

## REBECCA NELSON BROWN

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### EDUCATION

Oregon State University	
<b>Ph.D. in Horticulture</b>	<b>2001</b>
University of Minnesota	
<b>M.S. in Plant Breeding</b>	<b>1994</b>
St. Olaf College, Northfield, Minnesota	
<b>BA in Biology and the Paracollege</b>	<b>1991</b>
Magna Cum Laude; Phi Beta Kappa	

### EMPLOYMENT

University of Rhode Island, Kingston, Rhode Island	
<b>Full Professor</b>	<b>2020 to present</b>
<b>Associate Professor</b>	<b>2012-2020</b>
<b>Assistant Professor</b>	<b>2008-2012</b>
<b>Assistant Professor Research and NSF ADVANCE Fellow</b>	<b>2005-2007</b>
Oregon State University, Corvallis, Oregon	
<b>Post-Doctoral Research Associate</b>	<b>2001-2004</b>

### PROFESSIONAL ACTIVITIES

Teaching: 4 courses per year (0.3 FTE)

Vegetable Crop Production (12 years)

Greenhouse and Hydroponic Vegetable Production (8 years)

Introduction to Horticultural Science (12 years)

Plant Sciences Seminar (2 years)

Research (0.4 FTE)

Testing of vegetable varieties and production systems suited to direct retail intensive market farming in New England

Development of laser scarecrows for bird control in peri-urban agriculture

Evaluation of cover crops and forages for crop rotation on peri-urban farms

Testing of birdsfoot trefoil as a medicinal forage for small ruminants

Investigation of saffron as a new crop for New England

Mineralization and movement of nitrogen and phosphorus in tomato high tunnel system

Evaluation of urban organic residuals for soil improvement

Development of native grasses and sustainable roadside grass mixtures for New England

Extension/Service (0.3 FTE)

Collaborate with extension agents to support beginning farmers, peri-urban agriculture, and market farming in Rhode Island and New England

Conduct vegetable variety trials

Provide education in vegetable production to Master Gardeners and community groups

## GRADUATE STUDENTS AND POST-DOCS

Post-Doc: Dr. Rahmatallah (Fari) Gheshm

PhD: Sanal Kumar Krishnan 2010, Noah LeClaire-Conway (withdrew ABD 2018)

MSc: Cynthia Percivalle 2010, Joseph Fetter 2010, Mina Vescera 2013, Jeff Peiper 2013, Rebecca Long 2015, Edwin Fava 2016, Sarah Ferguson 2016, Sarah Schweig 2017, Katie Marcil expected 2023

## PEER-REVIEWED PUBLICATIONS

Brown, RN and JR Myers (2002) A Genetic Map of Squash (*Cucurbita* spp) with Randomly Amplified Polymorphic DNA Markers and Morphological Markers. *J. American Society Horticultural Science* 127:568-575.

Brown, RN, AB Herrera, MK Jahn, and JR Myers (2003) The Inheritance of Resistance to Four Cucurbit Viruses in *Cucurbita moschata* (Duch. ex Poir.) and the Search for Molecular Markers Linked to Resistance, *Euphytica* 129:253-258.

Mehlenbacher S.A., Brown R.N., Davis J.W., Chen H., Bassil N.V., Smith D.C., and Kubisiak T.L. (2003) RAPD markers for eastern filbert blight resistance in *Corylus avellana*. *Theor. Appl. Genet.* 108:651-656.

R. E. Barker, S. E. Warnke, and R. N. Brown. (2005) Genetic Variability Among Intermediate Ryegrass Seed Lots and Cultivars Detected by RAPD Analysis. *Int. Turfgrass Soc. Res. J.* 10:490-494.

Paris, H. S. and R. N. Brown. (2005). The Genes of Pumpkin and Squash. *HortScience* 40:1620-1630.

Brown, R. N., R. E. Barker, S. E. Warnke, L. A. Brilman, M. A. R. Mian, G. Jung and S.-C. Sim. (2005) QTL Analyses for Morphological Traits Useful in Distinguishing Annual Ryegrass and Turf-type Perennial Ryegrass. *Int. Turfgrass Soc. Res. J.* 10:516-524.

Mehlenbacher, Shawn A., Rebecca N. Brown, Eduardo R. Nouhra, Nahla V. Bassil. (2006) A genetic linkage map for hazelnut (*Corylus avellana* L.) based on RAPD markers. *Genome* 49:122-133.

Brown, Rebecca N. (2008) Salt tolerance of native grasses with potential for use on roadsides in New England. Proceedings of the 6th Eastern Native Grass Symposium, Columbia, SC October 7-10 2008. pp 70-81.

Krishnan, SK and R. N. Brown. (2009) Exploring the mechanisms of salt tolerance in perennial ryegrass and red fescue using elemental analysis. *International Turfgrass Society Research Journal* 11:817-827.

Meyerson, L. A., D. V. Viola and R. N. Brown (2010) Evidence for interspecific hybridization between native and introduced Phragmites in North America: Increased vigor vs. native extinction. *Biol. Invasions* 12:103-111.

Brown, R. N., R. E. Barker, S. E. Warnke, L. D. Cooper, L. A. Brilman, M. A. R. Mian, G. Jung and S.-C. Sim. (2010) Identification of quantitative trait loci for seed traits and floral morphology in a field-grown *Lolium perenne* x *Lolium multiflorum* mapping population. *Plant Breeding* 129:29-34.

Brown, Rebecca N., Cynthia Percivalle, Sophia Narkiewicz and Samantha DeCuollo. (2010) Relative rooting depths of native and amenity grasses used on roadsides. *HortScience* 45:393-400.

Brown, R. N. and J. H. Gorres. (2011) The Use of Soil Amendments to Improve Survival of Roadside Grasses. *HortScience* 46:1404-1410.

Fetter, J.C., R. N. Brown, J. H. Gorres, and J. A. Amador. (2011) Nitrate and phosphate leaching under turfgrass fertilized with a squid-based organic fertilizer. *Water, Air & Soil Pollution DOI* 10.1007/s11270-011-0962-y.

Brown, R. N. and C. D. Sawyer. (2012) Plant Species Diversity of Highway Roadsides in Southern New England. *Northeastern Naturalist* 19(1):25-42.

- Amundsen, K., R. Brown, G. Jung, and S. Warnke. (2012) Evaluation of Population Structure within Diploid *Agrostis* Germplasm Based on Miniature Inverted-Repeat Transposable Elements. *Crop Science* 52:1902-1909.
- LeClaire-Conway, N. and R. N. Brown (2012) The effect of sodium nitroprusside on the germination of warm-season grasses native to Southern New England. Proceedings of the 8<sup>th</sup> Eastern Native Grass Symposium October 1-4, Charlottesville, VA pp 34-37. (refereed proceedings)
- Fetter, J. C., Brown, R. N., & Amador, J. A. (2013). Effectiveness of Squid Hydrolysate as a Home Lawn Fertilizer. *HortScience*, 48(3), 380-385.
- Krishnan, SK and RN Brown (2013) Comparative Analysis of Salt Stress Responsive ESTs from Perennial Ryegrass and Red Fescue Using PCR-Based cDNA Subtraction. *International Turfgrass Society Research Journal* 12:531-538.
- Pieper, J. R., Brown, R. N., & Amador, J. A. (2015). Effects of Three Conservation Tillage Strategies on Yields and Soil Health in a Mixed Vegetable Production System. *HortScience*, 50(12), 1770-1776.
- Vescera, M., & Brown, R. N. (2016). Effects of Three Production Systems on Muskmelon Yield and Quality in New England. *HortScience*, 51(5), 510-517.
- Long, R., R. N. Brown, and J. A. Amador (2017). Growing Food with Garbage: Effects of Six Waste Amendments on Soil and Vegetable Crops. *HortScience* 52 (6), 896-904.
- Schweig, S.R. and R.N. Brown (2018). Vegetable Amaranths for Summer Greens Production in the Northeastern United States. *HortTechnology* 28:399-406.
- Gheshm, R and RN Brown (2018) Organic Mulch Effects on High Tunnel Lettuce in Southern New England. *HortTechnology* 28:485-491.
- Barone, CD, AM Zajac, SM Ferguson, RN Brown, JD Reed, CG Kreuger and KH Petersson. (2019) *In vitro* screening of fifty-one birdsfoot trefoil (*Lotus corniculatus*) strains for anthelmintic efficacy against *Haemonchus contortus*. *Parasitology* 146:828-836.
- Gheshm, R., and RN Brown (2020). Compost and Black Polyethylene Mulches Improve Spring Production of Romaine Lettuce in Southern New England, *HortTechnology* 30:510-518.
- Gheshm, R., and RN Brown (2020). The Effects of Black and White Plastic Mulch on Soil Temperature and Yield of Crisphead Lettuce in Southern New England. *HortTechnology* <https://doi.org/10.21273/HORTTECH04674-20>
- Longgren, K.J., Barone, C.D., Zajac, A.M., Brown, R.N., Reed, J.D., Krueger, C.G. and Petersson, K.H., 2020. Effect of birdsfoot trefoil cultivars on exsheathment of *Haemonchus contortus* in fistulated sheep. *Veterinary Parasitology*, 287, p.109271.
- Brown, RN and DH Brown. 2021. Robotic laser scarecrows: A tool for controlling bird damage in sweet corn. *Crop Protection* 146:105652. <https://doi.org/10.1016/j.cropro.2021.105652>.
- Gheshm, R., and RN Brown. 2021. Growing saffron crocus in the northeastern United States: Effects of winter protection and planting density. *HortTechnology* 31:524-531.

#### GOVERNMENT REPORTS:

- Brown, R.N and B. Maynard (2010). Evaluation of Native Grasses for Highway Slope Stabilization and Salt Tolerance. FHWA-RIDOT-RTD-10-2, available through the Transportation Research Information Service. 38 pp.
- Brown, R.N., J. H. Gorres, and C.D. Sawyer (2011) Development of Salt Tolerant Grasses for Roadside Use. FHWA-RIDOT-RTD-07-2A, available through the Transportation Research Information Service. 52 pp.

Brown, RN, C.D. Sawyer, E. Fava III, N. LeClaire-Conway (2019) Development of New Seed Mixes and Establishment Guidelines for Roadside Grasslands in RI. FHWA-RIDOT-RTD-20-10. 66 pp.

#### NON-REFEREED ARTICLES:

- Brown, RN and PD Ascher (1994) Is stigma position a species characteristic in *Phaseolus*? Ann. Rept. Bean Improv. Coop. 37: 89–90.
- Brown, R., N. Anderson and P. Ascher (1996) Congruity backcross (CBC) hybrids used to create three-species hybrids with *Phaseolus acutifolius* cytoplasm, Ann. Rept. Bean Improv. Coop. 39:98-99
- Brown, RN, JR Myers, M Hutton and P Miller (1998) A simple protocol for isolating DNA from fresh *Cucurbita* leaves, Cucurbit Genetics Coop. Rep. 21:46-47.
- Brown, RN and JR Myers (2000) Searching for molecular markers linked to ZYMV resistance in squash, Cucurbit Genetics Coop. Rep. 23:69-70.
- Brown, RN (2001) The Use and Development of Molecular Breeding Tools in *Cucurbita*: A Literature Review. Cucurbit Genetics Coop. Rep. 24:87-90.
- Brown, RN and JR Myers (2001) RAPD Markers Linked to Morphological and Disease Resistance Traits in Squash. Cucurbit Genetics Coop. Rep. 24:91-93
- Brown, R. N., R. E. Barker, D. E. Warnke, J. E. Dombrowski and J. C. Baldwin (2003) Progress on Development of a Genetic Test to Distinguish Annual and Perennial Ryegrass. in Seed Production Research at Oregon State University William C. Young III, ed. pp 52-54.
- Brown, R. N., R. E. Barker, S. E. Warnke, L. A. Brilman, M. A. R. Mian, S.C. Sim and G. Jung. (2005) Identification of quantitative trait loci for flowering time in a field-grown *Lolium perenne* x *Lolium multiflorum* mapping population. in Molecular Breeding for the Improvement of Forage Crops and Turf. Proceedings of the 4th International Symposium on the Molecular Breeding of Forage and Turf. XXth International Grassland Congress, July 2005, Aberystwyth, Wales. Wageningen Academic Publishers. p. 158.
- Brown, RN, C. Percivalle, G. Jung and J. Dowgiewicz, (2009). Evaluation of the New England Velvet Bentgrass Collection. in Nus, JL (ed.) 2008 USGA Turfgrass and Environmental Research Summary. p. 46.
- Brown, RN, C. Percivalle, G. Jung and J. Dowgiewicz, (2010). Evaluation of the New England Velvet Bentgrass Collection. in Nus, JL (ed.) 2009 USGA Turfgrass and Environmental Research Summary. p. 31.
- Brown, RN and Geunhwa Jung (2010) Evaluating the New England Velvet Bentgrass Collection. USGA Green Section Record August 27, 2010.  
<http://archive.constantcontact.com/fs003/1103157499740/archive/1103636414319.html>
- Brown, RN and G. Jung (2011) Assessment of Salt Tolerance in Velvet Bentgrass. Turfgrass Environmental Research Online 10 (14): 1-7. <http://usgatero.msu.edu/v10/n14.pdf>
- Brown, RN, CA Percivalle, and G. Jung (2011) Seeking Copper Spot resistance in velvet bentgrass. TERO 10 (17): 1-4. <http://usgatero.msu.edu/v10/n17.pdf>
- Brown, RN, N. LeClaire-Conway, and C. Percivalle (2012) Heirloom and Slicing Tomatoes for Organic Production in Rhode Island. Proceedings of the NOFA Organic Research Symposium pp 83-84.
- Brown, RN, Torphy, G. and Sherman, T. 2015. Cover Crop Research at the University of Rhode Island. Proceedings of the New England Vegetable and Fruit Conference  
[http://www.newenglandvfc.org/2015\\_conference/19\\_2\\_Brown.pdf](http://www.newenglandvfc.org/2015_conference/19_2_Brown.pdf)
- Brown, RN, and DH Brown (2017) Laser Scarecrows: Gimmick or Solution? Proceedings of the New England Vegetable and Fruit Conference December 12-14, Manchester, NH pp 75-78.

## INVITED ORAL PRESENTATIONS (LAST 4 YEARS)

- “Improving Persistence of Roadside Grasslands” presented at Effective Establishment of Native Grasses and Forbs on Roadsides workshop, University of Connecticut, September 30, 2015
- “Integrating Summer Cover Crops into Vegetable Production in Southern New England” presented at the ASA-CSSA-SSSA annual meeting November 17, 2015, Minneapolis, MN
- “Cover Crop Research in Rhode Island” presented at the New England Vegetable and Fruit Conference in Manchester, NH December 15, 2015
- “Integrating Cover Crops into Vegetable Production” presentation at RI NOFA Annual Meeting February 28, 2016
- “Vegetables in Microclimates” presented at Block Island Gardening Club annual meeting July 26, 2016.
- “Effects of Post-Anthesis Detasseling on Sweet Corn Yield” presented at the American Society for Horticultural Science conference August 11, 2016, Atlanta, GA.
- “Integration of Cover Crops into Extended Season Vegetable Production in New England” presented at the American Society for Horticultural Science conference September 23, 2017, Waikiloa, HI.
- “Summer Cover Crops in Southern New England” presented at the URI Cover Crop Workshop March 21, 2017
- “Laser Scarecrows: Gimmick or Solution?” presented at the New England Vegetable and Fruit Conference in Manchester, NH December 12, 2017.
- “Summer Cover Crops and Organic Mulches” presented at the Long Island Vegetable Conference, Riverside, NY January 10, 2018.
- “Laser Scarecrows: Gimmick or Solution?” presented at Monroe Fresh Market Vegetable Meeting, Irondequoit, NY February 1, 2018.
- “Laser Scarecrows: Gimmick or Solution?” presented at RI Sweet Corn Growers Workshop, Warwick, RI March 5, 2018.
- “Laser Scarecrow Technology for Prevention of Bird Damage” presented at the annual meeting of the Northeast Branch of the American Society for Horticulture Science, Hunt Valley, MD January 10 2019.
- “Integration of cover crops into vegetable production systems” presented at the Connecticut Vegetable and Fruit Conference, Windsor Locks, CT January 5, 2020.
- “Field Pea (*Pisum sativum* L.) as a summer cover crop in New England vegetable production systems” presented at the annual meeting of the Northeast Branch of the American Society for Horticulture Science, Philadelphia, PA January 8 2020
- “Automated Laser Scarecrows Reduce Canada Goose Grazing on Turfgrass” poster presented at the American Society for Horticultural Science conference August 2020. Abstract published in HortScience 55(9):S139
- “Automated Laser Scarecrows Reduce Bird Damage to Sweet Corn.” presented at the American Society for Horticultural Science conference August 2020. Abstract published in HortScience 55(9):S372
- “Laser Scarecrows: A New Approach to Bird Control in Crops” American Society for Horticultural Science webinar November 18, 2020.
- “Laser Scarecrows: A 21<sup>st</sup> Century Approach to Birds in Corn” presented at the Great Lakes Fruit, Vegetable and Farm Market Expo online December 9, 2020.

“Developing a low cost laser scarecrow for bird control in Rhode Island and New York” presented at Empire State Producers Expo online January 13, 2021

“Birds in Corn: New Tools for an Ancient Problem” presented at Maine Vegetable and Fruit School, online April 1, 2021

#### SERVICE AND SOCIETY MEMBERSHIPS

Phi Beta Kappa Society Beta of Rhode Island chapter

College of Environmental and Life Sciences Curricular Affairs Committee

American Society for Horticultural Science

President, Northern Region ASHS

Member and Chair, Publications Award Committees

Consulting Editor, HortTechnology

Reviewer, HortTechnology and HortScience

Associate Editor, Renewable Agriculture and Food Systems

Crop Science Society of America

American Society of Agronomy