Agriculture, Ghana.
- 1989 - 1991 Teaching and Research Assistant, University of Science and Technology, Kumasi, Ghana.

PUBLISHED WORKS

Refereed Journal Articles

- Essah, S. Y., Narasimhamoorthy, B., Zhao, L.Q., Holm, D., Greaves, J.A. (2013). Effect of harvest date on P12, total protein, TGA levels and tuber performance in potato. *American Journal of Potato Research*.
- Essah, S. Y., Davidson, R. D., Houser, A. J. (2013). Interactive effect of nitrogen rate and fungicide or compost tea application on tuber yield and quality of two potato cultivars. *Crop Research*, 46(1,2, and 3), 169-173.
- (2012). Cover crops can improve potato tuber yield and quality. *HortTechnology*, 22, 185-190.
- (2012). Sweet potato marketing and estimation of post-harvest losses in Kenya. *Crop Res*, 43, 69-75.
- (2011). Financial costs and benefits of investing in the production of *Allanblackia* spp as a tree crop. *Crop Res*, 42, 169-178.

- (2010). Promoting formal urban agricultural-based organizations in developing economies: Factors that influence choice. *Crop Res*, 39, 215-220.
- (2009). Nitrogen Management for Maximum Potato Yield, Tuber Quality, and Environmental Conservation. *Can J Plant Sci*, 84, 307-315.
- (2007). A decade of advances in cover crops. *J Soil Water Conserv*, 62, 110a-117a.
- (2004). Seed quality response of soybean to weed control timing using glyphosate. *Can J Plant Sci*, 84, 1213-1219.

Refereed Chapters in Books

- Essah, S. Y. (2012). Potato Tuber Yield, tuber size distribution and quality as impacted by preceding green manure cover crops. In Zhongqi He, Robert Larkin, and Wayne Honeycutt (Ed.), *Yes* (pp. 99-115). New York: Springer Publishing Dordrecht Heidelberg.
- Essah, S. Y., Delgado, J. A. (2009). Nitrogen management for maximum potato yield, tuber quality, and environmental conservation. In E.K. Yanful (Ed.), *Appropriate Technologies for Environmental Protection in Developing economies* (pp. 317-325). London, New York: Springer Publishing Dordrecht Heidelberg.
- (2012). *Colorado potato cultivar management*. The 2011 potato cultivar management research report to the San Luis Valley Research Center Research Committee and the Colorado Potato Administrative Committee (Area II) 54 pp.
- (2012). *Drip irrigation can reduce water use and increase tuber yield and quality in potato production*. Electronic conference proceedings (abstracts), World Potato Congress, Edinburgh, Scotland, United Kingdom.
- (2012). *How to ensure that a potash doesn't cause quality issues to sprout up* (8th ed., vol. 41, pp. 31). Monthly Provides technical information and observations from network of commercial potato growers Via e-mail and in: The potato grower magazine, www.potatogrower.com.
- (2012). *How to ensure that a potash doesn't cause quality issues to sprout up* (pp. 7). Monthly Provides technical information and observations from network of commercial potato growers Via e-mail and in: The Spudman magazine, November/December issue, www.spudman.com.
- (2012). *Influence of potassium fertilizer source and application rate on potato tuber yield and quality* (pp. 141). ASA/CSSA/SSSA Program and Abstract Book Annual Meeting, Cincinnati, OH, USA.
- (2012). *Managing phosphorus to optimize potato tuber yield in the San Luis Valley*. Monthly Provides technical information and observations from network of commercial potato growers Via e-mail and in: Spud Items, newsletter of the Colorado Potato Administrative Committee, December Issue.
- (2012). *Maximizing nitrogen use efficiency for optimum tuber yield and quality of a new Colorado potato cultivar* (vol. 89, pp. 34). *Am J Pot Res*.
- (2012). *Seed size and seed reconditioning influences field emergence, tuber yield, and quality of potato*. Electronic conference proceedings (abstracts), World Potato Congress, Edinburgh, Scotland, United Kingdom.

- (2012). *Soil amendment can improve nutrient uptake, tuber yield , and quality of potato* (pp. 27). PAA Program and Abstract Book Annual Meeting, Denver, Colorado, USA.
- (2012). *Tuber yield and quality performance of Colorado Advanced Potato Selections*. The 2011 advanced potato selections research report to the San Luis Valley Research Center Research Committee and the Colorado Potato Administrative Committee (Area II) 45 pp.
- (2011). *Colorado potato cultivar management*. The 2010 potato cultivar management research report to the San Luis Valley Research Center Research Committee and the Colorado Potato Administrative Committee (Area II) 64 pp.
- (2011). *Financial costs and benefits of investing in the production of *Allanblackia spp* as a tree crop in Ghana* (pp. 86). ASA/CSSA/SSSA October 16-19 San Antonio, TX, USA.
- (2011). *How to ensure that a potash decision doesn't cause quality issues to sprout up*. The Potato Grower Dec issue Back Page www.potato-grower.com.
- (2011). *How to ensure that a potash decision doesn't cause quality issues to sprout up*. The Spudman November/December issue www.spudman.com Pp 1.
- (2011). *Maximizing nitrogen use efficiency for optimum tuber yield and quality of a new Colorado cultivar* (pp. 21). The Potato Grower November issue www.potato-grower.com.
- (2011). *Maximizing nitrogen use efficiency for optimum tuber yield and quality of a new Colorado potato cultivar*. Annual Meetings Abstract Potato Association of America August 14-18 Wilmington, NC, USA Pp 18, 56-57.
- (2011). *Optimizing nitrogen fertilizer application and plant population for maximum tuber yield and quality in Mesa Russet, a new Colorado cultivar* (vol. 88, pp. 37). Am J Pot Res.
- (2011). *Potato breeding and cultivar development in the southwest* (vol. 88, pp. 45). Am J Pot Res.
- (2011). *Potato tuber yield, tuber size distribution, and quality as impacted by preceding green manure cover crops under irrigated conditions* (pp. 85). ASA/CSSA/SSSA October 16-19 San Antonio, TX, USA.
- (2011). *Response of potato to potassium fertilizer source and form of application in the San Luis Valley of Colorado* (vol. 88, pp. 37). Am J Pot Res.
- (2011). *Tuber yield and quality performance of Colorado Advanced Potato Selections*. The 2010 advanced potato selections research report to the San Luis Valley Research Center Research Committee and the Colorado Potato Administrative Committee (Area II) 64 pp.
- (2010). *Interactive effects of compost tea, fungicide application, and nitrogen rate on the performance of two potato cultivars* (vol. 87, pp. 121). Am J Pot Res.
- (2010). *Managing nitrogen in irrigated potato for maximum tuber yield, tuber quality, and environmental conservation*. Proceedings of the African Potato Congress December 5-9 Cape Town, South Africa.
- (2010). *Nitrogen fertilizer application and plant population management in potato* (pp. 14). The Potato Grower November.
- (2010). *Optimizing inputs for maximum potato production with a focus on P and K: Phosphorus Management* (pp. 13-Aug). Proceedings of the Southern Rocky Mountain Agricultural Conference and Trade Fair.
- (2010). *Optimizing inputs for maximum potato production with a focus on P and K: Potassium Management* (pp.

- 13-17). Proceedings of the Southern Rocky Mountain Agricultural Conference and Trade Fair.
- (2010). *Optimizing nitrogen fertilizer application and and plant population for maximum tuber yield and quality in Mesa Russet, a new Colorado cultivar* (pp. 46). Annual Meetings Abstract Potato Association of America August 15-19 Corvallis, OR, USA.
- (2010). *Potato breeding and cultivar development in the Southwest* (pp. 106). Annual Meetings Abstract Potato Association of America August 15-19 Corvallis, OR, USA.
- (2010). *Response of a Russet potato cultivar to phosphorus and seed spacing management* (vol. 87, pp. 121-122). Am J Pot Res.
- (2010). *Response of irrigated potato (*Solanum tuberosum L*) to green manure cover crops* (pp. 120). Annual Meetings Abstract ASA/CSSA/SSSA October 31- November 3 Long Beach, CA, USA.
- (2010). *Response of potato (*Solanum tuberosum L*) to seed size and seed reconditioning*. Proceedings of the African Potato Congress December 5-9 Cape Town, South Africa.
- (2010). *Response of potato to potassium fertilizer source and form of application in the San Luis Valley of Colorado* (pp. 110). Annual Meetings Abstract Potato Association of America August 15-19 Corvallis, OR, USA.
- (2010). *Tuber yield and quality of irrigated potato (*Solanum tuberosum L*) as influenced by preceding green manure cover crops*. Proceedings of the African Potato Congress December 5-9 Cape Town, South Africa.

Abstract

- Essah, S. Y., Jayanty, S. S. *Response of Russet Potato to additional late nitrogen fertilizer application*. Denver, Colorado: US Potato Board. Potato Expo
- Essah, S. Y. (in press). *Response of a new Colorado Russet potato cultivar to nitrogen application timing*. Madison, Wisconsin: American Society of Agronomy.
- Essah, S. Y. (in press). *Timing of nitrogen fertilizer application for increased N-Use efficiency in potato production..* Orono, ME: Potato Association of America. asa-csssa-sssa
- Essah, S. Y.C., Davidson, R. D. *Air injection of drip irrigated water improves potato performance in the field* (vol. 91, pp. 45). Orono, ME: American Journal of Potato Research.
- Essah, S. Y., Holm, D. G., Stromberger, M. E., Kammlade, S. M. *The influence of agromanagement on potato mineral nutrients*. Potato Association of America.
- Essah, S. Y. (2013). *Application of Soil Conditioners can Improve root Growth, increase nutrient uptake, and potato tuber yield*. Tampa, FL: American Society of Agronomy.
- Essah, S. Y. (2013). *Cover crops Alter the soil microbial community and increase potato tuber yield and quality*. Tampa, FL: American Society of Agronomy.
- Essah, S. Y. (2013). *Air Injection of Drip Irrigated Water improves potato performance in the field*. Orono, ME: Potato Association of America.
- Essah, S. Y., Davidson, R. D. (2013). *Air injection of drip irrigated water improves potato performance in the field* (pp. 1). Potato Association of America.

Essah, S. Y. (2013). *Effect of soil ammendment on potato nutrient uptake, tuber yield, and quality* (pp. 49). US Potato Board. http://s4goeshow.com/potato/annual/2013/break_out_session_presentation.cfm

Essah, S. Y. (2013). *Soil Amendment can improve nutrient uptake, tuber yield, and quality of potato* (vol. 90, pp. 130). American Journal of Potato Research.

Book Review

(2012). *Potato tuber yield, tuber size distribution, and quality as impacted by preceding green manure cover crops* (pp. 99-115). Chapter 6 In Zhongqi He, Robert Larkin, and Wayne Honeycutt (eds), *Sustainable Potato production: Global Case Studies* Springer Publishing Dordrecht Heidelberg New York London.

CE Report/Bulletin/Factsheet

Davidson, R. D., Holm, D. G., Essah, S. Y., Jayanty, S. S. (2014). *Seven cultivar management sheets*. Extension sheet for potato growers.

In-house Report

Essah, S. Y. *Colorado Potato Cultivar Management. 2012 potato cultivar management research report to the San Luis valley Research Center Committee and CPAC (Area II)* (pp. 16 pages). Monte Vista, CO: Colorado Potato Administrative Committee (Area II).

Essah, S. Y. *Tuber yield and quality performance of Colorado Advanced potato selections. The 2012 advanced potato selection research report* (pp. 24 pages). Monte Vista, CO: Colorado Potato Administrative Committee (Area II).

Magazine/Trade Publication

Essah, S. Y. (2013). *Vine Kil: Optimum timing hinges on your market* (May/June Issue ed., pp. 20-21). Spudman Magazine. www.spudman.com

Essah, S. Y. (2013). *Potassium Deficiency: Low K= poor quality potatoes* (6th ed., vol. 42, pp. 26-27). Potato Grower Magazine.

Essah, S. Y. (2013). *Sulfate of Potash: How to ensure that a potash decision doesn't cause quality issues* (pp. Page 40). Potato Grower Magazine. www.potatogrower.com

Essah, S. Y. (2013). *Colorado Potato Cultivar management* (pp. 1). Monte Vista, CO: Colorado Potato Administrative Committee (Area II).

Essah, S. Y. (2013). *Feed Your seed: Nutritional guidelines help determine 'just right' rates* (pp. 20-22). Spudman Magazine.

Essah, S. Y. (2013). *Field Management of Mercury Russet (CO99100-IRU)*. Monte Vista, CO: Spud Items, Colorado Potato administrative Committee (Area II).

Essah, S. Y., Holm, D. G., Davidson, R. D., Jayanty, S. S. (2013). *Mesa Russet: General characteristics and management*. Monte Vista, CO: Colorado Potato Administrative Committee.

Essah, S. Y. (2013). *Sulfate of Potash: Minimizing storage loss*. (pp. 54-56). Potato Grower Magazine. www.potato grower.com

Web Development

Essah, S. Y., Holm, D. G., Jayanty, S. S. (2014). *Colorado State University potato program*, <http://potatoes.colostate.edu>. Colorado State University.

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS

November 2014, "Reducing irrigation water use in potato production", Potato Ag. Conference, CPAC Area III, (Presenter) Essah, S. Y., Eaton, Colorado.

November 20, 2014, "Field management of Fortress Russet", Potato Breeding and Development Open House, San Luis Valley Research Center, (Presenter) Essah, S. Y., San Luis Valley Research Center.

October 2014, "Response of a new Colorado Russet Potato cultivar to nitrogen application timing", Annual meeting of the American Society of Agronomy, American Society of Agronomy, (Presenter) Essah, S. Y., Tampa, FL.

October 27, 2014, "Sustainable potato production", San Luis Valley Industry Workshop, Colorado State University and CPAC, (Presenter) Essah, S. Y., Adams State University, Alamosa.

October 27, 2014, "Water and Potatoes", San Luis Valley Industry Workshop, Colorado State University and CPAC, (Presenter) Essah, S. Y., Bauder, T. A., Adams State University, Alamosa.

August 2014, "Timing of nitrogen fertilizer application for increased N Use efficiency in potato production", Annual Meeting of the Potato Association of America, Potato Association of America, (Presenter) Essah, S. Y., Spokane, Washington.

July 2014, "Potato cultivar management and whole plant physiology", Program update to visiting scientists, San Luis Valley Research Center, (Presenter) Essah, S. Y., San Luis Valley Research Center.

July 2014, "Nutrisorb improves root growth, nutrient uptake, tuber yield and quality in potato production systems", Scientific Exchange to improve potato production, Innovak Global, (Presenter) Essah, S. Y., Guadalajara, Mexico.

February 4, 2014, "Timing nitrogen fertilizer application for early and medium maturity potatoes", Southern Rocky Mountain Ag conference, Colorado Potato Administrative committee (Area II), (Presenter) Essah, S. Y., Monte Vista, Colorado.

January 2014, "Response of Russet potato to additional late nitrogen fertilizer application", Potato Expo, US Potato Board and National Potato Council, (Presenter) Essah, S. Y., San Antonio, Texas.

November 4, 2013, "Application of soil conditioners can improve root growth, increase nutrient uptake, and potato tuber yield", ASA/CSSA/SSSA Annual Meeting, American Society of Agronomy, Tampa, FL.

November 4, 2013, "Cover crops alter the soil microbial community and increase potato tuber yield and quality", ASA/CSSA/SSSA Annual Meeting, American Society of Agronomy, Tampa, FL.

October 2, 2013, "Sustainably feeding a world of 9 billion people. The African Perspective", World food Security, Colorado State University, Office of International program, Fort Collins, Colorado, USA, peer-reviewed/refereed.

September 7, 2013, "The San Luis Valley Research Center and its activities", Potato Festival, CPAC, SLVRC,

Center, CO.

July 29, 2013, "Air Injection of Drip Irrigated Water improves potato performance in the field", Annual Meeting of the potato Association of America, Potato Association of America, Quebec City, Canada.

May 23, 2013, "Nutrisorb improves root growth, nutrient uptake, tuber yield, and quality in potato production systems", Integration of the State of the Art Technology Conference, Innovak Global, Tapalta, Mexico.

February 5, 2013, "Efficient nitrogen management and economics of nitrogen use in potatoes", Southern Rocky Mountain Agricultural Conference, Colorado Potato Administrative Committee (Area II), Monte Vista, Colorado, USA.

January 10, 2013, "Effect of Soil Amendment on Potato Nutrient uptake, tuber yield, and quality", Potato Expo, US Potato Board, Las Vegas, Nevada, USA.

2012, "Essah, S.Y.C. 2012. Influence of potassium fertilizer source and application rate on potato tuber yield and quality. ASA/CSSA/SSSA Annual Meeting, Cincinnati, OH, USA."

2012, "Essah, S.Y.C. 2012. Management guidelines for new Colorado potato cultivars. Southern Rocky Mountain Agricultural Conference. Monte Vista, Colorado. February 7, 2012."

2012, "Essah, S.Y.C. 2012. Nutrisorb: A soil amendment for improving potato yield and quality. Eaton, Colorado. November 13, 2012."

2012, "Essah, S.Y.C. 2012. Nutritional limitations in Colorado Potato production and nutrisorb as a solution. The Root Dynamic Convention, Puebla City, Mexico. July 11-14, 2012."

2012, "Essah, S.Y.C. 2012. Potassium fertilizer source and rate of application do influence potato tuber yield and quality. Extension Forum, Colorado State University. November 8, 2012."

2012, "Essah, S.Y.C. 2012. Soil amendment can improve nutrient uptake, tuber yield, and quality of potato. Potato Association of America Annual Meeting, Denver, Colorado, USA."

2012, "Essah, S.Y.C. 2012. Soil amendments and potato nutrient uptake. Los Mochis, Mexico."

2012, "Essah, S.Y.C., D.G. Holm, and R.D. Davidson. 2012. Potato seed size and seed reconditioning influence field emergence, tuber yield, and quality of fresh potato. Extension forum, Colorado State University, Fort Collins. November 8, 2012."

2012, "Essah, S.Y.C., Davidson, R.D., and Delgado, J.A. 2012. Drip irrigation can reduce water use and increase tuber yield and quality in potato production. World Potato Congress, Edinburgh, Scotland, United Kingdom. May, 2012.", peer-reviewed/refereed.

2012, "Essah, S.Y.C., Holm, D.G., and Davidson, R.D. 2012. Seed size and seed reconditioning influences field emergence, tuber yield, and quality of potato. World Potato Congress, Edinburgh, Scotland, United Kingdom. May, 2012.", peer-reviewed/refereed.

2012, "Vivanco, J.M. and Essah, S.Y.C. 2012. The role of Rhizosphere bacteria in plant health. Southern Rocky Mountain Agricultural Conference. Monte Vista, CO. February 7, 2012."

2011, "Essah, S.Y.C. and J.A. Delgado. Potato tuber yield, tuber size distribution, and quality as impacted by preceding green manure cover crops under irrigated conditions. American Society of Agronomy/Crop Science Society of America/Soil Science Society of America. San Antonio, TX. October 16-19, 2011.", peer-reviewed/refereed.

2011, "Essah, S.Y.C. Effect of soil amendments on potato tuber yield and quality. Presentation to the staff of a potato chemical company visiting from Mexico. December 19-20, 2011."

2011, "Essah, S.Y.C. Management and performance of new Colorado Potato cultivars for sustainable tuber yield and quality. Southern Rocky Mountain Agricultural Conference and Trade Fair. San Luis Valley. February 8, 2011."

2011, "Essah, S.Y.C. Managing nitrogen in irrigated potato for maximum N use efficiency and environmental conservation. National Potato Expo Conference. Rio All-Suite Hotel. Las Vegas, NV. January 5, 2011", peer-reviewed/refereed.

2011, "Essah, S.Y.C. Managing nitrogen in irrigated potato for maximum nitrogen use efficiency, and environmental conservation. Colorado State University (CSU) Agricultural Experiment Station annual conference and CSU Extension forum. Movember 10, 2011."

2011, "Essah, S.Y.C. Managing potatoes for sustainable production. Presentation to Slovenia Potato Society. August 26, 2011. San Luis Valley Research Center."

2011, "Essah, S.Y.C. Potato production in the San Luis Valley. Presentation to Mexican Trade Mission, Undersecretary for Agriculture, and commissioner for agriculture and his entourage. June 28, 2011. San Luis Valley Research Center."

2011, "Essah, S.Y.C. Potato research and extension activities in Colorado State. Multi-State Potato Research and Extension Meeting. Minneapolis. MN. March 17, 2011".

2011, "Essah, S.Y.C. Potato research at the San Luis Valley. Presentation to a group visiting from the National Resource Conservation Service. March 2, 2011. San Luis Valley Research Center".

2011, "Essah, S.Y.C. Sustainable potato production in the San Luis Valley. Presentation to a group of college students visiting from St. Thomas University, Minnesota, and staff from La Puente Work group. March 24, 2011. San Luis Valley Research Center."

2011, "Essah, S.Y.C. Sustainable potato production. Presentation to a group of potato growers from Nicaragua. August 4, 2011. San Luis Valley Research Center."

2011, "Essah, S.Y.C. Sustaining potato

production during a period of irrigation water limitation. Eaton Country Club. Northern Colorado. November 15, 2011."

2011, "Essah, S.Y.C., D.G. Holm, and R.D. Davidson. Maximizing nitrogen use efficiency for optimum tuber yield and quality of a new Colorado potato cultivar. Annual Meeting of the Potato Association of America. Wilmington, NC. August 14-18, 2011."

2011, "Essah, S.Y.C., I.S. Egyir, and G.T.M. kwadzo. Financial costs and benefits of investing in the production of *Allanblackia* spp. as a tree crop in Ghana. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America. San Antonio, TX. October 16-19, 2011."

2010, "Essah, SYC. Managing nitrogen in irrigated potato for maximum tuber yield, tuber quality, and environmental conservation. African Potato Congress, Cape Town, South Africa. December 5-9, 2010.", peer-reviewed/refereed.

2010, "Essah, SYC. Optimizing inputs for maximum potato production with a focus on P and K, Southern Rocky Mountain Agricultural Conference and Trade Fair, Monte Vista, February 9, 2010,".

2010, "Essah, SYC. Optimizing nitrogen fertilizer application and plant population for maximum tuber yield and quality in Mesa Russet, a new Colorado cultivar, Potato Association of America Annual Meeting, Corvallis, OR August 15-19, 2010."

2010, "Essah, SYC. Response of irrigated potato (*Solanum tuberosum* L.) to green manure cover crops, International Annual Meeting of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Long Beach, CA. October 31-November 3, 2010."

2010, "Essah, SYC. Response of potato (*Solanum tuberosum* L) to seed size and seed

reconditioning. African Potato Congress, Cape Town, South Africa. 5-9 December, 2010.", peer-reviewed/refereed.

2010, "Essah, SYC. Response of potato to potassium fertilizer source and form of application in the San Luis Valley of Colorado, Potato Association of America Annual Meeting, Corvallis, Oregon. August 15-19, 2010."

2010, "Essah, SYC. Successful management of new potato cultivars, Crop Consultants Breakfast Meeting, Monte Vista, CO August 12, 2010".

2010, "Essah, SYC. The Colorado Potato Development Program, Potato Research and Extension program meeting, Fargo, ND March 18 & 19, 2010".

2010, "Essah, SYC. Tuber yield and quality of irrigated potato (*Solanum tuberosum* L.) as influenced by preceding green manure cover crops, Africa Potato Congress, Cape Town, South Africa. 5-9 December, 2010.", peer-reviewed/refereed.

COLLABORATIVE & INTEGRATIVE INTERDISCIPLINARY SCHOLARSHIP

2013-2014

Center for Rhizosphere Biology. Influence of soil amendments on root development and crop productivity

Potato Breeding and cultivar development in the southwest. This is a multistate research program involving Colorado, Texas, and California

OTHER ACTIVITIES/ACCOMPLISHMENTS – PUBLICATIONS/SCHOLARLY RECORD

Essah, S. Y., Holm, D. G., Davidson, R. D. "Contributed to the release of three potato cultivars," Licensed to: Colorado State University. (Submitted: 2014, Application: 2014, Approved: 2014).

Essah, S. Y., Holm, D. G., Davidson, R. D. "Contributed to the release of three potato cultivars. They are, Mercury Russet, Red Luna." (Submitted: 2013, Application: 2013, Approved: 2013).

"Contributed to the release and naming of two potato cultivars. These are Crestone Russet (CO99053-3RU) and Masquerade (AC99329-7PW/Y)..)" (Submitted: 2012, Application: 2012, Approved: 2012, Licensed: 2012).

"Developed management guidelines for four Colorado Potato cultivars. This development has reduced the production cost of potato growers, and their profit margins have increased. The cultivars include Mesa Russet, Masquerade, Crestone Russet, and CO99100-1RU.." (Submitted: 2012, Application: 2012, Approved: 2012, Licensed: 2012).

"Have developed optimum nitrogen management guidelines for several Colorado Potato cultivars. This development has reduced the production cost of potato growers, and their profit margins have increased.." (Submitted: 2011, Application: 2011, Approved: 2011, Licensed: 2011).

"Has contributed to the release of seven Colorado potato cultivars, and has developed cultivar specific management guidelines for several potato cultivars grown in the state of Colorado and in several states in the United States, and other overseas countries. Among the cultivars released are, Rio Grand Russet, Colorado Rose, Purple Majesty, Mountain Rose, Canela Russet, Rio Colorado, and Mesa Russet.." (Submitted: 2010, Application: 2010, Approved: 2010, Licensed: 2010).

(November 10, 2014 - November 13, 2014). Professional Meeting, "Colorado State University Extension Forum," Colorado State University Extension, Fort Collins, Colorado, United States. Approximate Number of Hours Spent Per Year: 18.

(November 2, 2014 - November 5, 2014). Professional Meeting, "Grand Challenges-Great Solutions," American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Long Beach, California, United States. Approximate Number of Hours Spent Per Year: 24.

(October 27, 2014). Workshop, "San Luis Valley Industry Workshop," Colorado State University and Colorado Potato Administrative Committee, Alamosa, Colorado, United States. Approximate Number of Hours Spent Per Year: 10.

(July 27, 2014 - July 31, 2014). Professional Meeting, "Annual Meeting of the Potato Association of America," Potato Association of America, Spokane, Washington, United States. Approximate Number of Hours Spent Per Year: 30.

(June 26, 2014). Workshop, "Growing potatoes with drip irrigation," NETAFIM, Monte Vista, Colorado, United States. Approximate Number of Hours Spent Per Year: 2.

(February 4, 2014 - February 6, 2014). Conference Attendance, "Southern Rocky Mountain Ag Conference," Colorado Potato Administrative Committee, Monte Vista, Colorado, United States. Approximate Number of Hours Spent Per Year: 32.

TEACHING:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u>Cr. Hrs.</u>	<u>Enrollment</u>
2015	Fall	HORT698 - Research	18	17
2014	Fall	HORT698 - Research	18	12

EXTENSION/ENGAGEMENT ACTIVITIES/ACCOMPLISHMENTS

Field Day

Field Tour of Research projects. Adult, Center, Colorado. Number of times program was made: 3. Total number of participants: 50. Percent Responsible: 100%. 3rd Quarter 2014.

San Luis Valley Research Center Field Day. Monte Vista, CO. Number of times program was made: 1. Total number of participants: 250. Percent Responsible: 50%. 2012.

Presentation

Response of Russet potato to additional late nitrogen fertilizer application. Adult, San Antonio, Texas. Number of times program was made: 1. Total number of participants: 200. Percent Responsible: 10%. 1st Quarter 2014.

Timing nitrogen fertilizer application for early and medium maturity potatoes. Adult, Monte Vista, Colorado. Number of times program was made: 1. Total number of participants: 300. Percent Responsible: 50%. 1st

Quarter 2014.

Timing of nitrogen fertilizer application for increased N Use efficiency in potato production. Adult, Spokane, Washington. Number of times program was made: 1. Total number of participants: 120. Percent Responsible: 10%. 3rd Quarter 2014.

Field management of fortress russet. Adult, Center, Colorado. Number of times program was made: 1. Total number of participants: 40. Percent Responsible: 10%. 4th Quarter 2014.

Response of a new Colorado Russet potato cultivar to nitrogen application timing. Adult, Tampa, Florida. Number of times program was made: 1. Total number of participants: 250. Percent Responsible: 10%. 4th Quarter 2014.

Reducing irrigation water use in potato production. Adult, Eaton, Colorado. Number of times program was made: 1. Total number of participants: 15. Percent Responsible: 20%. 4th Quarter 2014.

Efficient nitrogen management and economics of nitrogen use in potato. Monte Vista, CO. Number of times program was made: 1. Total number of participants: 250. Percent Responsible: 100%. 2012.

Sustainably feeding a world of 9 billion people: The African Perspective. Fort Collins, CO. Number of times program was made: 1. Total number of participants: 200. Percent Responsible: 100%. 2012.

Effect of soil ammendment on potato nutrient uptake, tuber yield and quality. Las Vegas, NV. Number of times program was made: 1. Total number of participants: 400. Percent Responsible: 100%. 2012.

Air Injection of Drip Irrigated water improves potato performace in the field. Quebec City. Number of times program was made: 1. Total number of participants: 250. Percent Responsible: 100%. 2012.

Cover crops alter the soil microbial community and increase potato tuber yield and quality. Tampa, FL. Number of times program was made: 1. Total number of participants: 300. Percent Responsible: 30%. 2012.

Application of soil conditioners can improve root growth, increase nutrient uptake, and potato tuber yield., Tampa, FL. Number of times program was made: 1. Total number of participants: 300. Percent Responsible: 100%. 2012.

Workshop

Water and Potatoes. Adult, Alamosa, Colorado. Number of times program was made: 1. Total number of participants: 60. Percent Responsible: 20%. 4th Quarter 2014.

Sustainable potato production. Adult, Alamosa, Colorado. Number of times program was made: 1. Total number of participants: 60. Percent Responsible: 20%. 4th Quarter 2014.

Cover Crops can reduce water use. Monte Vista, CO. Number of times program was made: 1. Total number of participants: 200. Percent Responsible: 10%. 2012.

Nutrisorb improves root growth, nutrient uptake, tuber yield and quality in potato production systems. Tapalta, Mexico. Number of times program was made: 1. Total number of participants: 150. Percent Responsible: 100%. 2012.

COMMITTEES

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Colorado Potato Administrative committee, (June 2014 - Present).

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PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Africa Potato Association. (2010 - Present).

African Potato Association. (2010 - Present).

European Potato Association. (2005 - Present).

Indian Potato Association. (2005 - Present).

American Society for Horticultural Science. (2003 - Present).

Regional Potato Research and Extension Committee. (2003 - Present).

Potato Association of America. (February 2000 - Present).

Global Potato News. (2000 - Present).

American Society of Agronomy. (1997 - Present).

Crop Science Society of America. (1997 - Present).

European Potato Association. (2005 - 2020).

Global Potato News. (2000 - 2020).

Association of African Agricultural Professionals in the Diaspora. (2008 - 2010).

Indian Potato Association. (2005 - 2010).

American Society for Horticultural Science. (2003 - 2010).

American Society of Agronomy. (1997 - 2010).

Crop Science Society of America. (1997 - 2010).

Weed Science Society of America. (1997 - 2004).

Weed Science Society of America. (January 1997 - 2004).

Weed Science Society of America. (1997 - 2004).

Weed Science Society of America. (1997 - 2004).

Weed Science Society of America. (1997 - 2004).

Reviewer, Journal Article, Journal of Soil and Water Conservation. (May 20, 2014 - Present).

Reviewer, Journal Article, Journal of AgroTechnology. (March 10, 2014 - Present).

Committee Member, Potato Association of America. (January 2014 - Present).

Editor, Senior Editor, Potato Association of America, Orono, ME. (January 1, 2014 - Present).

Reviewer, Journal Article, Potato Association of America, Orono, Maine. (January 1, 2014 - Present).

Reviewer, Journal Article, Potato Association of America. (January 2014 - Present).

Editor, Journal Editor, Journal of Current Opinion in Agriculture. (2013 - Present).

Editor, Journal Editor, Journal of Current Opinion in Agriculture. (January 2013 - Present).

American Journal of Potato Research. (2012 - Present).

American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Cincinnati, OH. (2012 - Present).

Colorado Potato Administrative Committee - Area III, Eaton, CO. (2012 - Present).

Colorado State University Extension Forum, Fort Collins, CO. (2012 - Present).

Intergration of the state of the art technology conference, Los Mochis, ZZ. (2012 - Present).

Editor, Journal Editor, Journal of AgroTechnology. (2012 - Present).

Editor, Journal Editor, Journal of AgroTechnology. (2012 - Present).

Pennsylvania State University, State College, PA. (2012 - Present).

Potato Association of America, Denver, CO. (2012 - Present).

Southern Rocky Mountain Agricultural Conference, Monte Vista, CO. (2012 - Present).

Southern Rocky Mountain Agricultural Conference, Monte Vista, CO. (2012 - Present).

The Great Plains Soil Fertility Conference, Denver, CO. (2012 - Present).

The Root Dynamic Regulation Convention, Inovak Global Inc., Puebla, ZZ. (2012 - Present).

World Potato Congress, Edinburgh, Scotland, ZZ. (2012 - Present).

World Potato Congress, Edinburgh, ZZ. (2012 - Present).

Ag. Expt. Station Conference and CSU Extension Forum, Fort Collins, CO. (2011 - Present).

American Journal of Potato Research. (2011 - Present).

American Society of Agronomy/Crop Science Society of America/Soil Science Society of America, San Antonio, TX. (2011 - Present).

American Society of Agronomy/Crop Science Society of America/Soil Science Society of America, San Antonio, TX. (2011 - Present).

Editor, Journal Editor, Australian Journal of Crop Science. (2011 - Present).

Colorado Potato Administrative Committee (Area III), Eaton, CO. (2011 - Present).

Innovak Global, Monte Vista, CO. (2011 - Present).

Multi-State Potato Research and Extension Group, Minneapolis, MN. (2011 - Present).

Potato Association of America, Wilmington, NC. (2011 - Present).

Potato Expo, Las Vegas, NV. (2011 - Present).

Editor, Journal Editor, Research on Crops. (January 2011 - Present).

Slovenia Potato Society, Monte Vista, CO. (2011 - Present).

Southern Rocky Mountain Agricultural Conference and Trade Fair, Monte Vista, CO. (2011 - Present).

Springer Publications. (2011 - Present).

African potato congress, Cape Town, CO. (2010 - Present).

African Potato Congress, Cape Town, CO. (2010 - Present).

African Potato Congress, Cape Town, CO. (2010 - Present).

american Journal of potato Research. (2010 - Present).

American Society of Agronomy, Crop Science Society of America, Long Beach, CA. (2010 - Present).

Potato Association of America, Corvallis, OR. (2010 - Present).

Potato Association of America, Corvallis, OR. (2010 - Present).

Southern Rocky Mountain Agricultural Conference, Monte Vista, CO. (2010 - Present).

Southern Rocky Mountain Agricultural Conference, Monte Vista, CO. (2010 - Present).

Reviewer, Ad Hoc Reviewer, USDA-ARS Research Project Plans. (2010 - Present).

Reviewer, Journal Article, American Journal of Potato Research. (2008 - Present).

Reviewer, Journal Article, Potato Association of America. (2008 - Present).

Editor, Journal Editor, Indian Journal of Crop Science. (2006 - Present).

Reviewer, Ad Hoc Reviewer, United States-Israel Binational Agricultural Research and Development Fund. (2006 - Present).

Editor, Journal Editor, Journal of Crop Research. (2005 - Present).

Member, USDA-CSREES Potato Breeding and Selection Special Grant. (2004 - Present).

Member, Africa Potato Association. (2010 - 2020).

Association of African Agricultural Professionals in the Diaspora. (2008 - 2020).

Member, European Potato Association. (2005 - 2020).

Member, Indian Potato Association. (2005 - 2020).

Member, American Society for Horticultural Science. (2003 - 2020).

Member, Global Potato News. (2000 - 2020).

Member, Potato Association of America. (2000 - 2020).

Member, American Society of Agronomy. (1997 - 2020).

Member, Crop Science Society of America. (1997 - 2020).

Member, Journal of AgroTechnology. (2012 - 2018).

Committee Member, Potato Association of America. (2013 - 2016).

Committee Member, Potato Association of America, Orono, ME. (July 2013 - July 2016).

Committee Member, Agronomic Service Award Committee. (November 2013 - December 2015).

Committee Member, American Society of Agronomy. (2013 - 2015).

Committee Member, American Society of Agronomy, Madison, Wisconsin. (January 2013 - December 2015).

Member, Editorial Board, Australian Journal of Crop Science. (2011 - 2015).

Indian Journal of Crop Science. (2006 - 2015).

Member, Journal of Crop Research. (2005 - 2015).

Committee Chair, Potato Association of America, Quebec City. (2010 - 2013).

Committee Chair, Potato Association of America, Quebec City, Quebec. (August 2010 - August 2013).

Program Organizer, San Luis Valley Research Center, Monte Vista, Colorado. (August 6, 2013).

Program Organizer, San Luis Valley Research Center, Monte Vista, Colorado. (June 12, 2013 - June 13, 2013).

Field day organized for members of the Colorado Potato Administrative Committee Research Committee, to familiarize them with my on going research. (2012).

Field day organized for participants of the college of agricultural science tour (20 participants) led by the dean of College of Ag. Science, Colorado State University. August 8, 2012. (2012).

Field tour organized for Stone's farm supply and industry personnel from the country of Mexico. I gave a tour of my research work at the research station and on grower farms. July 25-26, 2012. (2012).

Field Tour Organized for the President of Colorado State University and his entourage while visiting the Research Station. July 23, 2012. (2012).

Potato Association of America. (2011 - 2012).

My involvement in international program will go a long way to help recruit international students to CSU, as well as strengthen inter-racial relation at CSU. The setup of demonstration plots and observational trials on potato grower fields encourages cooperation between Colorado State University and potato growers. (2010).

Potato Association of America. (2009 - 2010).

Association of African Agricultural Professionals in the Diaspora. (2008 - 2010).

Member, European Potato Association. (2005 - 2010).

Member, Indian Potato Association. (2005 - 2010).

Member, American Society for Horticultural Science. (2003 - 2010).

Member, Global Potato News. (2000 - 2010).

Member, American Society of Agronomy. (1997 - 2010).

Member, Crop Science Society of America. (1997 - 2010).

Potato Association of America. (2006 - 2007).

Member, Weed Science Society of America. (1997 - 2004).

Member, Weed Science Society of America. (1997 - 2004).

Member, Weed Science Society of America. (1997 - 2004).

Member, Weed Science Society of America. (1997 - 2004).

Member, Weed Science Society of America. (1997 - 2004).

OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH

Board of Director of the Association, Association of African Agricultural Professionals in the Diaspora. (2008 - Present).

Board of Trustees, Alamosa Pentecostal Church, Alamosa, Colorado. (2006 - Present).

Director, Potato Association of America. (2013 - 2016).

Director, Potato Association of America, Orono, ME. (July 2013 - July 2016).

Board Member, Monte Vista Chamber of Commerce, Ag Conference Committee, Monte Vista, Colorado. (January 2014 - Present).

Alamosa Pentecostal Church. (2011 - Present).

Alamosa Pentecostal Church. (2010 - Present).

Board Member, Association of African Agricultural Professionals in the Diaspora. (2008 - Present).

Board of Trustees, Alamosa Pentecostal Church, Alamosa, CO. (2006 - Present).

Program Organizer, San Luis Valley Research Center, Monte Vista, CO. (2013).

Program Organizer, San Luis valley Research Center, Monte Vista. (2013).

Potato Association of America. (2011 - 2012).

Potato Association of America. (2009 - 2010).

Potato Association of America. (2006 - 2007).
