Juan P. Alvez, Ph.D. Research Associate Faculty

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Interests

Sustainable Agroecosystems, Grazing Management; Agroforestry; Livelihoods; Ecosystem Services and Payments; Restoration; C reduction mechanisms.

I. EDUCATION

Ph.D. in Environment and Natural Resources, University of Vermont. (2012)	
Dissertation: "Livestock Management, Ecosystem Services, and Sustainable Livelihoods". Advisor: Dr. Jon D. Erickson	
Post Graduate Certificate in Ecological Design UVM, Gund Institute for Environment Project: Greening of Aiken Building (Dr. John Todd)	(2009)
Post Graduate Certificate in Ecological Economics UVM, Gund Institute for Environment Project: Payments for Eco Services and Perverse Subsidies (<i>Dr. Robert Costanza</i>) (<u>link</u>)	(2008)
M.S. in Plant and Soil Sciences, University of Vermont, (2005)	
Thesis: "Irrigation, N., and Soil Amendment Effects on Forage Yield and Quality". (Advisor: Dr. William M. Murphy)	
B.S. Agronomist Engineer. Universidade Federal de Santa Catarina	(1998)
Monography: "Aspects for the Adoption of Agroforestry Systems". (Adv: Dr. L. C. Pinheiro M	(achado)

II. PROFESSIONAL EXPERIENCE

A. RESEARCH (Selected Projects and Collaborations)

i. Managing Pasture for Healthy Farms and Soils Across Vermont (VLT, Biological Capital, UVM, UVM Ext.)

We are implementing a four-part Soil Health Management System (SHMS) on 20 VT farms for improved pasture and farm health: (1) no-till cover crops to increase soil and plant diversity; (2) compost for soil amendment; (3) subsoil keyline plowing to reduce compaction and increase water infiltration where needed; and (4) Management Intensive Rotational Grazing (MIRG) for improved livestock production. We will correlate the four-year time series of in situ soil, pasture, and water data with remote sensed imagery to build an empirical machine learning model that predicts the outcomes of adopting the four-part SHMS across the Vermont landscape.

ii. UVM, Center for Sustainable Agriculture

Research Director: Enhancing Research and Education for Grass Farmers (2016-Present).

Goal: To monitor and research how grazing management helps restore soil function as it relates to the production of humanely raised, high-quality grass-fed, grass-finished beef.

Pasture Program Technical Coordinator (2012-Present).

Goal: to provide research information and technical support to farmers and partners on wellmanaged grazing, treed habitats, and improvements in soil, water, forage quality, and profitability.

iii. Biodiversity and Livestock Wellbeing

Research Collaborator with Gund Institute, Animal Sciences, UVM Ext. (2014-Present).

Goal: Understanding ruminant and environmental microbial communities to specific management practices are critical to optimizing farm productivity and product quality and enhancing ecosystembased management of farms and agricultural landscapes. We studied the ability to estimate forage intake rates and assess how the value of diet diversity can affect dairy productivity, milk quality, and well-being.

iv. Redesigning Agroecosystems

Research Collaborator with UFSC/CNPq, Brazil. (2007-Present).

Goal: to collaborate, identify, design, conduct research and compile scientific information for projects that promote ecosystem services and conservation, via sustainable agriculture, in partnership with multiple partners.

OTHER SELECTED RESEARCH PROJECTS

v. Regional Conservation Partnership Program (RCPP / USDA-NRCS).

Collaborator UVM Ext. (2015-2019).

This multi-state project addresses excess nutrients as the primary cause of hypoxic conditions in Long Island Sound (affecting upland water resources within the watershed including areas of Connecticut, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont). We focus on technical assistance and education on grazing and nutrient management and soil health, protection of farmland and non-industrial forestland, and working lands adaptation/resiliency.

vi. VT Agricultural Resilience in a Changing Climate

Research Collaborator at Agroecology and Rural Livelihoods Group. (2013-2016)

This project focuses on evaluating and implementing on-farm climate change mitigation and adaptation practices and evaluating the impact of these strategies on the economic health, their environmental quality, and farming preservation. The work informs state and federal level policymakers, particularly through the USDA Northeast Regional Climate Hub.

vii. Gund Institute for Ecological Economics Gund Grad. Fellow, Grad. Rsch. & Teaching Assistant. (2006-2011).

At the Gund Institute, I worked on interdisciplinary research involving, ecosystems goods and services, conservation policy, green markets, and agroecology.

B. PUBLICATIONS (B: Book Chapter)

-2021-

- Travis W. R., Wolfe E., Herrick C., Alvez J., Hodgson S., Berlin L., Chase, L., 2021 Resilience to COVID-19 Impacts among Vermont Farms: Contributions of Institutions and Social Networks. *College of Ag. and Life Sciences Faculty Publications*. https://scholarworks.uvm.edu/calsfac/#
- Assessment of dietary protein supplementation on milk productivity of commercial organic dairy farms during the grazing season. A. Ayers, S. E. Ziegler, H. M. Darby, S. Bosworth, J. P. Alvez, J. Colby, J. Kraft, S. L. Greenwood. *Journal of Dairy Science*.

- Sattler, C.; Schrötter, B.; Brasileiro, A.; Alvez, Juan P. 2021. "Analyzing community-based environmental governance: adoption of the management-intensive grazing system (MIG) in the Santa Rosa de Lima community, Brazil". In: Andreoli, C. and Phillipi Jr. A. "Agribusiness Sustainability". *Manole Publisher* ISBN: 9786555764512 (Link) (B)
- 4. Castelo Branco, A.; Sattler, C. Schrotter, B.; Alvez, Juan P; Sinisgalli, P.; Schmitt, Fo., A. 2021. "Social-Ecological System Transformation and Learning: the case of Santa Rosa de Lima's dairy system, Brazil". *Environment and Society*. (Link)

-2020-

4. Sales, E.F.; Baldi. A.; Alvez, J. 2020. "Evaluation of Conilon Coffee Productivity Intercropped with Ambarella (*Spondias Dulcis* Parkinson)". *Journal of Coffee Science* V.15, N° 1, 2020.

-2018-

5. Bainbridge, M. L.; Saldinger, L.; Barlow, J.W.; Alvez, J.; Roman, J.; Kraft, J. 2018. "Alteration of rumen bacteria and protozoa through grazing regime as a novel way to enhance the bioactive fatty acid content of bovine milk". *The British Journal of Nutrition* (*link*).

-2016-

6. Bainbridge, M.; Egolf, E.; Barlow; J.; Alvez, J.; Roman, J.; Kraft, J. "Milk from cows grazing on cool-season pastures provides an enhanced profile of bioactive fatty acids compared to those grazed on monoculture pearl millet". *Journal of Food Chemistry* (*link*)

-2014-

- Alvez, Juan P.; Matthews, A.; Schmitt Fo. A. L.; Farley, J.; Pitton, Darci. "Avaliação de sistemas de produção leiteira através de nove indicadores de sustentabilidade". *Journal: Cadernos de Agroecologia* – ISSN 2236-7934 (*link*).
- Alvez, Juan P.; Schmitt F., A.; Erickson, J. D.; Farley, J.; Mendez, V. E. 2014. "Transition from semi-confinement to pasture-based dairy in Brazil: Farmers' view of economic and environmental performances". *Journal of Agroecology and Sustainable Food Systems (<u>link</u>).*

-2013-

9. 2013. Schmitt, A.; Farley, J.; Alvez, Juan P.; Alarcon, G.; May Rebollar, P.; "Integrating Agroecology with Payments for Ecosystem Services in Santa Catarina's Atlantic Forest", In: Muradian, R. & Rival, L. "Governing the provision of environmental services." (B) *(link)*

-2012-

 Alvez, Juan P.; Schmitt, A.; Farley, J.; Alarcon, G.; Fantini, A.C. "The Potential for Agroecosystems to Restore Ecological Corridors and Sustain Farmer Livelihoods: Evidence from Brazil". *Journal of Ecological Restoration* (*link*).

-2011-

- 11. Surdi, J., Schmitt Filho, A., Farley, J., Alvez, J. P., & Satschumi, H. (2011). O fluxo de serviços ecossistêmicos na agricultura familiar da Encosta da Serra Catarinense (The flow of ecosystem services in family farming of the Encosta da Serra Catarinense). *Journal Cadernos de Agroecologia.* 6(2), 1-6.
- 12. Farley, J.; Schmitt, A.; Alvez, Juan P.; Ribeiro de Freitas, N. "How Valuing Nature Can Transform Agriculture". *Solutions Journal*, V.2, pp. 64-73, 2011. <u>Online</u>
- 13. Alvez, Juan P. & Matthews, A.; Schmitt, A.; Farley, J. "Sustainability indicators for cattle farms". *Journal: Cadernos de Agroecologia.* V. 6, n. 1. ISSN: 2236-7934.

14. 2010. Farley, J., Schmitt F. A., Alvez, Juan P., Rebollar, P. M. "The farmer's viewpoint: Payments for ecosystem services and agroecologic pasture based dairy production." *Advances in Animal Biosciences* (2010) 1: 490-491. <u>Online</u>

-2009-

- 15. Da Ros, J., Schmitt F., A., Meurer, F., Farley, J., Alvez, Juan P. & Alves, G. 2009. "Farmers Perception about Brazilian Environmental Laws". *Journal: Revista Brasileira de Agroecologia*, v. 4, n. 1. p. 4544-4548. ISSN: 2236-7934.
- 16. Maurer, F., Schmitt, A., Farley, J., Alvez, J., Oldra, A., DaRolt, L., & Francisco, F. (2009). Serviços Ambientais e a Produção de Leite sob Pastoreio Voisin na Agricultura Familiar: Ativos Ambientais que Devem ser Considerados. *Revista Brasileira de Agroecologia*, V. 4, n. 2, 3830-3834. ISSN: 2236-7934.

IN REVIEW

IN PREPARATION

- 1. Faulkner, J. and Alvez, J. Compaction Alleviation via mechanical versus pasture cropping *Journal* of Soil Water Conservation Society.
- 2. Alvez, J.; Barlow, John, Roman, J.; Kraft, J. "Grazing Behavior and Forage Use across Diets". *Journal of Rangeland Ecology & Management*.
- 3. Alvez, J. P.; Matthews, A.; Erickson, J. D. "Dairy management systems comparison across sustainability indicators". *Journal of Sustainable Science*.
- 4. Effects of Shade on Forage Yield and Quality. Journal TBD.
- 5. Alvez, J.; Roman, J.; Barlow, J.; Kraft, J. "Assessing Habitat Structure on Agricultural Biodiversity". *Journal: PNAS*
- 6. Alvez, Juan P.; Erickson, J. D.; Farley, J.;; "Livestock Management, Ecosystem Services and Sustainable Livelihoods". *Journal of Agriculture, Ecosystems and Environment*.
- 7. Alvez, Juan P.; Colby, J. "Addressing Restoration and Farmer's Livelihoods Strategies at Pine Island Farm". *Journal of Agriculture, Food Systems and Community Development.*
- 8. Roman, J.; Alvez; J. P.; Barlow, J.; Kraft, J. Biodiversity and Livestock Wellbeing. (TBD)
- 9. Alvez, Juan P. & Murphy, W. "Irrigation, N., and Soil Amendment Effects on Pasture Forage Yield and Quality". *Journal: Renewal Agriculture and Food Systems*.
- 10. Alvez, Juan P. Before feeding nine-billion (Journal TBD)

REPORTS

-2021-

- 1. Bedding strategies that promote udder health and milk quality by fostering a beneficial microbiome on organic dairy farms (Forthcoming)
- 2. Vermont Food System Plan Product Brief: Agroforestry. Farm to Plate. Agency of Agriculture, Food and Markets (Link)

-2019-

- 1. "Comparing the nutrient value of eight compost sources".
- 2019. Silvopasture Management Guide. J. Meller; B Chedzoy; P. Smallidge; J Orefice; J. Alvez; K. Hagen; E. Roberts. EPSCoR-SBIR. (*forthcoming*)

-2018-

 Rachel E. Schattman, V. Ernesto Méndez, Scott C. Merrill & Asim Zia (2018). Mixed methods approach to understanding farmer and agricultural advisor perceptions of climate change and adaptation in Vermont, United States, Agroecology and Sustainable Food Systems, 42:2, 121-148, DOI: 10.1080/21683565.2017.1357667

-2016-

- 4. Managing Grazing to Improve Climate Resiliency. USDA-Northeast Climate Hub (Link).
- 5. Biodiversity and Livestock Wellbeing Final Project Report. Northeastern SARE.
- 6. A progress report from the Vermont Agricultural Resiliency in a Changing Climate Initiative. -2015-
- 7. Bedding Practices and Costs in New England. Authors: Matt Smith and Charles Simms (UNH Master's Student), Jennifer Colby (UVM Extension), and Dr. Juan Alvez (UVM Extension).
- 8. Briefing Sheets on Issues in Vermont Sustainable Agriculture: Grazing and Livestock. pdf.
- 9. Biodiversity and Livestock Wellbeing Annual Project Report. Northeastern SARE.

TECHNICAL ARTICLES FOR GENERAL AUDIENCES

-2019-

- 1. How management-intensive grazing equals supporting, provisioning, regulating and ecosystem services?
- 2. How can increases soil organic matter add up to greater carbon sequestration (forthcoming)
- 3. What does increased soil organic matter mean for water on the farm? (link)
- 4. How can increases soil organic matter add up to greater productivity? (link)
- 5. Rotational Grazing, More roots, less plowing building soil health on a Champlain Valley Research Farm (<u>link</u>)
- 6. Cocktail Cover Crop Grazing Trials on a Champlain Valley Research Farm (<u>link</u>)

-2018-

- 7. Managing hayfields to include nesting birds. (link)
- 8. Why are horses such good cow followers? (<u>link</u>)

-2017-

- 9. Can cows shoot? (<u>link</u>)
- 10. Have you seen a cow working overtime? (link)

-2016-

11. Solutions: A Carbon Campaing. Green Energy Times. Issue 40. (link)

-2015-

- 12. How managing for increased biodiversity can help farmers. <u>pdf</u>. Re-printed by Cornell Univ. Extension link.
- 13. Grazing and Conservation in Brazil and Vermont: More Alike Than You Might Think pdf
- 14. Soil moisture sensors can help manage grazing. VT Pasture pdf
- 15. 'Baby, it's Cold Outside': Watch out for Livestock! pdf. Republished at NODPA 2016.a
- 16. Consider Pearl Millet for "summer slump". onpasture.com.

-2014-

17. Nutrient Management. Ch 3, Section 7. Vermont Farm to Plate Strategic Plan. Jake Claro. (link)

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- 18. Potential Alternatives for Rising Bedding Costs in New England Dairies. UNH-UVM Executive Report by: Lou Simms, Matt Smith, **Juan Alvez**, Jenn Colby, and John Aber
- 19. Environment and Behavior: Biodiversity and Cattle Well-being. NODPA
- 20. Grazing sequentially vs. pasture skipping. onpasture.com
- 21. Life and soil minerals. VT Pasture Networks and onasture.com.
- 22. Socialize With Cows to Promote Soil Fertility. onpasture.com.
- 23. Ecosystem Services: Consider Wildlife Habitat for Higher Productivity. VT Pasture Network.
- 24. Batt-Latch: "Set it and forget it!"
- 25. Pasture Management: Rhizobia and Nitrogen. VT Pasture Network
- 26. Forages: perennial or annual and what species are better? VT Pasture Network.

-2013-

- 27. Socialize With Cows to Promote Soil Fertility. VT Pasture Network.
- 28. Animal Behavior: Avoiding Grazing Selectivity. <u>VT Pasture Network</u>.
- 29. Agroforestry: trees, bushes, crops and intensive grazing. NODPA, VT.

-2012-

- 30. "Optimizing animal welfare in bedded pack barns". Pasture Improvement Tools.
- 31. "Pasture Management and Soil Conservation". Pasture Improvement Tools.
- 32. "Pasture Management and Water Quality". Pasture Improvement Tools.
- 33. "Why Management-intensive grazing? Our animals are already on grass". <u>Pasture Improvement</u> <u>Tools</u>.
- 34. "Agroforestry Systems". Pasture Improvement Tools.
- 35. Bishopp, T., Wagner, R., Alvez, Juan P. "Pasture walk lesson: Healthy pastures make healthy herds". Lancaster Farming. Northern Edition, 09/29/2012. <u>On-line</u>
- 36. Bishopp, T., Wagner, R., Alvez, Juan P. "Healthy Pastures = Healthy Herds and Happy Farmers". Country Folks West. Section A, 10/01. <u>On line</u>
- 37. 2011. Farley, J., Schmitt F^o. A., Alvez, Juan P. Ribeiro de Freitas, N. 2011. Ecosystem Services, Agriculture and Economic Institutions. Mountain Ski Group Articles.
- 38. 2010. Alvez, Juan P. "Managed grasslands can help reducing greenhouse gas emissions improve economic outcomes and enhance rural communities". Sale Feed Magazine. Beijing, China.
- 39. 2009. Matthews, A., Alvez, Juan P., Cooper. C., Kestenbaum, D., Purchase N. "Dairy Stewardship Alliance: Sustainability Indicators for Dairy Farms". UVM-Center for Sust. Agriculture. <u>Online</u>:

viii. GRANT PARTICIPATION

-2020-

- 1. NE-SARE. "Evaluation, guidance and training on carbon management tools for farmers in Vermont".
- 2. NSF FW-HTF. "Testing a responsible innovation approach for integrating precision agriculture (PA) technologies with future farm workers and work" (*PI: M. Gardezi, USD; Co-PIs: D. Rizzo, A. Zia*).
- 3. Vermont Agency of Agric Food & Markets. Something old and something new: vegetable legumes for Vermont growers". (P.I. Dr. Eric von Wettberg, *unfunded*).
- 4. USDA/NRCS/CIG. "Researching Strategies for Improving Vermont's Soil Health Through Perennial Grazing Crop Development" (PI: Dr. Caitlin Pries, Dartmouth College; *funded*).

-2019-

- 5. SARE Partnerships. "Benefits of Measuring VT Farms' Carbon Footprint: Piloting Comet at Philo Ridge Farm".
- 6. SARE Professional Development Grant. Training Forestry and Agriculture Professionals in the Application of Silvopasture Grazing Systems. (NE, Multi State, PI: Dr. E. Roberts).
- 7. Albert T. Sloan Foundation. "Development, testing, and use of miniaturized electronic sensors to assess greenhouse gases and water-use efficiency" (PI: Alvez; not funded)
- 8. SARE Farmer Grant Feasibility of Integrating Sheep into Vermont Vineyards: An Initial Look at Ecologic and Economic Benefits. (*PI: E. Joseph; funded*)
- 9. 2018. OREI Bedded Packs & Bacteriology (PI: Dr. Barlow; Neher, D. Andrews, T.; Alvez, J.; Colby, J.; Funded ~\$1M).
- 10. **2016.** Enhancing Research and Education for Grass Farmers. (*Privatetly funded \$395,030, 5 years*). **-2015-**
- 11. "Fine-tuning supplementation strategies on organic dairies during the pasture season to improve productivity" (Co-Inv., PI Dr. S. Greenwood). USDA-OREI (Funded \$976,000).
- 12. Long Island Sound Watershed, Regional Conservation Partnership Program. USDA-NRCS, (Collaborator), led 6 N.Eng. Land Grant Universities (*Funded, \$895,000 UVM*).

-2014-

- 13. "Demonstrating Effects of Compaction Best Management Practices on Soil Properties and Water Movement" (Co-PI, PI Dr. J. Faulkner). National CIG (Funded \$349,577).
- 14. "Tools for grass farmers to monitor grazing behavior and forage utilization in real time". SARE Partnerships (PI). (*Funded \$13,095*).
- 15. 2013. "Biodiversity and cattle well-being: Forage diversity, microbial diversity, herd health, and milk composition". UVM REACH Grant (Co-PI, PI Dr. J. Roman). (*Funded \$50,000*)

-2012-

- 16. "Teaching Livestock to Eat Weeds" (Co-PI, PI J. Colby). SARE (Funded \$171,575)
- 17. "MIG/Mob Comparison" SARE (PI) (Unfunded. Accepted for full submission) 2011. "Land Use, Biodiversity, Ecosystem Services, and Human Health in the Brazilian Atlantic Forest." Collaborative Faculty Funds Gund Institute, Farley and others. (Co-PI, PI J. Farley), (Funded \$40,000).
- 2009-2012. "Agroecology and Payments for Ecosystem Services in Santa Catarina (Brazil) Atlantic Forest". P.I. Abdon Schmitt Fo.; John Winsten; Juan P. Alvez; Joshua Farley; Gisele Alarcon; Alfredo Fantini. (Co-Inv), (*Funded UVM/GIEE*).
- 19. 2008-2010. "Avaliação dos serviços ecossistemicos decorrentes da implementação da produção agroecológica de leite sob Pastoreio Voisin nas propriedades familiares de Santa Catarina". P.I.: Abdon Schmitt Fo.; Felipe Giassi Maurer; Juan P. Alvez; Joshua Farley; Gisele Alarcon; Alfredo Fantini. (Co-PI), (*Funded UVM/GIEE*).
- 20. 2007-2012. "O Voisin Silvipastoril: Desenhando sistemas silvipastoris regeneradores das funções e serviços ecossistêmicos". Abdon Schmitt Fo.; Fabian Busnard; Rafael Ruschel; felipe Francisco; Juan P. Alvez; Joshua Farley, Marcelo Warmling; (Co-PI), (*Funded, UVM ARLG and GIEE*)
- 21. 2007-2010. "Programa de Fortalecimento da Agricultura Familiar através da Produção Ecológica inserida nos Processos de Recuperação Ambiental e Gestão da Paisagem". Abdon Schmitt Fo.; Fabian Busnard; Flavia Lapa; Felipe Francisco; Juan P. Alvez; Joshua Farley; Glaico Sell. (Co-PI) (Funded, Figueirense Football Club & Ministry for Ag. Development)

- 22. 2007. NRCS, Conservation Innovation Grant. Winter Grazing technologies and bedded pack. Grazing Specialist, (Co-PI), (*Funded*).
- 23. 2007. "Payments for Ecosystem Services: From Local to Global". Project and Workshop in Costa Rica (Co-organizer, presenter). (Collaborator) Funded by Bluemoon Foundation, (*Funded*).
- 24. 2006-2007. MIMES Project (Multiscale Integrated Models of Ecosystem Services). Funded by the Moore Foundation (Collaborator), (*Funded*).
- 25. 2005-2006. USDA-Sustainable Agriculture Research and Education Research Project on "Sustainable Indicators for Dairy Farms". UVM, Ctr. for Sust. Agriculture, (Collaborator) (*Funded*).
- *ix. INVITED PRESENTATIONS* (*L.: guest lectures P: presentation W.: workshops R.T.: roundtables*) -2021-
 - 1. (P) How rotational grazing can regenerate soils
 - 2. (R.T.) "Beef Meat" Panel held at the Rural Association of Tacuarembo (ART), Uruguay with the three main meat packing CEOs and government agencies.
 - 3. (W) "Soil Regeneration with Management-Intensive Grazing". Keynote Speaker. International Webinar for Pasture and Livestock Farmers. Panelist. SUPRA, Foro Rural, Club Internacional Ganadero (Link).
 - 4. (P) "Grazing and Soil Health Research in Vermont". Vermont Agriculture and Quality Partnership. (Link, *min 13:40*)
 - 5. (W) "How can Farmers be Carbon Positive with Management-Intensive Grazing". Panelist. International Webinar for Pasture and Livestock Farmers. Panelist. SUPRA, Foro Rural, Club Internacional Ganadero (Link).
 - 6. (P) "Regenerative Agriculture". Inst. de Energía e Ambiente (PROCAM) Univ. de Sao Paulo, Brazil.
 - 7. (P) "Regenerative Agriculture". Agroecossistemas. Centro de Ciencias Agrarias. Univ. Federal de Santa Catarina. Brazil.
 - 8. (W). "Steps to Start a Rotational Grazing". International Webinar for Pasture and Livestock Farmers. Coordinator. SUPRA, Foro Rural, Club Internacional Ganadero. (Link 1, Link 2)
 - 9. (L) Two Lectures at UMaine, AVS 446 "Forage Science and Range Management" and AVS 455 Animal Nutrition. Prof. J. Romero's Class.
 - 10. (P) Dairy Management Systems Comparison Across Sustainability Indicators. Presentation of a twoyear study to VAAFM.

-2020-

- 11. (P). Planificacion Alimentaria en Pastoreo Racional (Feed planning in managed grazing), SUPRA, Uruguay
- 12. (L) Carbon Farming. UVM Honors College HCOL 186D.
- 13. (P) Regenerative Agriculture: Research Updates from a Champlain Valley Farm. Anthropocene to the Ecozoic Webinar Series #2. Gund Institute for Environment.
- 14. (L) Agroforestry Systems. UVM Honors College HCOL 186D.
- 15. (L) Waste to Value class. CDAE 195 UVM.
- 16. (P) Carbon Farming. Vermont Sheep and Goat Association. 2020 VT Farm Show.
- 17. (R.T.) Meeting with VT and Washington DC Staff to Senator B. Sanders's) to discuss topic lines on sustainable agriculture and environment for the "Green New Deal" draft. Burlington, VT.
- 18. Cals Faculty Meeting + Philo Ridge Farm

-2019-

- 19. (W) Tangible Advantages of Manag. Grazing 4 Soil Health (Link). Philo Ridge Farm Charlotte, VT.
- 20. (P) The Story behind Philo Ridge and UVM Research. Presentation to CALS Board of Advisors.
- 21. (L) Waste to Value class. CDAE 195 UVM
- 22. (P) Agroforestry Viability Case Study in Brazil. Farmland Access Group, F2P. Richmond Town Clerk.
- 23. (P) Agroforest Studies in Brazil. Tree Fodder Seminar 2019: Trees in the food chain for Climate Remediation. 3Streams Farm, Maine (Link)
- 24. (W) Pasture and Soil Health Field Day. Glynnwood Center for Food and Farming, Cold Spring, NY (Link 1; Link2)
- 25. (P) management-intensive Grazing. Uruguayan Society of Rational Grazing First meeting. Tacuarembo, Uruguay. (<u>Link1; Link2</u>)
- 26. (P) Ecosystem services and sustainable agriculture. The University of the Republic. Centro Universitario Regional, Rivera, Uruguay. (Link)
- 27. (P) Sustainable agriculture and environment; video presentation to students of Escuela Integral Montevideo, Uruguay (Link).
- 28. (P) VT Grass Farmers Association meeting. Presentation on current Grazing Research. Philo Ridge Farm, Charlotte, VT
- 29. (P) Soil health, Agriculture and Climate in New England: Scientific Findings, Farming Practices, and Policies. Tufts University, Medford, MA.
- 30. (P) 13th Annual Vermont Organics Recycling Summit (VORS). VTC, Randolph, VT (two-presentations).
- (P) The Soil Series: Grassroots for the Climate Emergency (Building the Soil From the Ground Up). Montpelier, VT... (<u>link</u>)
- 32. (L) Agroforestry Systems. Green Mountain College.
- 33. (P) Compost and Johnson-Su Composting consulting. Zen Center, Shelburne, VT.
- 34. (P) Philo Ridge Farm Research goals and preliminary presentation
- 35. (P) Ecosystem Services and Payment for Ecosystem Services. 3rd. Annual Water Quality Meeting VACD, VTC, Randolph, VT.
- 36. (P) Soil & Pasture Research Updates. 21rd Annual VT Livestock and Grazing Conf." Fairlee, VT.
- 37. Food Waste to Value class. CDAE 195 UVM

-2018-

- 38. (W) Johnson-Su Composting Workshop. Ctr. For Technology. Essex, VT
- 39. (P) "Exploring Food System Resilience in the US and Abroad: Social, Economic, & Agricultural Policies & Outcomes". Farm-to-Plate Annual Gathering (Link)
- 40. (P) "Agroecology and Grazing Management". Champlain College, Sustainability Class.
- 41. (W) Compost Aeration and Heat Recovery. CAV/Agrilab/VT Nat. Ag products/UVM Ext./UNH/VAAFM/. Middlebury, VT. (Link)
- 42. (W) Decision Making Workshop on Bobolink Conservation Habitat. 5 workshops. UConn. and UVM. (Link)
- 43. Waste to Energy class. CDAE 195 UVM
- 44. (R.T. online). Sustainable Farming and Grazing Management. Sustainable Agricultural Summit. (Link)

45. (L) "Silvopasture and Agroforestry". In: Prof. Don Ross, "Soils and Sustainable Civilization". UVM Honors College

-2017-

- 46. (L) "Agroecology and Grazing Management". Champlain College.
- 47. 2017. (L) Conventional and Sustainable Animal Agriculture. University of Vermont.
- 48. 2017. (L) Bedded Packs: Managing Nutrients, Cattle and Energy. University of Vermont.
- 49. Food Waste to Value. CDAE 195 UVM
- 50. 2017. (W) Is There an App for That? "21st. Annual VT Livestock and Grazing Conf." Fairlee, VT.
- 51. 2016. (RT; P) "Dairy Stewardship Incentives. 6th Annual Farm to Plate Network Gathering. Killington, VT

-2016-

- 52. (P) Agroecology and the Path Towards Sustainable Agricultural Systems. Univ. of Florida.
- 53. (P) A Vision for Developing Livestock and Grazing Systems in Oregon. Oregon State Univ.
- 54. (P) Ontario Forage Council Conference. Elmwood Ontario.
- 55. (P) Management-Intensive Grazing. Brussels, Ontario.
- 56. (W) A Holistic Approach to Livestock Production. "20 Annual VT Livestock and Grazing Conference" Fairlee, VT.
- 57. (W) Observation Highlights from Three Research Farms. "20 Annual VT Livestock and Grazing Conference" Fairlee, VT.
- (W) Biodiversity and Livestock Wellbeing. eOrganic (Webinar)
 -2015-
- 59. (RT; P) "Payment for Ecosystem Services and Market Based Incentive Systems. 5th Annual Farm to Plate Network Gathering. Killington, VT (<u>link</u>).
- 60. (L) "Agriculture and Biotechnology". ENP 250: Environmental Policy and Globalization". Champlain College, VT
- 61. (L) "Place Based Environmental Study (ENP 300)". Champlain College, VT.
- 62. (L) "Agriculture". ENP 250: Env.. Policy and Globalization". Champlain College, VT.
- 63. (L) Pasture & Livestock Management. Introd. o Permaculture. St. Michael's College, VT.
- 64. (L) Introduction to Environmental Studies. Saint Michael's College, VT.
- 65. (P) "Biodiversity and Cattle Well-Being: Microbial Shifts and Cattle Health Within Diets". 19th Annual VT Grazing and Livestock Conference, VT.
 -2014-
- 66. (L) "Conventional vs. Sustainable Agriculture and Ecosystem Services". Environmental Conflict Resolution. Saint Michael's College, VT.
- 67. (L) "Women in Sustainable Agriculture and Development". Saint Michael's College, VT.
- 68. (L) "Agroecosystems". Introduction to Environmental Studies. Saint Michael's College, VT.
- 69. (L) "Place Based Environmental Study (ENP 300)". Champlain College, VT.
- 70. (L) "Agriculture and Biotechnology". ENP 250: Environmental Policy and Globalization". Champlain College, VT.
- 71. (P) NRCS, Agroforestry, Silvopasture and Riparian Buffer Flash Grazing. Colchester -2013-

- 72. (W) 6 Bedded Packs Workshops in Sheldon (2), MIddlebury, White River Jct., Rutland and St. Johnsbury, VT.
- 73. (L) "Sustainable Agriculture presentation". Saint Michael's College, VT.
- 74. (W) Youth IDA. UVM Center for Sust. Agriculture, Extension, at Osprey Hill Farm, Middlesex, VT.
- 75. (P) "Agroecology, Farmer Livelihoods and Ecosystem Restoration in Santa Catarina". 7th Biennial U.S. Society of Ecological Economics, Burlington VT.
- 76. (P; W) "Biodiversity and Livestock Wellbeing" (NR 385 Atelier), Instructor: Dr. Joe Roman. RSENR, University of Vermont.
- 77. (G.L.) "The Role of Women in Agriculture". Instructor: Dr. Anjanette DeCarlo. Dept. of Environmental Sciences Saint Michaels College, VT.
- 78. (G.L.) "Agriculture, Environment and Conflict Resolution". Instructor: Dr. Anjanette DeCarlo. Dept. of Environmental Sciences, St. Michaels College, VT.
- 79. (G.L.) Conv. Agriculture: Problems and Potential Solutions". Instructor: Dr. Anjanette DeCarlo. Dept. of Environmental Sciences, St. Michaels College, VT.
- 80. (P) "Bedded Pack Systems: Managing Time, Nutrients and Costs". "17 Annual VT Grazing & Livestock Conference", Fairlee, VT.

-2012-

- 81. (G.L.) "The role of agroecology in a changing environment". Instructor: Dr. Anjanette DeCarlo. Dept. of Environmental Sciences, Saint Michaels College, VT.
- 82. (G.L.) "Pasture management and ecosystem services". Instructor: Katie Goodall. Dept. of Plant and Soil Sciences, University of Vermont.
- 83. (G.L.) "Grazing, agroecosystems and sustainable livelihoods". Instructor: Katlyin Morris. Dept. of Plant and Soil Sciences, University of Vermont.

-2011-

- 84. (G.L.) "Change and Resilience in Vermont Food Systems: Research and the implementation of the Farm-to-Plate Strategic Plan". The Center for Research on Vermont. Bilings North Lounge, University of Vermont.
- 85. (P; R.T.) "First Pan-American Meeting on Agroecological Pasture Management: Voisin Grazing in the Americas". Roundtable on grazing in different biomes. Chapeco, SC Brazil.
- 86. (G.L.) "Hispanic folklore: history, traditions and current trends: the case of Uruguay". Department of Romance Languages, University of Vermont.

-2010-

87. (G.L.) Ecosystem management and its effects on ecosystem services and human wellbeing. Community College of Vermont.

-2009-

- 88. (P) Fundamentals of Management Intensive Grazing. "XI International Agroecology Short Course". Burlington VT.
- 89. (P) "Low Carbon Farming: Sustainability Indicators from the Dairy Stewardship Alliance in Vermont". ASAS-CAAV (American Association of Animal Sciences) (Chinese Association of Animal Sciences and Veterinary Medicine) Asia and Pacific Rim Animal Science Conference. Beijing, China.
- 90. (G.L.) "Livestock Integration in Agroecosystems". Agroecology Class. UVM.
- 91. (G.L.) "Ecosystem Services: Ecological Economic Aspects". Community College of VT.

-2008-

- 92. (G.L.) "Ecosystems Services, Payments for Ecosystems Services (Case Study: Costa Rica)" at Green Mountain College, Poultney, VT.
- 93. (P; R.T.) Presentation at the "XII International Conference of Environmental Law". Organized by OAS and Fundação Um Planeta Verde. Sao Paulo-Brazil.
- 94. (G.L.) "Ecosystems Services, Payments for Ecosystems Services and Responsible Consumption" presented at the University of São Jose Brazil.
- 95. (G.L.) Current Economic Paradigm and its effects on Ecosystems Services. Community College of Vermont.

-2007-

- 96. (P) University of Vermont & Winrock International. "Management Intensive Grazing" presentation to Kazakh Ministry of Agriculture visiting Committee.
- 97. (P; W) "Payments for Ecosystem Services: From local to Global". International Conference and Workshop in Costa Rica.

-2006-

98. (P.) "Irrigation, Nitrogen, and Soil Amendment Effects on Pasture Forage Yield and Quality". Invitation to the VT Grazing Conference, Randolph, VT.

x. **PROJECTS (selected)**

-2021-

- 1. Payment for Ecosystem Services Working Group, Vermont.
- 2. Managing Pasture for Healthy Farms and Soils Across Vermont (VLT, Biological Capital, UVM, UVM Ext.).

-2020-

- 3. An Exploration of the Critical Factors for Resilience at Meach Cove Farms: Biodiversity, Water Quality, Food Production and Energy Generation for Vermont Communities (PI: Faulkner)
- 4. Social and Economic Factors and Resilience in Vermont's Food System: Critical Lessons from COVID –19 (Co-Pis: Hogdson-Reynolds. Funded: \$19.7K)Infiltration
- 5. Determine water infiltration rates in soils with perennialized cool-seasoned grazing pastures (PI: Alvez)
- 6. Researching Strategies for Improving Vermont's Soil Health Through Perennial Grazing Crop Development

-2019-

- 7. Feasibility of Integrating Sheep into Vermont Vineyards: An Initial Look at Ecologic and Economic Benefits. SARE FG19-018.
- 8. Beef Improvement Project: Genetics to obtain a more uniform intramuscular fat (marbling). Spring Rock Farm, Intervale Center, University of Vermont Extension.
- 9. Utilizing agricultural sensors to detect greenhouse gases.

-2018-

- 10. "Comparing the nutrient value of on-farm compost: 8 case studies" (on-going)
- 2016. Enhancing Research and Education for Grass Farmers. Philo Ridge Farm, Charlotte, VT -2015-
- 12. "Fine-tuning supplementation strategies on organic dairies during the pasture season to improve productivity" (Co-Inv., PI Dr. S. Greenwood). USDA-OREI
- 13. Long Island Sound, Regional Conservation Partnership Program. USDA-NRCS.

- 14. 2014-present. Demonstrating Effects of Compaction Best Management Practices on Soil Properties and Water Movement." Faulkner, J.; Alvez, J.; Colby, J.; Hagen, K.; Balzano, R.
- 15. 2013-2015. Energy Savings through Holistic Planned Grazing and Management. NRCS-CIG
- 16. 2012-2015. Using Grass-Based Livestock Farms to Demonstrate Regenerative Ag. NRCS-CIG
- 17. 2010-Present. "Agroecology and Payments for Ecosystem Services in Santa Catarina's Atlantic Forest/ PSE e Agroecologia". Schmitt, A.; Alvez, J.; Farley, J.; Fantini, A.; Alarcon, G.; Battisti, L.
- 18. 2010. Research Assistant at the University of Vermont, Center for Sustainable Agriculture and Cornell University Forest Management and Shiitake Mushroom Project.

xi. TEACHING

I design and deliver lectures, readings, discussions and debates; organize guest speakers and field trips; develop and grade critical thinking assignments, research papers, reaction/reflection papers, reading quizzes, exams and group projects; provided guidance on papers and projects; wrote recommendations; advised independent and group studies; facilitate volunteer opportunities; supports teaching assistants. Below are the listed courses I taught:

- 1. 2021. PSS/ASCI 143 Forage and Pasture Management. Dept. of Plant and Soil Science. UVM
- 2. 2020. Presented syllabus for future PSS 143. Forage and Pasture Management (Fall 2021).
- 3. 2015. (Fall), NR 285. Restoring Ecosystem Services Across Landscapes. University of Vermont.
- 2015. "Agroecology, Farmers' Livelihoods and Ecosystem Services in Brazil's Atlantic Forest". (UVM Cross-listed CDAE 295, 395, NR 385, MPA 395). Problem Solving Course w/ workshop traveling component to Brazil. Co-Instructor with Dr. Joshua Farley. <u>Link</u>
- 5. 2014. "Livestock and Grazing Management Systems". Sterling College. Co-Instructed with Dr. Louise Calderwood and Jenn Colby.
- 6. 2013. "Livestock and Grazing Management Systems". Sterling College. Co-Instructed w/ Dr. Louise Calderwood Jenn Colby.
- 7. 2010. "Agroforestry & Permaculture", Nicaragua. Participated in the planning w/A. Matthews.
- 8. 2009. "Restoring Ecosystem Services across Landscapes". (UVM, cross-listed NR 385 and CDAE) Problem Solving Course, co-instructed w/ Dr. Roelof Boumans.
- 9. 2008. "Sustainable Food Production" (UVM, NR 378), co-instructed with Dr. Roelof Boumans.

TEACHING ASSISTANT (University of Vermont)

- 1. 2010. "Introduction to Environmental Sciences" ENSC 001 w/ Dr. Anjanette DeCarlo.
- 2. 2010. "Ecosystem Management" NR 205 w/ Dr. Austin Troy.
- 3. 2009. "Wildlife and Wetland Ecology" WFB 272 w/ Dr. David Hirth.
- 4. 2008. "Natural History and Field Ecology" w/ Dr. John Donnelly.
- 2003-2006. Graduate Teaching Assistant at six courses (Department of Plant & Soil Sciences): Permaculture, (w/Dr. Christine Negra); Agroecology (w/Dr. Wendy S. Harper); Ecological Agriculture (w/John Hayden); Pasture Management (w/Dr. Bill Murphy); Seminars in Ecological Ag. (w/Dr. Milton Tignor); Organic Food Production, and Plant Propagation (w/Dr. Mark Starret).
 99. 2006-2013. (P) Several Latin America and Uruguay culture talks at VT Schools.

xii. CONFERENCE PARTICIPATION, PROCEEDINGS, SHORT PAPERS and POSTERS

-2021-

1. Emerging Markets for Ecosystem Services and Soil Carbon Confirmation. The Nature Conservancy.

- 2. Vermont Dairy sustainability. Vermont Agency of Ag., Food and Markets
- 3. (Pres.) Practical Tips on Grazing Management. "25 Vermont Livestock and Grazing Conference".

-2020-

- 4. (Poster). Evaluating compaction BMP effects on soil properties and demonstration of soil moisture monitoring for compaction prevention in heavy clay soils of the Northeast. J. Faulkner; J. Alvez; J. Gorres; Kristin Williams. Northeast Pasture Consortium. Fairlee, VT
- (Poster). Evaluating compaction BMP effects on soil properties and demonstration of soil moisture monitoring for compaction prevention in heavy clay soils of the Northeast. J. Faulkner; J. Alvez; J. Gorres; Kristin Williams. 24 Annual Livestock and Grazing Conference. Fairlee, VT
- 2019. (P) Milk Production of Organic Dairy Cattle is Influenced by Altering Supplemental Feed Protein Content. A. Ayers, H. Darby, J. Colby, S. Ziegler, J. Alvez, S. Bosworth, J. Kraft, and S. L. Greenwood. NE Pasture Consortium. Maryland

-2018-

- 7. (P) "Exploring Food System Resilience in the US and Abroad: Social, Economic, & Agricultural Policies & Outcomes". Farm-to-Plate Annual Gathering (<u>link</u>)
- 8. (Poster). Survey of Dairies Accross Vermont. A. Ayres; H. Darby; J. Colby; S. Ziegler; J. Alvez; S. Bosworth; J. Kraft; S. L. Greenwood. NE-ADSA/ASAS Annual Meeting.
- 9. (Poster). Evaluating compaction BMP effects on soil properties and demonstration of soil moisture monitoring for compaction prevention in heavy clay soils of the Northeast. J. Faulkner; J. Alvez; J. Gorres; Kristin Williams. 73rd Soil Water Conservation Society. Albuquerque NM.
- 10. (P) "Rousal research roundup" VT Grazing and Livestock Conference. J. Faulkner; J. Alvez.
- (P) Updates from Research Lab at Philo Rodge Farm, VT Grazing and Livestock Conference.
 -2017-
- 12. (Poster). "Enhancing Research and Ed for Grass Farmers". Northeast Pasture Consortium. Hagerstown, MD.
- 13. (Poster). "Deep Bedded Pack Livestock Facility Planning Tool". Bredweg, S.; Jerose, B.; Colby, J.; Thompson, B.; Alvez, J. Northeast Pasture Consortium. Hagerstown, MD.
- (Poster). UVM, Center for Sust. Ag. Pasture Program 2016 Annual Report. Northeast Pasture Consortium. Hagerstown, MD. Colby, J.; Alvez, J.; Hagen, K. Northeast Pasture Consortium. Hagerstown, MD.
- 15. Is there an app for that? "21 Annual VT Livestock and Grazing Conference" Fairlee, VT. -2016-
- 16. "Carbon Farming: A Perennial Crops Approach for Global Food Security

and Climate Change Mitigation" Eric Toensmeier. Agroforestry in Action. Univ. of Missouri.

- Bainbridge, M. L., L. K. Saldinger, J. W. Barlow, J. P. Alvez, J. Roman, and J. Kraft. 2016. 1640 Rumen protozoal communities are dynamic after a dietary switch from conserved forage to pasture. J. Anim. Sci. 94:799-799. doi:10.2527/jam2016-1640 (Symposia Joint Annual Meeting, American Soc. of Animal Science, Salt Lake City, Utah).
- Rumen bacterial communities continue to shift five weeks after switching diets from conserved forage to pasture. M. L. Bainbridge, L. K. Saldinger, J. W. Barlow, J. P. Alvez, J. Roman and J. Kraft. J. Anim. Sci. 94: 783-783 doi:10.2527/jam2016-1609 (Poster, Joint Annual Meeting, American Soc. of Animal Science, Salt Lake City, Utah (<u>link</u>)
- (Poster) Milk bioactive fatty acids decrease in cows grazing pearl millet versus a cool-season pasture. M. L. Bainbridge*, E. Egolf, J. W. Barlow, J. P. Alvez, J. Roman and J. Kraft, University of Vermont, Burlington. Joint Annual Meeting, American Soc. of Animal Science, St Lake City, Utah. (<u>link</u>)

Page 15 of 23

- (Presentation) Before Feeding 9 Billion... (Transforming the Economy Sustaining Food, Water, Energy and Justice). International Society for Ecological Economics, Univ. of District of Columbia. (<u>link</u>)
- (Poster) "Results of Energy Audits on Grazing Farms in VT and NY". Garza, E.; Colby, J.; Parsons, R.; Cannella, M.; Alvez, J. "20 Annual VT Livestock & Grazing Conference" Fairlee, VT".
- 22. (Worksh.) A Holistic Approach to Livestock Production. "20 Annual VT Livestock and Grazing Conference" Fairlee, VT.
- 23. (Worksh) Research Highlights from Three Farms. "20 Annual VT Livestock and Grazing Conference" Fairlee, VT.

-2015-

- 24. (P) Payment for Ecosystem Services and Market Based Incentive Systems. 5th Annual Farm to Plate Network Gathering. Killington, VT (<u>link</u>)
- 25. (A) Enhancing Water Quality Protection in Vermont. Enosbourg Falls, VT
- 26. (P) "Biodiversity and Cattle Well-Being: Microbial Shifts and Cattle Health Within Diets". 19th Annual VT Grazing and Livestock Conference.

-2014-

- 27. (P) Alvez, Juan P.; Matthews, A.; Schmitt Fo. A. L.; Farley, J.; Pitton, Darci. "Avalição de sistemas de produção leiteira através de nove indicadores de sustentabilidade". 4th Agroecology Conference in Federal District and Region. Brasilia, Brazil (10/09/14)
- 28. (A) "Grasstravaganza" Grazing and soil health conference. Morrisville, NY.
- 29. (A) "Northeast Pasture Consortium. Penn State. State College, PA.
- 30. (A) "6 Annual Winter Green Up Grass-Fed Grazing Conference", Lathan, NY.
- 31. (A) "2 Northeast Silvopasture Conference", Lathan, NY.
- 32. (P) Schmitt F., Abdon L, **Juan P Alvez**, Joshua Farley, Jociel R Surdi, Alfredo Fantine Gisele Alarcon. "Provisión de servicios ambientales y ganadería sobre pasturas: Desde una propuesta local hacia un programa estatal para el sur de Brasil". 2nd International Conference of the Mesoamerican Society for Ecological Economics. Costa Rica.

-2013-

- 33. (P) Alvez, Juan P.; Matthews, A.; Schmitt Filho A.L.; Farley, J; "Manejo animal e indicadores de sustentabilidade em Vermont, USA". 8th Congresso Brasileiro de Agroecologia. Porto Alegre, Brazil.
- 34. (P) Nascimento, A.; Schmitt Filho A.L.; Fantine, A.; Farley, J; Alvez, Juan P.; Trevizan, A.; Pitton, D. "Zonificación Ambiental de las Pequeñas Fincas Familiares Localizadas en el Bioma Mata Atlántica: Impacto de la Legislación Ambiental en Tierras Agrícolas". Sociedad Cientifica Latinoamericana de Agroecologia (SOCLA), Peru.
- 35. (P) Roman, J.; Schmitt, A.; Alvez, Juan P. "Biodiversidad y Ecología de las Enfermedades en Sistemas Ganaderos". Sociedad Científica Latinoamericana de Agroecologia (SOCLA), Peru.
- 36. (P) Ruschel, Schmitt, A.; Alvez, Juan P., Fantini, A. and Farley, J. "Voisin silvopastoril: Percepción de los productores lecheros de la capital agroecologica de Santa Catarina", Brasil. Sociedad Científica Latinoamericana de Agroecologia (SOCLA), Peru.
- 37. (P&A) **Alvez, Juan P.** and Ivancic, K. "Impacts of the Agricultural Boom on Uruguay's ecosystem services". 7th Biennial US Society of Ecological Economics, Burlington VT.

- 38. (P&A) Schmitt, A.; Alvez, Juan P.; Farley, J; Claro, J; Farr, M.; Castelo Branco, B. A. Panel Topics:
 - a) "Agroecology, Farmer Livelihoods and Ecosystem Restoration in Santa Catarina".

b) "Vermont sustainable Jobs Fund: Moving Toward Sustainable Agriculture in Vermont".

c) "Unacceptable Trade-Offs: The Conflict between Food Security & Ecosystems Health". US Society of Ecological Economics, Burlington VT. 7th Biennial US Society of Ecological Economics, Burlington VT.7th Biennial US Society of Ecological Economics, Burlington VT.

- 39. (P&A) **Alvez, Juan P.**; Erickson, J.; Farley, J.; Schmitt, A. "Dairy and Sustainability". 2013 Northeast Pasture Consortium Annual Conference & Meeting. Manchester, NH.
- 40. (P&A) Alvez, Juan P., Colby, J. and Gilker, R. "Bedded Pack Systems: Managing Time, Nutrients and Costs". "17 Annual VT Grazing & Livestock Conference", Fairlee, VT.
 -2012-
- 41. (P&A) Alvez, Juan P.; Matthew, A.; Erickson, J.; Farley, J.; Schmitt, A. "Dairy and Sustainability", 5th National Grazing Lands Conference Proceedings. Orlando, Florida. <u>https://www.uvm.edu/~susagctr/whatwedo/projectsresearch/DairySustainability.pdf</u>
- 42. (P&A) Alvez, Juan P. Agroecosystemas y Conservacion. Segundas Jornadas de Economia Ecologica. SEEU. Montevideo, Uruguay. (Video conference).
- 43. Matthews, A. and Alvez, Juan P. "Sustainability Indicators for Low Carbon Farming". In: 'Tackling the Future Challenges of Organic Animal Husbandry'. Gerold Rahmann And Denise Godinho (Editors). 2nd Organic Animal Husbandry Conference Hamburg, Trenthorst, 12-14 September, 2012 <u>http://www.valacta.com/FR/services/Documents/Le%20Savoir%20laitier%20bio%20-%20articles/2nd_IFOAM_OAHC_2012_proceeding.pdf#page=36</u>
- 44. (P) Farley, J., Schmitt, A. Alvez, Juan P., Alarcon, G.; May-Rebollar, P. "Financing Agroecology in Brazil and the World". (NOTE: Farley is listed as first author in the conference proceedings, but Alvez created the poster) 12th Biennial Conf. of the International Society for Ecological Economics and RIO +20. Contributions and Challenges for a Green Economy.
- 45. (P) Alvez, Juan P.; Mathews, A.; Erickson, J.; Farley, J.; Schmitt, A.; Boumans, R.; Mendez, V. E. "Dairy management, Ecosystem Services and Sustainable Livelihoods". International Society of Ecological Economics. Rio de Janeiro, Brazil.
- 46. (P&A) Alvez, Juan P.; Mathews, A.; Erickson, J.; Farley, J.; Schmitt, A.; Boumans, R.; Mendez, V. E. "Dairy management, Ecosystem Services and Sustainable Livelihoods". Grad Student Research Day. University of Vermont.
- 47. (P&A) Alvez, Juan P., Matthews, A., Erickson, J., Farley, J., Schmitt, A., Boumans, R., Mendez, V. "Dairy management, ecosystem services and sustainable livelihoods". NOFA-VT Conference, Davis Canter, University of Vermont.

-2011-

- 48. (P) Schmitt, A.; Farley, J.; Alvez, Juan P. Congresso Brasileiro de Sistemas Agroflorestais. Fortaleza Ceará.
- 49. (P&A) Alvez, Juan P. & Matthews, A.; Schmitt, A.; Farley, J. "Sustainability indicators for cattle farms". First Pan-American Meeting on Agroecological Pasture Management: Voisin Grazing in the Americas". Chapeco, SC Brazil. Online: <u>http://www.abaagroecologia.org.br/ojs2/index.php/cad/article/view/12728/7016</u>
- 50. (P) Surdi, J., Schmitt Filho, A., Farley, J., **Alvez, J. P.**, & Satschumi, H. (2011). O fluxo de serviços ecossistêmicos na agricultura familiar da Encosta da Serra Catarinense (The flow of ecosystem services in family farming of the Encosta da Serra Catarinense). Cadernos de Agroecologia.

Resumos do I Encontro Pan-Americano sobre Manejo Agroecológico de Pastagens, Chapecó, SC, Brazil. 6(2), 1-6.

- 51. (P) Alvez, Juan P.; Matthews, A., Schmitt, A.; Farley, J. "Sustainability indicators of dairy production in Vermont, US" Indicadores de sustentabilidade da produção leiteira no estado de Vermont", EUA. 7th Brazilian Conference on Agroeocology, Fortaleza, CE. Brazil (oral presentation).
- 52. (P) Surdi, J.; Schmitt F°, A.; Farley, J., Alvez, Juan P.; Sá Tschumi, H. "The flow of ecosystem services in family dairy farms at the Encosta da Serra Catarinense", 7th Brazilian Conference on Agroeocology, Fortaleza, CE. Brazil
- 53. (P) Alvez, Juan P.; Schmitt, A.; Farley, J. Farmers' "Perception about Voisin Management Intensive Grazing and Ecosystem Services". Society for Range Management. 64th annual Meeting, Billings Montana (oral presentation).

http://www.rangelands.org/billings2011/pdf/SRM%202011%20abstracts%20title%20index.pdf

- 54. (P) Ruschel, R.; Schmitt F, A., Farley, J.; Alvez, Juan P. A extensão universitária participando do redesenho dos processos produtivos na agricultura familiar catarinense: a viabilização de sistemas silvipastoris. XI Congresso Iberoamericano de Extension Universitaria. Santa Fe, Argentina. Online: http://www.unl.edu.ar/iberoextension/archivos/programa_detallado.pdf
- 55. (P) Warmiling, M.; Schmitt, A. L.; Farley, J.; Alvez da Cruz, J. P.; Surdi, J.R. "Flow of ecosystems services and grass based dairy production: The farmer s perception". In: International Symposium: Grasslands in a Global Context. Kansas State University, 2011, Manhattan, KS, USA. Proceedings of International Symposium: Grasslands in a Global Context. Manhattan, KS : Kansas State University, 2011. v. 1.
- 56. 2011. (P) Surdi, J.; Schmitt, A.; Warmiling, M.; Alvez, Juan P. Sistemas de produção de leite sendo redesenhados pela Extensão universitária: o Grupo de Pastoreio Voisin da Universidade Federal de Santa Catarina" XI Congresso Iberoamericano de Ext. Univ. Santa Fe, Argentina. Online: http://www.unl.edu.ar/iberoextension/archivos/programa_detallado.pdf

-2010-

- 57. (P) Farley J., Schmitt F. A., Alvez, Juan P., Rebola, Paola M. "The farmer's viewpoint: Payment for ecosystem services and agroecologic pasture based dairy production". Sustainable Animal Production in the Tropics. Guadaloupe, FR. Online at: https://colloque.inra.fr/sapt2010/Programmeet-exposes/Programme-et-exposes/Session3
- 58. (P&A) Farley, J., Schmitt, A. L., Alvez, Juan P. "Payments for ecosystem services and Agroecology in Brazil's Subtropical Atlantic Forest". 2010 SWCS Annual Conference in St. Louis, Missouri. (Oral presentation). Online at: http://www.swcs.org/documents/filelibrary/10ac/2010 Annual Conference Final Progra 5A02666 7C39BA.pdf
- 59. (P&A) Schmitt, A. L.; Maurer, Giassi, F.; Farley, J.; Alvez da Cruz, J. P. ; Alves, G. V. Environmental services and pasture based milk production: assets that need to be further accounted ... In: 63nd Society for Range Management Annual Meeting. February 7-11. www.rangelands.org/denver2010/index.shtml, 2010, Denver CO USA. Proceedings of 63nd Society for Range Management Annual Meeting.. Wheat Ridge, CO: Society for Range Management/ Allen Press, Inc, 2010. v. 1. p. O-26.
- 60. (P) Ros, J. L.; Schmitt Filho, A. L.; Rushel, R.; Farley, J.; Alvez da Cruz, J. P. "Farmers Perception about Brazilian Environmental Laws". In: 63nd Society for Range Management Annual Meeting.February 7-11. www.rangelands.org/denver2010/index.shtml, Denver, CO USA. Proceedings of 63nd Society for Range Management Annual Meeting.. Wheat Ridge, CO: Society for Range Management/ Allen Press, Inc., 2010. v. 1. p. O-127.
- 61. (P&A) Schmitt, A. L., Farley, J., Alvez, Juan P. "Farmers' perception about Ecosystems Services and pasture based milk production". 2010 SWCS Annual Conference in St. Louis, Missouri. (Oral

presentation). Online at:

http://www.swcs.org/documents/filelibrary/10ac/2010_Annual_Conference_Final_Progra_5A02666 7C39BA.pdf

-2009-

- 62. (P&A) Matthews, A., Alvez, da Cruz Juan P., Cooper, C., Kestembaum, D., Purchase, N. "Low Carbon Farming: Sustainability Indicators from the Dairy Stewardship Alliance". ASAS (American Association of Animal Sciences)-CAAV (Chinese Association of Animal Sciences and Veterinary Medicine) Asia and Pacific Rim Animal Science Conference. Nov. 8-10, Beijing, China. On-line: http://www.asas.org/pacificrim09/ASASCAAV-2009-AbstractBook.pdf
- 63. (P) Schmitt, F. A.; Busnard, F.; Nascimento, A. L.; Ros, J. L.; Bach, F.; Alves, G. V.; Alvez, Juan P. "Development of participative methodology responsible for 632 grass based agroecologic dairy projects planned and implemented by undergraduate students on rangelands of Santa Catarina, Brazil". In: of 62nd Society for Range Management Annual Meeting. Albuquerque NM USA. February 8-12, 2009, Albuquerque NM USA. Proceedings of 62nd Society for Range Management Annual Meeting. Tempe, AZ USA : Consortium for Science, Policy and Outcomes, Arizona State University, 2009. v. 1. Online: http://www.srmmeetings.org/adf.Abstracts/teah20.acapamiesSocielogy/20.8 ndf.

http://www.srmmeetings.org/pdf_Abstracts/tech30_economicsSociology/30_8.pdf

- 64. (P) da Ros, J., Schmitt F., A., Meurer, F., Farley, J., Alvez, Juan P. & Alves, G. "Farmers Perception about Brazilian Environmental Laws". In: VI Congresso Brasileiro de Agroecologia e II Congresso Latinoamericano de Agroecologia. De 9-12 novembro., 2009, Curitiba PR. Anais do VI Congresso Brasileiro de Agroecologia e II Congresso Latinoamericano de Agroecologia. Porto Alegre RS : Revista Brasileira de Agroecologia, Editora da UFRG, 2009. v. 4, n. 1, p. 4544-4548. On line: <u>http://www6.ufrgs.br/seeragroecologia/ojs/viewarticle.php?id=4200</u>
- 65. (P) Meurer, F., Schmitt F. A., Farley, J., Alvez, Juan P., Oldra, A., Francisco, F. "Environmental services and pasture based milk production: assets that need to be further accounted". VI Congresso Brasileiro de Agroecologia, II Congresso Latinoamericano de Agroecologia. Curitiba, Brazil. (Oral presentation). <u>http://www.aba-agroecologia.org.br/ojs2/index.php/cad/article/view/4909</u>
- 66. (P) Bauer, E., A.L. Schmitt F., J. Epping e Alvez, Juan P. "Produção de Leite na Grande Florianópolis: Percepção dos Agricultores Familiares sobre a Transição do Sistema Convencional para o Pastoreio Voisin." VI Congresso Brasileiro de Agroecologia, II Congresso Latinoamericano de Agroecologia. Curitiba, Brazil. (Oral presentation).
 -2007-
- 67. (P&A) "Payments for Ecosystem Services: From local to Global". International Conference and Workshop in Costa Rica.
- 68. (P&A) Heredia Declaration of Payments for Ecosystem Services. University of Vermont
- 69. 2005. (P&A) Alvez, Juan P. & Murphy, W. Graduate Research Day: "Irrigation, Nitrogen, and Soil Amendment Effects on Pasture Forage Yield and Quality. Final results".
- 70. 2004. (P&A) Alvez, Juan P. & Murphy, W. Graduate Research Day: "Irrigation, Nitrogen, and Soil Amendment Effects on Pasture Forage Yield and Quality. Preliminary results".

xiii. FELLOWSHIPS & ASSISTANTSHIPS

- 1. 2020. Mittenbhüller Research Fund.
- 2. 2019. Mittenbhüller Research Fund. Compost nutrient and Biological Value Project
- 3. 2016. Philo Ridge Farm Research Fund at UVM Center for Sustainable Agriculture.
- 4. 2015. Mittenbhüller Fund. UVM Center for Sustainable Agriculture
- 5. 2012-13. Davidson Fund. UVM Center for Sustainable Agriculture.
- 6. 2011. "Buena Orden & Don Prudencio" Cattle Farm Fund.

- 7. 2010. Gund Institute for Ecological Economics Enrichment Fund.
- 8. 2008-2010. Graduate teaching assistantship (Rubenstein School of Environmental and Natural Resources, UVM).
- 9. 2008. Graduate research assistantship (Bluemoon Foundation).
- 10. 2007. Graduate research assistant on Payments for Ecosystem Services, Bluemoon Found.
- 11. 2006-2007. Graduate research assistant on MIMES (Multiscale Integrated Models of Ecosystem Services) Project, Moore Foundation.
- 12. 2006. Graduate research assistantship (Center for Sustainable Agriculture).
- 13. 2003-2005. Graduate teaching assistantship, Plant and Soils Sciences, University of Vermont. Lectured, graded and prepared laboratory for undergraduate-level courses.
- 14. 1996-1998. Cooperation project between UFSC and Ministry of Agriculture of Cuba. Participated in a multidisciplinary team (translating, editing and processing of data and images) project, at the "Dairy Cattle Experimental Station", UFSC, Brazil.

xiv. SERVICE

REVIEWER (Journal Articles, Bills, etc.)

- 1. 2021. H.656 An act relating to miscellaneous agricultural subjects. (Livestock shade and shelter)
- 2. 2018. Science of the Total Environment. (1 manuscript)
- 3. 2015. Donnelly, Catherine, *(award winning)* Ed. The Oxford Companion to Cheese. New York: Oxford University Press, 2016.
- 4. 2015. Journal of Ecological Economics (1 manuscript)
- 5. 2014. Journal of Sustainability Science (1 manuscript).
- 6. 2014-present. Journal of Agriculture Science and Technology A&B. Link (12 manuscripts).
- 7. 2014. Journal of Ecological Processes (1 manuscript)
- 8. 2013-Present. I periodically review Vermont Legislative Ag. Bills and Regulations.
- 9. 2012. "Earth Smart, Farming for the Future". Reviewer.
- 10. 2010-present. Journal Ambiente y Desarrollo. Editorial Board (2 manuscripts)

ADVISORY, MENTORSHIP, SUPERVISION

- 1. 2020- James Keller, Master of Science in Sustainability, Harvard University (Thesis Director)
- 2. 2019. MacKenzie Michaels. UVM, Env. Science. Honors College. Thesis Project. (Co-Advisor)
- 3. 2019- Isabelle Lourie-Wisbaum, Project: Enhancing Research and Ed. For Grass Farmers.
- 4. 2019- Noah Beckage. Project: Enhancing Research and Ed. For Grass Farmers.
- 5. 2018- Ben Dube, UVM RSENR Grad Student. Helped brainstorm and design grad. research questions. shared data.
- 6. 2017-2018. Jimmy Aruzamen. MD Vet. Project: Enhancing Research and Ed. For Grass Farmers.
- 7. 2017. Jackson Zagursky. Science Project at a State Science Fair.
- 8. 2017-2018. Jon Walsh. UVM Grad. Student Project: Enhancing Research and Ed. For Grass Farmers.
- 9. 2016. Elijah Massey, UVM M.S. Cand. Project: Enhancing Research and Ed. For Grass Farmers.
- 10. 2014-2015. Jimmy Aruzamen, MD Vet. In projects: "Tools for grass farmers to monitor grazing behavior and forage utilization in real time" & "Biodiversity and Cattle Well-being".
- 11. 2009. Felipe Giassi. Majoring in Agronomy. Federal University of Santa Catarina, Brazil.
- 12. 2008. Alan Rizzoli, MBA Student at West University of Santa Catarina, Brazil.

MEMBER, BOARD or ASSOCIATE

-2021-

1 Vermont Payments for Ecosystem Services Working Group

-2020-

2. UVM Agroecology Program

-2019-

- 3. UVM United Academics UVM Extension Department Representative
- 4. UVM Extension Diversity Equity and Inclusion (DEI) and Co-Learning Sub-Comittee
- 5. Uruguayan Society of Rational Grazing (SUPRA)
- 6. Charlotte's Herd Initiative.
- 7. Food Scraps Composting On-Farms Project. VT Sust. Jobs Fund.
- 8. UVM Extension, Diversity, Equity and Inclusivity Committee.
- 9. Vermont Pig Coalition.
- 10. 2017. Vermont Soil Health Coalition (VSHC Steering Committee)
- 11. 2017. Northeast Mid-Atlantic Agroforestry (NEMA)
- 12. 2016-present. New England Silvopasture Initiative (NESI Steering Committee)
- 13. 2013-Present. Vermont Farm to Plate, Farmland Access (former Soil and Water Cross-cutting Team)
- 14. 2013-2016. International Society of Ecological Economics.
- 15. 2012-present. Vermont Grass Farmers Association, ad hoc.
- 16. 2012-present. Collaborator Agroecology and Rural Livelihoods Group
- 17. 2009-present. Voisin Grazing Group, Universidade Federal de Santa Catarina, Brazil.
- 18. **2007-present.** Redesigning Agroecosystems Scientific Group at CNPq (Brazilian Research Institution.
- 19. 2006-2012. Gund Graduate Fellow, Gund Institute for Ecological Economics. UVM.

CONSULTANT, PROFESSIONAL ADVISOR

- 1. 2021. Arthur's Point Farm, Ghent, NY
- 2. 2021. Shelburne Farms, Shelburne, Vermont
- 3. 2016-2020. Philo Ridge Farm, Charlotte VT.
- 4. 2019. Glynwood Center for Food and Farming. Cold Springs, NY.
- 5. 2019-present. SUPRA (Uruguayan Society of Rational Grazing), Consulting with a Uruguayan livestock farmers and experts about management-intensive grazing, exploring collaboration.
- 6. 2018-present. Red Uruguaya de Pastoreo Racional. Consulted with a Uruguayan livestock farmers about management-intensive grazing, exploring collaboration.
- 7. 2018. Yaguari Ltd. consulted about precision tools for grazing.
- 8. 2013. Consulted with a Uruguayan livestock farmer about intensive sheep farming, a lamb producing enterprise.
- 9. 2011. "La Lu Farm at Lincoln Gap", Warren, VT. Developed a farm business and natural resource management plan, a website and a farm logo and helped in the farm.
- 10. 2010. Center for Sustainable Agriculture. Shiitake Mushroom Project.
- 11. 2010. Population Media Center. Translation of materials from Portuguese to English.

- 12. 2009. Assisted creating an e-learning module for IADB and SSG-Advisors, interpreting and translating technical documents of public private partnership and international community development.
- 13. 2008. Scripted and assisted editing a video on Management Intensive Grazing. UVM/Winrock International.
- 14. 2007. Developed and edited GIS maps for the Missisquoi Watershed identifying grazing, conventional and confinement dairy farms for UVM/Winrock International.
- 15. 2006. Center for Sustainable Agriculture. Worked for the Dairy Stewardship Alliance, Ben & Jerry's and Saint Albans Coop & Creamery, interpreting, evaluating and assessing farm sustainability results through an analysis of 67 variables.
- 16. 2005. Translated a USDA Forest Services Entomology Guide into Spanish for UVM Entomology Research Laboratory.
- 17. 2003. Performed land use interpretation and agricultural field measurements and using GPS for various types of crops and farms for 10 clients.
- 18. 2001. Gathered data and provided statistical and dendrometric analysis to determine efficiency of forest company, "El Madero SRL", as required to achieve ISO 9002 and 14000.
- 19. 2000. "Contarregis Animais Silvestres", a Nile Crocodile Farm and Zoo. Brazil, 2000. Hired to improved efficiency and expand business and product offerings of crocodile skins. Sorted out and ranked the skin inventory by quality, color and size. Conducted and organized two new export projects of a surplus inventory to USA and Italy resulting in sales of \$180,000. Suggested confection of fine crocodile skin products, such as, belts, wallets, woman bags, boots, etc. made of highest quality materials.
- 20. 1999 2002. Advised clients on management intensive grazing (MIG) technologies and implemented projects for beef and dairy pastured farms. Developed strong client relationships and ensured client achievements through MIG projects.
- 21. 1999. Invited to the "Landless Movement" (MST) General Assembly and field day to discuss different agroecological practices and techniques, Palmares do Sul, Brazil.
- 22. 1999. Co-owner and manager of Restaurant-Pub "La Taverna". Florianopolis, SC Brazil.

MEDIA INTERVIEWS

-2020-

1. Radio Interview about the State of Dairy in Vermont. (South Royalton Radio)

-2019-

- 2. Radio Internacional, "Rivera es Asi".
- 3. Canal 8, Rivera, Uruguay
- 4. TV 10, Rivera, Uruguay

-2018-

- 5. Johnson-Su Bioreactor Composting Method. Across the Fence, UVM Extension.
- 6. Sustainable Agricultural Summit. (Link).
- 7. 2017. Vermont Edition, VPR. A Farming Movement to Promote Envir. and Social Balance. (<u>link</u>) -2016-
- 8. Winter animal husbandry short movie, Humane Society. Los Angeles, California
- 9. Forage Yield, Irrigation and Organic Amendments. Ontario, Canada.

- 10. Agronomist Suggests Compensation For Farmers With Good Pasture Management.
- 11. Worldwide grazing expert shares stories in Brussels. "A Salute to Agriculture" (special supplement to The Citizen) ∞
- 12. 2015. Vermont Greenzine. South Royalton Radio w/ Henry Swayze.
- 13. 2014. Benefits of well-managed grazing for ecosystem services. Columbia Chronicles, Chic., IL.
- 14. 2014. "Researching Best Practices for Grazing Farms". Country Folks Magazine.
- 15. 2013. Bedded Pack Systems in Vermont. Across the Fence/WCAX. University of Vermont.
- 16. 2011. Gund Institute Channel, on Youtube at: http://youtu.be/eQhFmWC63Vc
- 17. 2008. TV Interview at the Legislative Assembly State of Santa Catarina on "current pressing environmental issues". Florianopolis, SC-Brazil.

COMMUNITY EVENTS

- 1. 2003-2011. Responsible consumption program "Free Box". The University of Vermont.
- 2. 1999. Attended general assembly, field day and discussed different agroecological techniques with the "Landless Peasant Movement" (MST), Palmares do Sul, Brazil.
- 3. 1997. Agroforestry Systems working internship in Parana State, Brazil
- 4. 1994. Lived 60 days in a small community of traditional colonial -Italian and German- farmers in the Atlantic Forest, Western Santa Catarina, Brazil.

SOFTWARE

SPSS, SAS, Windows, MS Office, GIS, GPS, Internet, FTP, Image Managing/Scanner. X-Mind, Zoom/Skype/GMeet/. Light experience with Apple computers. Web Design.

III. OTHER SKILLS

LANGUAGES AND CULTURE

- 1. **Spanish** (Mother Tongue); **Portuguese** and Brazilian Portuguese Dialect in Uruguay-DPU (Fluent spoken/written); **English** (Fluent spoken/written); **French** and **Italian** (Reading).
- 2. Multiculturalism. I have lived in Uruguay, Brazil and USA. I have traveled to Costa Rica, Canada, Argentina and China. I am knowledgeable of the Latin American culture and culturally aware and welcoming to diverse cultures.

PROFFESSIONAL DEVELOPMENT AND EXTRA-CURRICULAR COURSES

- 1. 2015. Enhancing Water Quality Protection on Vermont Farms. VT Dept. of Environmental Conservation.
- 2013. RIOS (Resource Investment Optimization System) Natural Capital Project. 06/12 at the 7 Biennial USSEE Conference.
- 3. 2013. inVEST (Integrated Valuation of Environmental Services and Trade-offs), NatCap Project. 06/12-13 at the 7 Biennial USSEE Conference.
- 4. 2009. Urban Conservation Initiatives: Rain garden installation. Winooski Natural Resources Conservation District, VT. <u>http://vacd.org/winooski/winooski_raingarden.shtml</u>
- 5. 2008. Grant writing (PBIO 300) with Prof. Jane Molofsky at UVM
- 6. 1999. Permaculture: "Methodologies for Harmonic Communities", with Dr. José Lutzemberger (Brazilian Min. of Environment) and N. Zealander Robina McCurdy. Rincão Gaia. RS, Brazil.
- 7. 1998. Apple production and harvest in high-density system, Agua Doce, Brazil.
- 8. 1998. Rice production harvest in pre-germinated system, Araranguá, Brazil.

- 9. 1997. Agroforestry systems, 40-day internship for B.S. thesis. Parana, Brazil.
- 10. 1995. Processing organic residues testing "Californian Red Worms", UFSC, Brazil.
- 11. 1993-1998. Attended several courses, meetings and conferences in Agriculture, Zootechny and livestock production. Information upon request.

IV. REFERENCES (provided upon request)