

# Weiss, Stuart A.

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Assistant Professor of Agronomy

March, 2016

University of the Virgin Islands, Agricultural Experiment Station

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<http://www.uvi.edu/research/agricultural-experiment-station/agronomy/default.aspx>

## **EDUCATION:**

**Ph.D.** University of Florida, Gainesville, Florida, Horticultural Science Dept.,  
Agroecology, 2015

**M.S.** Tarleton State University, Stephenville, Texas. Animal Science/Agronomy 2001

**B.S.** Texas A&M University, College Station, Texas. Animal Science 1997

## **RESEARCH INTERESTS:**

Agroecology, environmental science, soil & water conservation, landscape design, plant ecology, Sustainable/organic agricultural systems, integrated aquaponic systems, bioenergy systems, cover crop technology, mixed crop-livestock systems, soil bio-remediation, small ruminant production, and improved pasture finishing systems.

## **RESEARCH OBJECTIVE:**

To research agroecosystems to increase agricultural sustainability through agroecological practices and principles that provide innovative technological advancements and biological solutions to farmers and farm productivity.

## **PROFESSIONAL EXPERIENCE:**

2015-Present Assistant Professor of Agronomy. Agroecologist. University of the Virgin Islands, Agricultural Experiment Station, St. Croix, USVI.

2014-2015 Acting Horticultural Program Leader. University of the Virgin Islands, Agriculture Experiment Station, St. Croix, USVI.

2003-2015 Acting Agronomy Program Leader. University of the Virgin Islands, Agriculture Experiment Station, St. Croix, USVI.

2002- 2003 Research Specialist II. University of the Virgin Islands, Agriculture Experiment Station, St. Croix, USVI.

1999- 2001 Agri-Business Incubator Coordinator. Tarleton State University, Stephenville, Texas.

## **MEMBERSHIPS IN PROFESSIONAL SOCIETIES:**

- American Society of Agronomy (ASA)
- American Society of Animal Science (ASAS)
- Soil Science Society of America (SSSA)
- Crop Science Association (CSA)
- Caribbean Food Crops Society (CFCS)
- American Society of Horticultural Science

## **PUBLICATIONS:**

- Valencia, E., R.W. Godfrey, and S.A. Weiss. 2003. Grazing and Supplementation Effects of Lablab (*Lablab purpureus*) on Weight Gains of St. Croix White Hair Sheep Lambs During the Dry Season. *J. Anim. Sci.* 81 (Suppl. 1):353.
- Muir, J.P. and S.A. Weiss. 2004. Rolled Corn as a Supplement for Wethers on Warm Season Annual Pasture and Mesquite Savannah Range. *Texas Agric. Exp. Sta. Prog. Rep.*
- Muir, J.P., and S.A. Weiss. 2006. Corn Supplement for Goats on Summer Rangeland or Improved Pasture. *Sheep & Goat Research Journal*. Vol. 21. pg. 40-47.
- Weiss, S.A., R.C. Ketring, and R.W. Godfrey. 2007. Evaluation of alternative small ruminant finishing systems for the tropics. *Journal of Animal Science*. Volume: 85 Pages: 661-661 Supplement: Suppl. 1.
- Weiss S.A., Muir J.P., and R.W. Godfrey. 2010. Coral Vine Consumption by St. Croix White Hair Lambs. *Livestock Research for Rural Development*. Volume 22, Article # 097. Retrieved March 31, 2010, from <http://www.lrrd.org/lrrd22/5/weis22097.htm> .
- Weiss S A, R.W. Godfrey, R. Ben-Avraham and R.C. Ketring. 2015 Performance and carcass characteristics of hair sheep lambs finished on tropical pasture or rangeland and supplemented with maize. *Livestock Research for Rural Development*. Volume 27, Article #228. Retrieved from <http://www.lrrd.org/lrrd27/11/weis27228.htm>
- Ashworth, A.J., C.P West, F.L. Allen, P.D. Keyser, S. Weiss, D.D. Tyler, and A.M. Taylor, K.L. Warwick, and K.P. Beamer. 2015. Biologically fixed nitrogen in legume intercropped systems: comparison of N-difference and 15N enrichment techniques. *Agronomy Journal*. 107:1-12. DOI:10.2134/agronj14.0639.

## **CONFERENCE PROCEEDINGS:**

- Weiss, S.A. and J.P. Muir. 2000. Winter Annual Pastures for Finishing Goats under Pecan Groves. Pg. 173, *Agronomy Abstracts*. ASA, Minneapolis, MN.
- Weiss, S.A. and E. Valencia. 2003. Season Effects on Forage and Pod Yield of Cowpea Grown on Heavy Clay Soils of the Eastern Caribbean Island of St. Croix. *Proc. Caribbean Food Crops Society*. 39(2):143-146.
- Newman, Y.C., T. R. Sinclair, A.S. Blount, S. Weiss, M.L. Lugo, and E. Valencia. 2004. Growth Responses under Extended Day Length in Tropical Forages in St. Croix and Puerto Rico. *Proc. Caribbean Food Crops Society*. 40:257.
- Weiss, S. A., M.L. Lugo, Y.C. Newman, T. R. Sinclair, A.S. Blount, and E. Valencia. 2005. Environmental Effects on Production of Two Tropical Legumes at Subtropical and Tropical Latitudes. *Proc. 41<sup>st</sup> Annual Meeting of the Caribbean Food Crops Society*, July 10-15, Gosier, Guadeloupe.

- Muir, J. P., E. Valencia, S. Weiss, and T. Terrill. 2006. Small Ruminants for Biological Control of Invasive Weeds. Proc. Caribbean Food Crops Society. 42(2):261.
- Muir, J. P., E. Valencia, and S. Weiss. 2006. Harnessing the Potential of Native Herbaceous Legume Germplasm. Proc. Caribbean Food Crops Society. 42(2):12-16.
- Weiss, S.A., R. Ben-Avraham, R.C. Ketring, and R.W. Godfrey. 2008. A Comparison of Grass vs. Legume Free Range Small Ruminant Finishing Systems for the Tropics. Proc. Caribbean Food Crops Society. 44(2):542.
- Muir, J.P., T.H. Terrill, E. Valencia, S. Weiss, K. Littlefield, P.D. Jones, J. Mosjidis, and R.M. Wolfe. 2009. A Wide Range in Forage Legume Condensed Tannin Content in the Southeastern USA Shows Promise in Ruminant Protein and Parasite Management. Proc. 18th Annual Meeting of the American Forage and Grassland Council, June 21-24, Grand Rapids MI. AFGC.
- Weiss, S.A., D.D. Treadwell, C.A. Chase, and R. Ben Avraham. 2009. Effect of Cover Crop Biomass and Green Manure Systems on Vegetable Yield in Low-External-Input (LEI) Organic Crop Production in the Caribbean. Proc. Caribbean Food Crops Society. 45:229-230.
- Muir, J.R., R. Wolfe, T. Terrill, E. Valencia and S.A. Weiss. 2009. The Wide Range of Condensed Tannins in Caribbean Basin Plants and their Application to Ruminant Production Systems. Proc. Caribbean Food Crops Society, 45:46-52.
- Weiss, S.A., D.D. Treadwell, C.A. Chase, and R.B. Avraham. 2009. Sustainable Management of Soil Nitrogen and Organic Matter in Low-External-Input Organic Crop Production in the Caribbean. In: International Annual Meetings ASA-CSSA-SSSA; AnMtgsAbsts2009.54491. Available at: <https://scisoc.confex.com/scisoc/2009am/webprogram/Paper54491.html>
- Weiss, S.A. and R.W. Godfrey. 2010. Evaluation of Sunn Hemp Hay for St. Croix White Hair Sheep Production. Proc. Caribbean Food Crops Society. 46:162.
- Weiss, S.A. and A. Ashworth. 2010. Nitrogen Allocation in Low-External-Input Tropical Cover Crop Livestock Forage Systems. In: International Annual Meetings ASA-CSSA-SSSA; 276-4. Available at: <https://scisoc.confex.com/crops/2010am/webprogram/Paper62187.html>
- Weiss, S.A. 2011. *Crotalaria juncea* L. cv. IAC-1 for Livestock Feed and Seed Production in Low-External-Input Mixed Crop/Livestock Production Systems for the Tropics. In: International Annual Meetings ASA-CSSA-SSSA; 188-2. Available at: <https://scisoc.confex.com/crops/2011am/webprogram/Paper67119.html>

- Weiss, S.A., R.W. Godfrey, E. Valencia, and A. Hogg 2012. Evaluation of the Condensed Tannin Containing Tropical Legume *Calliandra calothyrsus* on Gastrointestinal Nematode Control and Growth Performance in St. Croix White Hair x Dorper Lambs in the U.S. Virgin Islands. Proc. Caribbean Food Crops Society. 48:273.
- Weiss, S.A. 2012. Evaluation of Three Cover Crops and Their Termination with a Roller-Crimper to Produce Residual Surface Sheet Mulch on Cover Crop Re-Growth and Weed Development under Tropical Environmental Conditions. In: International Annual Meetings ASA-CSSA-SSSA; 52-6. Available at: <https://scisoc.confex.com/crops/2012am/webprogram/Paper73941.html>
- Weiss, S.A., D.D. Treadwell, E. Valencia, and K.P. Beamer. 2013. Tropical Cover Crop Mulch Systems for Low-External-Input Reduced Tillage Crop Production. In: International Annual Meetings ASA-CSSA-SSSA; 317-11. Available at: <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper81549.html>
- Weiss, S.A. and K.P. Beamer. 2013. Reduced Tillage Termination of Cover Crop Systems in the Tropics. In: International Annual Meetings ASA-CSSA-SSSA; 187-3. Available at: <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper81559.html>
- Weiss, S.A. and K.P. Beamer. 2014. Evaluation of Three Cover Crops Terminated with a Roller-Crimper on Cover Crop Re-Growth and Weed Development under Tropical Conditions. Proc. Caribbean Food Crops Society. 50:41.
- Weiss, S.A. T.C. Geiger, and K.P. Beamer. 2014. Evaluation of Six Edible-Pod Pea Varieties as a Potential High Value Crop for the U.S. Virgin Islands. Proc. Caribbean Food Crops Society. 50:64.
- Treadwell, D.D. S.A. Weiss, E. Valencia, and K.P. Beamer. 2014. Lessons Learned in Conservation Tillage Vegetable Systems in the Sub-Tropics and Tropics. HortScience 49(9):S329 (Supplement).
- Weiss, S.A. K.P. Beamer, and R.W. Godfrey. 2014. St. Croix White Hair Sheep Performance Evaluation of Lambs Grazed on Low Quality Native Pasture Improved with No-Till Sunn Hemp (*Crotalaria juncea*). In: International Annual Meetings ASA-CSSA-SSSA; 290-1. Available at: <https://scisoc.confex.com/scisoc/2014am/webprogram/Paper88753.html>
- Weiss, S.A. and K.P. Beamer. 2014. Screening of Five Broad Leaf Plants for Use as Tropical Cover Crops and their Response to Termination with a Roller-Crimper. In: International Annual Meetings ASA-CSSA-SSSA; 66-21. Available at: <https://scisoc.confex.com/scisoc/2014am/webprogram/Paper89776.html>
- Ashworth, A.J., F.L. Allen, P.D. Keyser, S. Weiss, C.P. West, D.D. Tyler, and A.M. Taylor. 2015. Enhancing the sustainability of lignocellulosic feedstock production systems in the Southeast and under intensified climatic change. Sun Grant Conference, Auburn, AL.

- van Santen, E. and S.A. Weiss. 2015. Expired Equines and Other Challenges in On-Farm Systems Research in the Tropics. Conference on Applied Statistics in Agriculture. Manhattan, KS. Available at: <http://newprairiepress.org/agstatconference/2015/>
- Treadwell, D.D., S.A. Weiss, and J. Perez. 2015. Cover Crops and Conservation Tillage in Organic Jalapeno Pepper (*Capsicum annum* L. 'Tormenta'). HortScience 50(9) (Supplement).
- Weiss, S.A., D.D. Treadwell, R.S. Ferrarezi, and K.P. Beamer. 2015. Tropical Cover Crop Mulch Systems for Low-external-input Reduced-tillage Vegetable Production. HortScience 50(9) (Supplement).
- Geiger, T.C., K.P. Beamer, S.A. Weiss, and R.S. Ferrarezi. 2015. Performance of Nine Butternut Squash Varieties in summer in the U.S. Virgin Islands. HortScience 50(9) (Supplement).
- Weiss, S.A., D.D. Treadwell, R.S. Ferrarezi, and K.P. Beamer. 2015. Utilizing the Cover Crop Sunn Hemp (*Crotalaria juncea* L.) to Improve Vegetable Cropping Systems. In: International Annual Meetings ASA-CSSA-SSSA; 301-2. Available at: <https://scisoc.confex.com/crops/2015am/webprogram/Paper95099.html>
- Weiss, S.A., K.P. Beamer, A.J. Ashworth, F.L. Allen, and P.D. Keyser. 2015. Harvest Timing and Inorganic-Nitrogen Alternatives Impact on Lignocellulosic Characteristics and Yield Under an Intensified Climate. In: International Annual Meetings ASA-CSSA-SSSA; 149-10. Available at: <https://scisoc.confex.com/crops/2015am/webprogram/Paper95459.html>
- Treadwell, D.D., and S.A. Weiss. 2015. A Comparison of Tillage and Mulching Strategies for Weed Management in Organic Pepper (*Capsicum annum* L. 'Tormenta'). In: International Annual Meetings ASA-CSSA-SSSA; 258-12. Available at: <https://scisoc.confex.com/crops/2015am/webprogram/Paper94073.html>
- Ferrarezi, R.S., S.A. Weiss, K.P. Beamer, and T.C. Geiger. 2015. Low-Cost Sensor-Based Irrigation System Powered By Solar Energy. In: International Annual Meetings ASA-CSSA-SSSA; 314-3. Available at: <https://scisoc.confex.com/crops/2015am/webprogram/Paper95677.html>

#### **DOCTORAL DISSERTATION:**

- Weiss, S.A. 2015. Sustainability of Cover Crop Rotations in Tropical Low-External-Input Smallholder Organic Cropping Systems. PhD Dissertation, University of Florida, Gainesville, Fl.

#### **MASTER THESIS:**

- Weiss, S.A. 2001. Energy supplements for finishing goats on native savannah or cultivated warm-season pasture. M.S. Thesis, Tarleton State University, Stephenville, TX.

**RECENT GRANTS RECEIVED:**

<b>Funding Period</b>	<b>Funding Agency/Title</b>	<b>Amount</b>	<b>Role</b>
2014-2019	USDA-NIFA HATCH Project, Evaluation of integrated tropical cover crop systems	\$212,900.00 (per year)	PI
2014-2016	USDA-NRCS: Tropical cover crops and multipurpose nitrogen fixing trees to reduce soil erosion, increase soil quality and provide ecosystem services in Caribbean agroecosystems.	\$14,976.81	PI
2012-2015	SR-SARE: Developing Sustainable Tropical Leguminous Cover Crop and Green Manure Mulch Systems for Low-External-Input crop Production in the U.S. Virgin Islands, Puerto Rico, and Florida	\$223,000.00 Weiss \$122,070.00	PI
2011-2013	SR-SARE: Promoting Sustainable Tropical Cover Crop Organic Mulch Systems for Minimum-Till Crop Production in the U.S. Virgin Islands	\$14,957.00	PI
2011-2014	USDA-Sun Grant: Enhancing the Sustainability of Integrated Biofuel Feedstock Production Systems	\$141,640.63 Weiss \$30,500.00	C0-PI

**INVITED PRESENTATIONS:**

Soil Health in the Subtropics and Tropics. Florida Small Farms and Alternative Enterprises Conference, University of Florida, Kissimmee, FL. August 1-2, 2014.

Expired Equines and Other Challenges in On-Farm Systems Research in the Tropics. Conference on Applied Statistics in Agriculture. Kansas State University, Manhattan, KS, April 26-28, 2015.

**CONSULTATIONS:**

Virgin Islands Sustainable Farm Institute. Frederiksted, St. Croix, US Virgin Islands. Integrated holistic agroecosystem design, agriculture production development, organic crop production, composting and soil amendment program development, organic certification (USDA-NOP), irrigation system and water management plan design and implementation, and agriculture education program development. 2004-2008.

Virgin Islands Farmer's Cooperative, St. Croix, USVI. Assist in the development of sustainable organic crop production, irrigation, and soil nutrient management. 2009-2011.

Lundberg Family Farms. Richvale, California. Small ruminant management for organic weed control in commercial organic rice production. January, 2006.

Jackson's Farm. Frederiksted, St. Croix, US Virgin Islands. Tropical crop production, soil fertility and nutrient management, irrigation system design, weed management, crop rotation and cover crop technology. 2008-2010.

Diageo, Captain Morgan Rum Distillery. St. Croix, US Virgin Islands. Distillery waste effluent environmental management, nutrient/elemental management, and soil management. 2009-2012.

The Common Wealth of Dominica, Ministry of Agriculture, Dominican Organic Agriculture Movement, organized through Chris Beyer of the Florida Association of Volunteer Action in the Caribbean and the Americas. May, 2012. Soil and water conservation focusing on contour farming and the use of sloped agricultural land technology and organic agriculture.

Tibbar Energy, LLC. Developed implementation strategies, environmental assessments and crop management systems for a comprehensive forage based bioenergy industry for St. Croix, USVI. Worked extensively with *Pennisetum purpureum* as a commercial bioenergy crop and provided agronomic technical support to the project. July - December, 2012.

ALCOA. Provided technical expertise in developing a red mud environmental bio-remediation plan that includes the re-vegetation of the red mud super fund site on St. Croix. Planted experimental re-vegetation plots and provided soil and plant based consultation services. May – Dec., 2013.

#### **EXTENSION & COMMUNITY OUTREACH:**

Numerous field days, workshops, and seminars have been conducted for a wide range of environmental science, soil and water conservation, and agroecology topics:

#### **SPECIALTY FIELDS:**

##### **Environmental & Agricultural Sciences**

Agroecology

Agroforestry and timber products

Agronomy

Aquaponics

Biofuel feedstock development

Contour and terrace farming using sloped agriculture land technologies

Cover crops and green manure for sustainable agriculture systems

Environmental Horticulture

Environmental Science

Horticultural Science

Irrigation and water management

Landscape design and management

Low-external-input farming

Organic agricultural systems

Organic certification and USDA-NOP/IFOAM regulations

Organic pest management and control – Insect, weed, nematode, and plant pathogen

Organic soil and nutrient management

Plant nutrition

Post-harvest handling and agricultural product marketing

Soil bioremediation

Soil fertility management – Fertilization recommendations and organic amendments

Soil and water conservation

Tropical agricultural systems

Tropical fruit production

**Forage Agronomy**

Mixed crop-livestock systems  
Pasture assessment and management  
Pasture nutrient management  
Tropical hay production  
Tropical legume forage production

**Livestock**

Organic livestock production  
Pasture finishing systems  
Rotational grazing strategies for the tropics  
Small ruminant management and production  
Smart drenching and the FAMACHA system– Integrated training for sustainable control of gastrointestinal nematodes in small ruminants  
Small ruminant marketing strategies