

CURRICULUM VITAE

Name: James Scott Beaver

Mailing Address: Dept. of Crop and Agro-Environmental Sci.
University of Puerto Rico
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Place of Birth: Noblesville, Indiana, USA

Citizenship: U.S.

Education:

Ph.D. in Plant Breeding and Genetics. 1980.
University of Illinois, Urbana, Illinois 61801

M.S. in Plant Breeding and Genetics. 1978.
University of Illinois, Urbana, Illinois 61801

B.S. with honors in Agronomy. 1972.
Purdue University, West Lafayette, Indiana 47907

Work Experience:

July, 1989 to present: Professor
College of Agricultural Sciences
Univ. of Puerto Rico, Mayaguez Campus
Mayaguez, Puerto Rico 00681

July, 1984 to July, 1989: Associate Professor
College of Agricultural Sciences
Univ. of Puerto Rico, Mayaguez Campus
Mayaguez, Puerto Rico 00681

May, 1981 to July, 1984: Assistant Professor
College of Agricultural Sciences
Univ. of Puerto Rico, Mayaguez Campus
Mayaguez, Puerto Rico 00681

- May, 1980 to May, 1981: Research Associate
Department of Agronomy
University of Illinois
Urbana, Illinois
- 1975-1980: Graduate Research and Teaching Assistant
Department of Agronomy
University of Illinois
Urbana, Illinois
- 1972-1974: Peace Corps Volunteer in Mato Grosso,
Brazil working as an Ag. Extension Agent

Duties and responsibilities:

My principal responsibility at the Agricultural Experiment Station of the University of Puerto Rico has been dry bean (*Phaseolus vulgaris* L.) breeding and genetics. The major focus of my research has been the development of bean cultivars with enhanced levels of disease resistance. I developed populations that were used to identify four different resistance genes for bean golden yellow mosaic virus (BGYMV) and a gene that confers resistance to common bacterial blight. Collaboration with USDA-ARS scientists resulted in the identification of a SCAR marker and a QTL that are used by both public and private bean breeding programs for marker-assisted selection. I also collaborated with another USDA-ARS scientist in the development of the first BGMV resistant snap bean germplasm. I participated in the development of improved screening techniques for BGYMV and web blight. I am the Principal Investigator for a DGP CRSP project in Central America, Haiti and Angola. This project has developed and released small red, black and red mottled bean varieties that are widely used throughout Central America and the Caribbean. I released 'Morales' and 'Verano' which have become the most popular white-seeded cultivars in Puerto Rico for green-shelled bean production. The bean program released the CBB resistant light red kidney cultivar 'Badillo'. The bean breeding program for Puerto Rico, supported with Hatch funding, has developed the first tropically adapted pink and pinto beans with BGYMV and rust resistance. I contribute to teaching in the Department of Crop and Agro-Ecological Sciences. I offer a Crop Ecology course (AGRO 4026) that has experienced a steady increase in enrollment. I also have served as the Chair or Co-Chair of the Academic Committees of > 40 graduate students in the College of Agricultural Sciences.

Professional Societies:

American Society of Agronomy
Crop Science Society of America
American Phytopathological Society
American Society for Horticultural Science
American Association for the Advancement of Science

Awards:

Member of Regional Hatch Project W-1150 Technical Committee that received the 2009 Excellence in Multistate Research Award by the Western Association of Agricultural Experiment Station Directors (WAAESD)

2007 Arturo Roche Award for Excellence in Research presented by the Dean and Director of the College of Agricultural Sciences of the University of Puerto Rico, Mayaguez, Puerto Rico.

2006 Research Award of Merit presented by the University of Puerto Rico Chapter of Gamma Sigma Delta

1999 Meritorious Service Award, presented by the Bean Improvement Cooperative

1998 A plaque in recognition of service from the Association of Agricultural Producers of San Juan de la Maguana, Dominican Republic

1996 Bonus for Academic Excellence and Productivity awarded by the Academic Senate of the University of Puerto Rico, Mayaguez Campus

1995 Research Award of Merit, presented by the University of Puerto Rico Chapter of Gamma Sigma Delta

1993 Distinguished Achievement Award, presented by the Bean Improvement Cooperative

1985 Distinguished Member Award, presented by SOPCA

Courses, Lectures and Seminars:

AGRO 4026 Crop Ecology
AGRO 6995 Special Problems

Invited presentations:

Beaver, J.S. and D.P. Maxwell. 2011. A legacy of bean-breeding against whitefly transmitted viruses in the Caribbean. Invited presentation at a session entitled "Whitefly-transmitted geminiviruses: a Caribbean legacy in honor and appreciation of Dr. Julio Bird. 2011 Annual Meeting of the American Phytopathological Society, Caribbean Division held in San Juan, Puerto Rico. 19-22 March 2011.

Beaver, J.S. 2010. Contributions of genetic diversity to the improvement of dry edible beans. Invited presentation made at the C-08 Symposium 'Using genetic resources: Does it have a role in increasing yield?' 2010. ASA-CSSA-SSSA Annual Meeting. Long Beach, CA. 2 Nov. 2010.

Invited paper entitled "Investigación colaborativa de frijol en Centroamerica y el Caribe". presented at the III Seminario de Judía de la Península Ibérica held in Lourená (Lugo), Spain in October 2003.

Invited paper entitled "Current situation of bean production in Central America and the Caribbean". Reunião Nacional de Pesquisa de Feijão held in Salvador, Bahia, Brazil. November, 1999.

Invited paper entitled "Potential contribution of Andean beans to the genetic improvement of black beans". Black Bean Breeder Workshop held in Veracruz, Mexico. January, 1998.

Invited paper entitled "Breeding beans for the Caribbean". Bean Breeding Workshop held the Centro Internacional de Agricultura Tropical (CIAT). Cali, Colombia. October, 1996.

Invited paper entitled "Bean Golden Mosaic Virus Research in Puerto Rico". Bean Golden Mosaic Virus Workshop. Guatemala City, Guatemala. November, 1992.

Invited paper entitled "Breeding red peas for disease resistance". Third Annual Seminar for the Presentation of Progress Reports of JARP Projects. Kingston, Jamaica. September, 1991.

Invited paper entitled "Sustainable Agriculture". Forum on Organic Agriculture sponsored by SOPCA. Rio Piedras, Puerto Rico. May, 1991.

Invited paper entitled "Heritabilities and phenotypic correlations for seed yield and seed yield components of bean populations derived from crosses between determinate and indeterminate genotypes". Symposium on breeding for higher yield in common bean held at the annual meeting of the PCCMCA. Guatemala City, Guatemala. April, 1987.

Invited paper entitled "Comparison of three selection methods for large-seeded dry beans in the tropics: Tropical/Subtropical Agricultural Research Symposium. Gainesville, Florida. January, 1986.

Invited paper entitled " Breeding disease resistant beans for the Caribbean" 1984 annual meeting of the Caribbean Food Crop Society. St. Croix, U.S. Virgin Islands. October, 1984.

Chair or Co-Chair of M.S. Thesis Research Committees:

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| 1. Manuel Mateo Solano, Agronomy | 24. Belinda Roman, Agronomy |
| 2. Lucas Ramirez, Agronomy | 25. Luis Durán Oríz, Agronomy |
| 3. Bryan Brunner, Agronomy | 26. Carlos German Muñoz Perea, Agronomy |
| 4. Obed Roman, Agronomy | 27. Maricelis Acevedo Román, Agronomy |
| 5. Fernando Oviedo, Agronomy | 28. Juan Manuel Osorno, Agronomy |
| 6. Jonathan Cerna, Agronomy | 29. Angel Murillo, Agronomy |
| 7. Roldán Echevarria, Agronomy | 30. José Aponte, Agronomy |
| 8. Matthew Blair, Agronomy | 31. Marcos Saliceti, Agronomy |
| 9. Adlai Meneses, Agronomy | 32. Willian Suarez, Agronomy |
| 10. Oswaldo Díaz, Crop Protection | 33. Yazmin Rivera, Agronomy |
| 11. Cristóbal Adames, Agronomy | 34. Axel Ramirez, Agronomy |
| 12. Oswaldo Varela, Agronomy | 35. Gasner Demosthenes, Agronomy |
| 13. Carlos Monar, Agronomy | 36. Roland Dorcinvil, Agronomy |

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| 14. Marcos Vivar, Agronomy | 37. Sonia Carlo, Agronomy |
| 15. Francisco Fernandez, Agronomy | 38. Suheidy Valentin, Biology |
| 16. Danna de la Rosa, Agronomy | 39. Luis Ruíz Quiles, Agronomy |
| 17. Maximo Halpay, Crop Protection | 40. Nancy Gonzalez, Agronomy |
| 18. Carlos Montoya, Crop Protection | 41. Luis Ruíz, Agronomy |
| 19. Salvador Baiges, Agronomy | 42. Abiezer Gonzalez, Agronomy |
| 20. Albeiro Molina, Agronomy | 43. Monica Mmbui, Agronomy |
| 21. Aracely Castro, Agronomy | 44. Antonio David, Agronomy |
| 22. Juan Carlos Angel Sanchez, Crop Prot. | 45. Marcelino Guachambala, Agronomy |
| 23. Juan Carlos Takegami, Agronomy | |
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Adjunct Professor, North Dakota State University as part of the Collaborative PhD degree program in plant breeding and genetics between North Dakota State University and the University of Puerto Rico
<http://www.ag.ndsu.nodak.edu/plantsci/uprmwebsite/index.htm>

Professional Committees:

Chair, Dry Grain Pulse Technical Management Advisory Committee (2008-2010).

Editorial Advisory Board for Field Crops Research 2004 to 2009.

Chair, Regional Hatch Project W-1150 (1990, 2003)

Member of Title XII Bean/Cowpea CRSP Technical Committee
 (1984-1985), (1990-1992), (Chairman, 1993), (Regional Chair, 1997-1999),
 (Regional Facilitator, 2003-2007)

Chair, Puerto Rico Agricultural Experiment Station Variety
 Release Committee

International Travel:

Honduras: Research related to the Title XII Bean/Cowpea CRSP: December, 1983; April, 1984; July, 1984; November, 1984; March, 1985; November, 1986; December, 1987; April, 1989; August, 1989; August, 1991; November, 1992; December, 1993; December, 1994; March, 1995; December 1995; December, 1996; December,1997; December,1998; December, 1999; December, 2000; December, 2001; December, 2002; April, 2003; December,2004; December 2005, December 2006, August 2009 and 2010.

Dominican Republic: Research related to the Title XII Bean/Cowpea CRSP. November, 1981; January, 1982; June, 1982; November, 1982; January, 1983; March, 1983; October, 1983; December, 1983; February, 1984; June, 1984; December, 1984; June, 1985; January, 1986; March, 1986; December, 1986; March, 1987; November, 1987; March,1988; July, 1988; December, 1988; March, 1989; November, 1990; February, 1991; November, 1991; March, 1992; Feb.,1994; Nov., 1994; Jan, 1995; February, 1996; January, 1997; January,1998;

January, 1999, January, 2000; January, 2001; January and April, 2002; January and March, 2003; January, 2004; January, 2005; January 2006; January 2007.

Colombia: Bean Breeding Workshop. Centro Internacional de Agricultura Tropical (CIAT). Cali, Colombia. November, 1996.

Jamaica: Research related to a project supported by the Jamaican Agricultural Research Programme. July, 1989; December, 1989; September, 1991; December, 1991; December, 1992.

Guatemala: April and August 2007.

South Africa: February, 2002. Bean rust and common bacterial blight workshop

Haiti: Research and training related to the Dry Grain Pulse CRSP - January, 2009, October 2010, January and May 2011

Angola: Research and training related to the Dry Grain Pulse CRSP - Sept. 2009

Current research responsibilities and (source of funding):

Principal Investigator for AES Project IP-015 “Development, testing and dissemination of genetically improved bean cultivars for Central America, the Caribbean and Angola. (USAID-funded Dry Gain Pulse CRSP).

Principal Investigator for AES Project H-351 " Breeding common bean (*Phaseolus vulgaris* L.) for resistance to abiotic and biotic stresses, sustainable production, and enhanced nutritional value ". (USDA/Hatch)

Principal Investigator for AES project C-506 “Seed production at the Isabela Substation” (Commonwealth of Puerto Rico)

Principal Investigator for AES Project Z-038 "Dry Bean Winter Nursery". (Fees paid by participants)

Co-Principal Investigator for AES Project Z-NRCS-1 entitled “Development of a Gene-Based Ecophysiology Model (NSF).

Participation in Bean Variety and Germplasm Releases:

<u>Verano</u> : BGYM, BCMV and common bacterial blight resistant cultivar.	<u>PR9357-107</u> : rust and BCMV (bc3) resistant small red germplasm for Central America.
<u>Carrizalito</u> : BGYMV resistant small red bean cultivar	<u>Tio Canela 75</u> : bean golden mosaic and common bacterial blight resistant small red variety in Honduras.

<u>Gorda</u> : cowpea cultivar	<u>Arroyo Loro</u> : rust and BCMV resistant white bean released in Puerto Rico and the Dominican Republic
<u>Mayorbela 05</u> : maize O.P. variety	<u>Anacaona</u> white bean released in the Dominican Republic.
<u>PR9745–232</u> : BGYMV and BCMV resistant red mottled bean germplasm	<u>Negro Sureño</u> and <u>Arroyo Loro Negro</u> black bean cultivars released in the Dominican Republic.
<u>Morales</u> : BGYMV, BCMV and rust resistant white bean for Puerto Rico.	<u>Mayflower</u> : white bean released in Michigan.
<u>Rosada Nativa</u> : BGYMV, BCMV and rust resistant pink bean for Puerto Rico.	<u>L227-1</u> and <u>L226-10</u> rust resistant bean germplasm.
<u>PR9443-4</u> : BGYMV, rust and common bacterial blight light red kidney bean germplasm for the Caribbean.	<u>TARS VCI-4B</u> : Multiple disease resistant bean germplasm.
<u>JB-178</u> , <u>PC-50</u> , <u>Saladin 97</u> , <u>CIAS-95</u> rust resistant red mottled bean cultivars for the Dominican Republic.	<u>Amadeus 77</u> small red bean released in Central America.
<u>BelDade-RGMR-4, -5 and -6</u> : bean golden mosaic virus and rust resistant snap bean germplasm for southern Florida”.	<u>TARS-SR05</u> : common bacterial blight and root rot resistant small red bean germplasm.
<u>Badillo</u> : BCMV and common bacterial blight resistant light red kidney cultivar.	<u>Bejuco 90 Días</u> and <u>Arbusto</u> : velvetbean varieties for use as cover crops and forage production.
<u>DPC-40</u> : black bean_with BCMV, BCMNV and BGYMV resistance.	<u>Suresweet 2011</u> : Tropically adapted sweet corn O.P. variety/
<u>Beniquez</u> : White bean cultivar with BGYMV, BCMV and BCMNV resistance.	<u>PR0401-259</u> and <u>PR0650-31</u> : Web blight and common blight resistant bean germplasm.
<u>TARS-MST1</u> and <u>SB-DT1</u> : multiple-stress-tolerant black bean germplasm.	<u>ICB-3</u> , <u>ICB-6</u> , <u>ICB-8</u> and <u>ICB-10</u> : common bacterial blight resistant bean germplasm

Refereed Publications

- Beaver, J.S. and R.R. Johnson. 1981. Yield stability of determinate and indeterminate soybeans adapted to the Northern United States. *Crop Science* 21:449-453.
- Beaver, J.S. and R.R. Johnson. 1981. Response of determinate and indeterminate soybeans to varying cultural practices in the Northern United States. *Agron. J.* 73:833-837.
- Beaver, J.S. and R.L. Cooper. 1982. Dry matter accumulation patterns and seed yield components of two indeterminate soybean cultivars. *Agron. J.* 74:380-383.
- Zimmerman, R.H., G.I. Garris and J.S. Beaver. 1984. Potential of *Stylosanthes* spp. as a component in an integrated pest management approach to tick control. *Preventative Veterinary Medicine* 2:579-588.
- Beaver, J.S., C. Paniagua, D. Coyne and G. Freytag. 1985. Yield stability of dry bean genotypes in the Dominican Republic. *Crop Sci.* 25:923-926.
- Badillo-Feliciano, J., I. Reyes-Soto and J.S. Beaver. 1985. A comparison of yields of comon beans at physiological and harvest maturity. *J. of Agric. of the Univ. of Puerto Rico* 69(1):19-24.
- Beaver, J.S., R.L. Cooper and R. Martin. 1985. Dry matter accumulation patterns and seed yield components of determinate and indeterminate soybean genotypes. *Agron. J.* 77(5):676-678.
- Beaver, J.S., C. Paniagua, J.R. Steadman and R. Echavez-Badel. 1985. Reaction of dry bean genotypes to natural infection of foliar diseases when grown in the Dominican Republic. *J. of Agric. of the Univ. of Puerto Rico* 69(3):283-290.
- Freytag, G.F., J.D. Kelly, M.W. Adams, J. López-Rosa, J.S. Beaver and R. Echavez-Badel. 1985. Registration of two navy bean lines L226-10 and L227-1. *Crop Sci.* 25:714.
- Martinez-Rivera, W., W.M. Lugo-Mercado, J. Badillo-Feliciano and J.S. Beaver. 1987. Tillage, physical properties of coto clay and the yields of plantain and sweet potato. *J. of Agric. of the Univ. of Puerto Rico* 71(3):307-312.
- Echavez-Badel, R. and J.S. Beaver. 1987. Resistance and susceptibility of beans to ashy stem blight. *J. of Agric. of the Univ. of Puerto Rico* 71(4):403-406.
- Beaver, J.S., O. Roman-Hernandez and L.E. Rivera. 1988. Dry beans and varying cultural practices at two locations on the coastal plain of Puerto Rico. *J. of Agric. of the Univ. of Puerto Rico* 72(4):521-530.

- Mateo-Solano, M., J.S. Beaver and F. Saladin-Garcia. 1988. Heritabilities and phenotypic correlations for seed yield and seed yield components of beans. *J. of Agric. of the Univ. of Puerto Rico* 72(2):301-308.
- Beaver, J.S. and J.D. Kelly. 1989. Yield compensation of beans grown in hill-plots. *HortScience* 24(1):137-138.
- Brunner, B.F. and J.S. Beaver. 1989. Estimation of outcrossing of the common bean in Puerto Rico. *HortScience* 24(4): 669-671.
- Mateo-Solano, M. J.S. Beaver and F. Saladin-Garcia. 1989. Heritabilities and phenotypic correlations of morphological traits of beans. *J. of Agric. of the Univ. of Puerto Rico* 73(4):349-360.
- Beaver, J.S., R. Echávez-Badel and G. Freytag. 1990. Registration of "Arroyo Loro" white bean. *Crop Science* 30:746.
- Unander, D.W. R. Diaz-Donaire, J.S. Beaver, J. Cerna-Garcia and D. Rueda. 1989. Yield stability of dry bean genotypes in Honduras. *J. of Agric. of the Univ. of Puerto Rico* 73(4):339-348.
- Zaiter, H.Z., D.P. Coyne, J.R. Steadman and J.S. Beaver. 1990. Inheritance of leaf pubescence and resistance to a rust strain in beans. *J. of Amer. Soc. for Hort. Sci.* 115:158.
- Kelly, J.D., M.W. Adams, A.W. Saettler, G.L. Hosfield, G.V. Varner, J.S. Beaver, M.A. Ubersax and J. Taylor. 1989. Registration of 'Mayflower' navy bean. *Crop Sci* 29:1571-1572.
- Cerna, J. and J.S. Beaver. 1989. A visual indicator of the physiological maturity stage of indeterminate dry beans. *J. of Agric. of the Univ. of Puerto Rico.* 73(4):361-366.
- Oviedo, F., J.S. Beaver and J.R. Steadman. 1990. Caracterización de la pubescencia acicular en las hojas de genotipos de habichuela. *J. of Agric. of the Univ. of Puerto Rico* 74(2):111-119.
- Cerna, J. and J.S. Beaver. 1990. Inheritance of early maturity of indeterminate dry bean. *Crop Sci.* 30:1215-1217.
- Beaver, J.S., M. Martinez and G. Godoy. 1990. Evaluation of dry beans for resistance to ashy stem blight. *J. of Agric. of the Univ. of Puerto Rico* 74(4):349-355.
- del Rio, L., P.R. Hepperly, and J.S. Beaver. 1991. Dry bean seed quality in Honduras. *J. of Agric. of the Univ. of Puerto Rico* 75:125-137.
- Beaver, J.S., J.R. Steadman and D.P. Coyne. 1992. Field reaction of landrace components of red mottled beans to common bacterial blight. *HortScience* 27:50-51.

- Peña, E., A. Pantoja y J. Beaver. 1993. Desarrollo de *Bemisia tabaci* Genn. sobre cuatro genotipos de *Phaseolus vulgaris* L. con diferentes grados de pubescencia. J. of Agric. of the Univ. of Puerto Rico 77:61-67.
- Peña, E.A. Pantoja y J. Beaver. 1992. Determinación de la pubescencia de cuatro genotipos de habichuela (*Phaseolus vulgaris* L. J. of Agric. of the Univ. of Puerto Rico 76:71-82.
- McLaughlin, W., J. Beaver, E. Smith and D. Marsh. 1992. Breeding red peas (*Phaseolus vulgaris* L.) for disease resistance and enhanced biological nitrogen fixation. The Bulletin of the Jamaican Society for Agricultural Sciences 4:75-81.
- Wallace, D.M., J.P. Baudoin, J.S. Beaver, D.P. Coyne, D.E. Halseth, P.N. Masaya, H.M. Munger, J.R. Meyers, M. Silbernagel, K.S. Yourstone and R.W. Zobel. 1993. Improving efficiency of breeding for higher crop yields. Theoretical and Applied Genetics 86:27-40.
- Peña Rojas, E.A., A Pantoja and J.S. Beaver. 1992. Determinación de la pubescencia de cuatro materiales genéticos de frijol (*Phaseolus vulgaris* L.) y su efecto sobre el insecto [*Bemisia tabaci* (Gennadius)]. Revista Colombiana de Entomología 18:41-48.
- Arnaud-Santana, E. D.P. Coyne, J.S. Beaver and H.Z. Zaiter. 1993. Effect of photoperiod and temperature on common blight disease of common beans (*Phaseolus vulgaris* L.). Euphytica 66:211-216.
- Blair, M.W., J.S. Beaver and J.C. Rosas. 1993. Heritability of field resistance to bean golden mosaic virus in dry beans (*Phaseolus vulgaris* L.). p. 160-170. In Bean Golden Mosaic - 1994 Research Advances. F. Morales (ed). Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia.
- Beaver, J.S. and J.D. Kelly. 1994. Comparison of selection methods for dry bean populations derived from crosses between gene pools. Crop Sci. 34:34-37.
- Beaver, J.S. and O. Roman-Hernandez. 1994. Green-shell bean production in Puerto Rico at different planting dates. J. of Agric. of the Univ. of Puerto Rico. 78:131-136.
- Peña, E., A. Pantoja y J. Beaver. 1993. Oviposición de *Bemisia tabaci* Genn. en cuatro genotipos de *Phaseolus vulgaris* L. con diferentes grados de pubescencia. Folia Entomológica Mexicana 87:1-12.
- Azzam, O., J. Frazer, D. de la Rosa, P. Ahlquist, J.S. Beaver and D.P. Maxwell. 1994. Whitefly transmission and efficient ssDNA accumulation of bean golden mosaic virus require the expression of the coat protein. Virology 204:289-296.
- Miklas, P.N., J.C. Rosas, J.S. Beaver, L. Telek and G.F. Freytag. 1994. Field performance of selected tepary bean germplasm in the tropics. Crop Sci. 34:1639-1644.

- Maxwell, D., S. Hanson, R. Hoogstraten, P. Alquist, J. Beaver, O. Azzam and J. Karkashian. 1994. Genome organization and functions of bean golden mosaic geminivirus. p. 119-124. *In* Bean Golden Mosaic - 1994 Research Advances. F. Morales (ed.). Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia
- Miklas, P.N., J.S. Beaver, K.F. Grafton and G.F. Freytag. 1994. Registration of TARS VCI-4B multiple disease resistant germplasm. *Crop Science* 34:1415.
- Wallace, D.H., K.S. Yourstone, J.P. Baudoin, J. Beaver, D.P. Coyne, J.W. White and R.W. Zobel. 1995. Photoperiod x temperature effects on the days to flowering of bean (*Phaseolus vulgaris* L.). p. 863-891. *In* M. Pessaraki (ed.) Handbook of plant and crop physiology. Marcel Dekker, New York.
- Polanco, T., R.P. Rodriguez and J.S. Beaver. 1996. Microgotas: Metodo de inoculacion con *Rhizoctonia solani* Kuhn para la evaluar la reaccion de lineas de habichuela (*Phaseolus vulgaris* L.). *J. of Agric. of the Univ. of Puerto Rico* 80:111-122.
- Polanco, T., R.P. Rodriguez and J.S. Beaver. 1996. Variabilidad entre aislados de *Rhizoctonia solani* Kuhn. *J. of Agric. of the Univ. of Puerto Rico* 80:195-197.
- Adames-Mora, C., J.S. Beaver and O. Diaz. 1996. Una metodologia de evaluacion del virus del mosaico dorado de habichuela en el invernadero. *J. of Agric. of the Univ. of Puerto Rico* 80:65-72.
- Varela, O., J.S. Beaver, M. Zapata, P. Miklas and S. Cianzio. 1995. Evaluacion de frijol (*Phaseolus vulgaris* L.) en generaciones tempranas para resistencia a *Xanthomonas campestris* pv. *phaseoli* (Smith) Dye. *J. of Agric. of the Univ. of Puerto Rico* 80:55-63.
- Montoya, C.A, J.S. Beaver, R. Rodriguez, P.N. Miklas and G. Godoy-Lutz. 1997. Heritability of resistance to web blight in five common bean populations. *Crop Science* 37:780-783.
- Urrea, C.A., P.N. Miklas, J.S. Beaver and R.H. Riley. 1996. A codominant randomly amplified polymorphic DNA (RAPD) marker useful for indirect selection of bean golden mosaic virus resistance in common bean. *J. Amer. Soc. Hort. Sci.* 12:1035-1039.
- Beaver, J.S., E. Arnaud-Santana and D.P. Coyne. 1996. Yield stability of determinate and indeterminate red mottled beans. *J. of Agric. of the Univ. of Puerto Rico.* 80:187-189.
- Beaver, J.S. and J.C. Rosas. 1998. Heritability of the length of the reproductive period and rate of seed mass accumulation in common beans. *J. Amer. Soc. for Hort. Sci.* 123(3):407-411.
- Miklas, P.N., E. Johnson, V. Stone, J.S. Beaver, C. Montoya and M. Zapata. 1996. Selective mapping of QTL conditioning disease resistance in common bean. *Crop Sci.* 36:1344-1351.

- Miklas, P.N., V. Stone, C. A. Urrea, E. Johnson and J.S. Beaver. 1998. Inheritance and QTL analysis of field resistance to ashy stem blight in common bean. *Crop Sci.* 38:916-921.
- Miklas, P.N., H.F. Schwartz, R. Nina and J.S. Beaver. 1998. Reaction of select tepary bean to ashy stem blight and fusarium wilt. *HortScience* 33:136-139.
- Velez, J., M.J. Bassett, J.S. Beaver and A. Molina. 1998. Inheritance of resistance to bean golden mosaic virus in common bean. *J. of Amer. Soc. Hort. Sci.* 123(4):628-631.
- Román-Hernández, O. and J.S. Beaver. 1997. Optimum stage of development for harvesting green-shelled beans. *J. of Agric. of the Univ. of Puerto Rico* 80-89-94.
- Jung, G., D.P. Coyne, P.W. Skroch, J. Nienhuis, E. Arnaud-Santana, J. Bokisi, H.M. Ariyaratne, J.R. Steadman, J.S. Beaver and S.M. Kaeppler. 1996. Molecular markers associated with plant architecture and resistance to common blight, web blight and rust in common beans. *J. Amer. Soc. for Hort. Sci. J. Amer. Soc.* 121:794-803.
- Rosas, J.C., O.I. Varela and J.S. Beaver. 1997. Registration of 'Tio Canela 75 Small Red Bean. *Crop Science* 37:1391.
- Miklas, P.N., J.S. Beaver, J.R. Steadman, M.J. Silbernagel and G.F. Freytag. 1997. Registration of Three Bean Common Mosaic Virus-Resistant Navy Bean Germplasm. *Crop Sci.* 37:1025.
- Urrea, C.A., P.N. Miklas and J.S. Beaver. 1998. Inheritance of resistance to common bacterial blight in four tepary bean lines. *J. Amer. Soc. Hort. Sci.* 124:24-27.
- Fuentes, M., A. Pantoja, A. Sotomayor and J. Beaver. 1998. Selección recurrente recíproca en maíz: tolerancia al ataque del gusano de la mazorca y el cogollero (Lepidoptera: notuidae). *Agronomía Mesoamericana* 9:42-52.
- Beaver, J.S., P.N. Miklas, J.D. Kelly, J.R. Steadman and J.C. Rosas. 1998. Registration of PR9357-107 small red germplasm resistant to BCMV, BCMNV and rust. *Crop Sci.* 38:1406-1407.
- Miklas, P.N., V. Stone, M.J. Daley, J.B. Stavely, J.R. Steadman, M.J. Bassett, R. Delorme and J.S. Beaver. 2000. Bacterial, fungal, and viral disease resistance loci mapped in a recombinant inbred common bean population ('Dorado'/XAN176). *J. Amer. Soc. Hort. Sci.* 125:476-481.
- Beaver, J.S. y J.R. Steadman. 1999. Adelantos en el Mejoramiento de Frijol Andino Caribeño. *Agronomía Mesoamericana* 10:77-82.
- Beaver, J.S. and J.C. Rosas. 1998. Heritability of length of reproductive period and rate of seed mass accumulation in common beans. *J. Amer. Soc. Hort. Sci.* 123:407-411.

- Miklas, P.N., M. Zapata, J.S. Beaver and K.F. Grafton. 1999. Registration of four dry bean germplasm resistant to common bacterial blight: ICB-3, ICB-6, ICB-8 and ICB-10. *Crop Sci.* 39:594.
- Beaver, J.S. 1999. Improvement of large-seeded race Nueva Granada cultivars. p. 275-288. *In* S. P. Singh (ed.) *Common bean improvement in the twenty-first century*. Kluwer Academic Publishers. Boston.
- Beaver, J.S., P.N. Miklas and R. Echavez-Badel. 1999. Registration of 'Rosada Nativa' Pink Bean. *Crop Sci.* 39:1257.
- Beaver, J.S. and P.N. Miklas. 1999. Registration of 'Morales' small white bean. *Crop Sci.* 39:1257.
- Beaver, J.S., M. Zapata and P.N. Miklas. 1999. Registration of PR9443-4, bean germplasm resistant to bean golden mosaic, common bacterial blight, and rust. *Crop Sci.* 39:1262.
- Nin, J.C., E. Arnaud-Santana, F. Saladin, G. Godoy-Lutz, D.P. Coyne J.S. Beaver and J.R. Steadman. 2000. Registration of 'Anacaona' White Bean. *Crop Sci.* 40:856.
- Arnaud-Santana, E., J.C. Nin, F. Saladin, G. Godoy-Lutz, D.P. Coyne, J.S. Beaver and J.R. Steadman. 2000. Registration of 'Arroyo Loro Negro' Black Bean. *Crop Sci.* 40:857.
- Arnaud-Santana, E., J.C. Nin, F. Saladin, G. Godoy-Lutz, D.P. Coyne, J.S. Beaver and J.R. Steadman. 2000. Registration of 'CIAS-95' Red Mottled Bean. *Crop Sci.* 40:857.
- Arnaud-Santana, E., J.C. Nin, F. Saladin, G. Godoy-Lutz, J.S. Beaver, D.P. Coyne and J.R. Steadman. 2000. Registration of 'JB-178' Red Mottled Bean. *Crop Sci.* 40:857-858.
- Saladin, F, E. Arnaud-Santana, J.C. Nin, G. Godoy-Lutz, J.S. Beaver, D.P. Coyne and J.R. Steadman. 2000. Registration of 'PC-50' Red Mottled Bean. *Crop Sci.* 40:858.
- Nin, J.C., E. Arnaud-Santana, F. Saladin, G. Godoy-Lutz, D.P. Coyne, J.S. Beaver and J.R. Steadman. 2000. Registration of 'Saladin-97' Red Mottled Bean. *Crop Sci.* 40:858-859.
- Camacho-Chacón, F., S.R. Cianzio y J. S. Beaver. 2000. Evaluación agronómica y parámetros genéticos en soya para consumo humano directo en Puerto Rico. *J. Agric. Univ. de Puerto Rico* 83:153-167.
- Beaver, J.S. 2000. Effect of harvest date and seed type on green-shell and dry bean yield. *J. Agric. of the Univ. of Puerto Rico* 84:29-30
- Membreño, J.B., M. Zapata, J.S. Beaver y J. Smith. 2001. Microflora en semillas de frijol (*Phaseolus vulgaris* L.). *Agronomía Mesoamericana* 12(2):135-140.

- Steadman, J., G. Godoy-Lutz, J.C. Rosas y J.S. Beaver. 2001. Uso de un vivero móvil para obtener patrones de virulencia de la roya del frijol común. *Agronomía Mesoamericana* 13(1):37-40.
- Beaver, J.S., G. Godoy-Lutz, J.C. Rosas y J.R. Steadman. 2001. Estrategias para seleccionar frijol común con mayor resistencia a mustia hilachosa. *Agronomía Mesoamericana* 13(1):67-72.
- Macchiavelli, R. And J.S. Beaver. 2001. Effect of number of seed bulked and population size on genetic variability when using the multiple-seed procedure of SSD. *Crop Sci.* 41:1513-1516.
- Rivera-Vargas, L.I., V. Bracero-Acosta, J.S. Beaver, D.E. Purcifull, J.E. Polston and E. Hiebert. 2002. Detecting bean golden yellow mosaic virus in bean breeding lines and in the common legume weed *Macroptilium lathyroides* in Puerto Rico. *J. Agric. Univ. Puerto Rico.* 85:165-176.
- Beaver, J.S., G. Godoy-Lutz, J.C. Rosas y J.R. Steadman. 2002. Estrategias para seleccionar frijol común con mayor resistencia a mustia hilachosa. *Agronomía Mesoamericana* 13:67-72.
- Rivera-Vargas, L.I., V. Bracero-Acosta, J.S. Beaver, D.E. Purcifull, J.E. Polston and E. Hiebert. 2001. Detecting bean golden yellow mosaic virus in bean breeding lines and in the common legume weed *Macroptilium lathyroides* in Puerto Rico. *J. Agric. Univ. Puerto Rico.* 85:165-176.
- Steadman, J.R., G. Godoy-Lutz, J.C. Rosas and J.S. Beaver. 2002. Uso de un vivero móvil para obtener patrones de virulencia de la roya del frijol común. *Agronomía Mesoamericana* 13:37-39.
- Membreño, J., M. Zapata, J.S. Beaver and R. Smith. 2001. Microflora en semillas de frijol (*Phaseolus vulgaris* L.). *Agronomía Mesoamericana* 12:135-139.
- Román Avilés, B. And J.S. Beaver. 2003. Inheritance of heat tolerance in common bean of Angean origin. *J. of Agric. of the Univ. of Puerto Rico.* 87:113-121.
- Beaver, J.S., J.C. Rosas, J. Myers, J. Acosta, J.D. Kelly, S. Nchimbi-Msolla, R. Misangu, J. Bokosi, S. Temple, E. Arnaud-Santana, D.P. Coyne. 2003. Contributions of the Bean/Cowpea CRSP to cultivar and germplasm development in common bean. *Field Crops Research* 82(2-3):87-102.
- Coyne, D.P, J.R. Steadman, G. Godoy-Lutz, R. Gilbertson, E. Arnaud-Santana, J.S. Beaver and J.R. Myers. 2003. Contributions of the Bean/Cowpea CRSP to management of bean diseases. *Field Crops Research* 82:155-168.
- Bracero, V., L. Rivera and J.S. Beaver. 2003. DNA analysis confirms *Macroptilium lathyroides* as alternative host of *Bean golden yellow mosaic virus*. *Plant Disease* 87:1022-1025.
- Rosas, J.C., J.S. Beaver, D. Escoto, C.A. Pérez, A. Llano and J.C. Hernández. 2004. Registration of 'Amadeus 77' small red bean. *Crop Sci.* 44:1867-1868.

- Acevedo-Román, M., A. Molina-Castañeda, J.C. Angel Sánchez, C.G. Muñoz and J.S. Beaver. 2004. Inheritance of normal pod development in bean golden yellow mosaic resistant common bean. *J. Amer. Soc. Hort. Sci.* 129(4):549-552.
- Sánchez, L., M. Zapata, R. del P. Rodríguez y J.S. Beaver. 2003. Distribución y patogenicidad de *Pseudomonas cichorii* (Swingle) Stapp en el cultivo de café en Puerto Rico. *J. of Agric. of the Univ. of Puerto Rico* 87:123-136.
- Takegami, J.C., J.S. Beaver, G. Godoy-Lutz, R. Echávez-Badel and J.R. Steadman. 2004. Inheritance of web blight resistance in common bean. *J. Agric. Univ. P.R.* 88:45-54.
- Durán, L., M.W. Blair, M.C. Giraldo, R. Macchiavelli, E. Prophete, J.C. Nin and J.S. Beaver. 2005. Morphological and molecular characterization of common bean landraces and cultivars from the Caribbean. *Crop Sci.* 45: 1320-1328.
- Rosas, J.C., J.S. Beaver, S. Beebe, A. Viana. 2004. Nomenclatura de variedades de frijol común liberadas en Centro América y el Caribe. *Agronomía Mesoamericana* 15:221-224.
- Beaver, J.S. and C.A. Flores. 2005. Liberación del cultivar de frijol [*Vigna unguiculata* (L.) Walp.] 'Gorda. *J. of Agric. of the Univ. of Puerto Rico* 89:267-269.
- Beaver J.S., Muñoz Perea C.G., Osorno J.M., Ferwerda F.H. and P.N. Miklas
Registration of *Bean golden yellow mosaic virus* Resistant Dry Bean Germplasm Lines PR9771-3-2, PR0247-49, and PR0157-4-1. *Crop Sci.* 2005 45: 2126-2127.
- Rosas J.C., Beaver J.S., Escoto D., Perez C.A., Llano A., Hernandez J.C., and Araya R.. 2004. Registration of 'Amadeus 77' Small Red Common Bean. *Crop Sci.* 2004 44: 1867-1868.
- Rosas, J.C., J.S. Beaver, M. Alameda-Lozada, D. Escoto, J.C. Hernandez and R. Araya. 2005. Registration of 'Carrizalito' small red bean. *Crop Sci.* 45:2656-2657.
- Blair M.W., J.S. Beaver, J.C. Nin, E. Prophete, and S.P. Singh. 2006. Registration of PR9745–232 and RMC-3 Red-Mottled Dry Bean Germplasm lines with Resistance to *Bean golden yellow mosaic virus*. *Crop Sci* 2006 46:1000-1002.
- Beaver, J.S., M. Saliceti and J. Sud. 2006. Release of maize (*Zea mays* L.) open-pollinated cultivar 'Mayorbela 05'. *J. Agric. Univ. Puerto Rico* 90(3-4):253-257.
- Smith, J.R., S.J. Park, J.S. Beaver, P.N. Miklas, C.H. Canaday and M. Zapata. 2007. Registration of TARS-SR05 multiple disease resistant dry bean germplasm. *Crop Science* 47:457-458.
- Osorno J.M., Muñoz C.G., Beaver J.S., Ferwerda F.H., Bassett M.J., Miklas P.N, Olczyk T. and B. Bussey (2007) Two Genes from *Phaseolus coccineus* Confer Resistance to Bean Golden Yellow Mosaic Virus in Common Bean. *J. Amer. Soc. Hort. Sci.* 132:530-533.

- Rivera-Vargas L.I., V. Bracero-Acosta and J.S. Beaver. 2007. Temporal and spatial dissemination of bean golden yellow mosaic virus (Begomovirus) in *Phaseolus vulgaris* 'Jamaica Red' J. of Agric. of the Univ. of Puerto Rico 91:207-214.
- Beaver, J.S., T.G. Porch and M. Zapata. 2008. Registration of 'Verano' white bean. Journal of Plant Registrations 2:187-189.
- Beaver, J.S. and J.M. Osorno. 2009. Achievements and limitations of contemporary common bean breeding using conventional and molecular approaches. Euphytica 168:145-175.
- Beaver, J.S., T.G. Porch and M. Zapata. 2010. Registration of 'Badillo' light red kidney bean. J. Plant Registration 4:1-4.
- Henry A., J.C. Rosas, J.S. Beaver, and J.P. Lynch. 2010. Multilines of contrasting root architecture: Multiple stress response and belowground competition. Field Crop Res. 117:209-213.
- Carlo Acosta, S., B. Sandoval Centeño, E. Valencia and J.S. Beaver. 2010. Release of 'Bejuco -90 Días' and 'Arbusto' velvetbean cultivars. J. of Agric. Univ. Puerto Rico. 94:293-299.
- Zapata, M., J.S. Beaver and T.G. Porch. 2010. Dominant gene for common bean resistance to common bacterial blight caused by *Xanthomonas axonopodis* pv. *phaseoli*. Euphytica 179:373-382.
- Dorcinvil R, Sotomayor-Ramírez D, Beaver JS. 2010. Agronomic performance of common bean (*Phaseolus vulgaris* L.) lines in an Oxisol. Field Crops Research. 118:264-272.
- Colbert, R.W., E. Valencia and J. S. Beaver. 2010. Biomasa y composición de sorgo forrajero-leguminosas anuales en monocultivo y intercaladas. J. of Agric. Univ. Puerto Rico (In review).
- Beaver, J.S., M. Zapata, M. Alameda, T.G. Porch and J.C. Rosas. 2011. Registration of PR0401-259 and PR0650-31 dry bean germplasm lines. J. Plant Reg. doi: 10.3198/jpr2011.05.0283crg; Published online 9 Nov. 2011.
- Porch, T.G., C.C. Urrea, J. S. Beaver, S. Valentin, P. A. Peña, and J. R. Smith. 2011. Registration of TARS-MST1 and SB-DT1 multiple-stress-tolerant black bean germplasm. J. Plant Reg. doi: 10.3198/jpr2010.08.0501crg; Published online 8 August 2011.
- Beaver, J.S., B.R. Brunner and A. Armstrong. 2012. Release of sweet corn (*Zea mays* L.) open-pollinated cultivar 'Suresweet 2011'. J. Agric. of the Univ. of Puerto Rico. (In print).
- Beaver, J.S., G. Godoy-Lutz, J.R. Steadman and T.G. Porch. 2012. Release of 'Beníquez' white bean (*Phaseolus vulgaris* L.) cultivar. J. Agric. of the Univ. of Puerto Rico (In print).

Non-refereed Publications and Scientific Presentations

Beaver, J.S. and R.R. Johnson. 1981. Cultural practices for short statured soybeans. Illinois Research 23(1):6-7.

Beaver, J.S. and R.L. Nelson. 1981. Effect of grafting date and maturity of the stock on the flowering behavior of soybean scions. Soybean Genetics Newsletter 8:37-40.

Schiller, C.T., J.S. Beaver and J.B. Sinclair. 1978. The effect of planting date and row spacing on soybean seed quality. Phytopathology News 12(8):91.

Echávez-Badel, R. and J.S. Beaver. 1988. Evaluación del frijol para resistencia a *Macrophomina phaseolina* en parcelas inoculadas y no inoculadas. (Resumen). Phytopathology 78(6):856.

Echázvz-Badel, R. and J. S. Beaver. 1988. Determinación de resistencia en frijol a un aislamiento de *Macrophomina phaseolina*. (Resumen). Phytopathology 78(6):857.

Beaver, J.S., R. Echávez-Badel, A. Armstrong and E. Schroder. 1992. Conjunto tecnológico para la producción de habichuela. Agricultural Experiment Station. University of Puerto Rico. Mayaguez, PR.

Arnaud-Santana, E., D.P. Coyne, J.S. Beaver and H.Z. Zaiter. 1991. Effect of photoperiod and temperature on the reaction to the common bacterial disease in dry beans (*Phaseolus vulgaris*). Ann. Rep. of the Bean Improv. Coop. 34:33.

Martinez, R.T., J.S. Beaver, F. Saladin and D.P. Maxwell. 1991. Lack of seed transmission by bean golden mosaic geminivirus from the Dominican Republic and Puerto Rico. Ann. Rep. of the Bean Improv. Coop. 34:17.

Hoogenboom, G., J. Meyers, M. Silbernagel, A. Vanderberg, T. Michaels, J. Beaver, R. Gaudiel and J. White. 1992. Initial results of the International Dry Bean Modeling Nursery. Ann. Rep. of the Bean Improv. Coop. 35:33-34.

Beaver, J.S. and J.C. Rosas. 1992. Selection of beans with greater reproductive periods. Ann. Rep. of the Bean Improv. Coop. 35:13-14.

Marsh, D.B., W. McLaughlin and J.S. Beaver. 1992. Assessing the nitrogen fixation capabilities of newly developed *Phaseolus vulraris* L. lines. (Abstract). HortScience 27(6):109.

Blair, M., J.S. Beaver, J.C. Rosas and F. Saladin. 1992. Inheritance of field resistance of bean golden mosaic virus resistance in dry beans (*Phaseolus vulgaris*) Ann. Rep. of the Bean Improv. Coop. 35:48-49.

Sauter, K.J., D.W. Davis and J.S. Beaver. 1992. An evaluation of three putative predictors of *Phaseolus vulgaris* L. field performance under high temperature. (Abstract). HortScience 27(6):608.

Arnaud-Santana, E., D.P. Coyne, J.R. Steadman, A.K. Vidaver, K.M. Eskridge and J.S. Beaver. 1992. Heritabilities of seed transmission and leaf and pod reactions to common blight, leaf reaction to web blight, plant architecture and their associations in dry beans (Abstract). HortScience 27(6):109.

Polanco, T., R. Rodriguez, J. Beaver and R. Echavez-Badel. 1992. Desarrollo de metodos de inoculación para inducir mustia hilaschosa en frijol (*Phaseolus vulgaris* L.). (Abstract). Proceedings of the XXVII Annual Meeting of the Caribbean Food Crop Society held in Santo Domingo, Dominican Republic. August, 1992.

Montoya, C.A., R. Echavez-Badel, E.C. Schroder and J.S. Beaver. 1992. Evaluation of rhizobacteria for the control of *Rhizoctonia solani* isolated from common beans in Puerto Rico. (Abstract). XXX Annual Meeting of the American Phytopathological Society, Caribbean Division held in Merida, Venezuela. September, 1992.

Beaver, J.S., J.R. Steadman and D.P. Coyne. 1992. Atypical symptom expression of common bacterial blight in tropical pompadour germplasm. Ann Rep of the Bean Improv. Coop. 35:110.

Blair, M.W. and J.S. Beaver. 1992. Resistance to the weepotato whitefly (*Bemisia tabaci*), the vector of the bean golden mosaic virus in dry beans (*Phaseolus vulgaris*). Ann. Rep of the Bean Improv. Coop. 35:152-153.

Arnaud-Santana, E., D.P. Coyne, J.R. Steadman, J.S. Beaver, A. Mora and J.C. Nin. 1992. Inheritance and heritabilities of the reactions to web blight and common bacterial blight disease, and their associations in dry beans. Ann. Rep. of the Bean Improv. Coop. 35:119-120.

Coyne, D.P., E. Arnaud-Santana, J.S. Beaver and H. Zaiter. 1992. Photoperiod and temperature influence on common bacterial blight disease in dry beans and implications in breeding (Abstract). HortScience 27(6):608.

Beaver, J.S. 1993. A simple method for producing seed from crosses hybrid dwarfs derived from crosses between Middle American and Andean gene pools. Ann. Rep. of the Bean Improv. Coop. 36:28-29.

Beaver, J.S. 1993. Should the Caribbean be considered the source of a secondary gene pool for Andean red beans? Ann. Rep. of the Bean Improv. Coop. 36:30-31.

Miklas, P.N., J.S. Beaver, K.F. Grafton, M. Zapata and G.F. Freytag. 1993. Multiple disease resistant bean germplasm from an interspecific hybrid. Ann. Rep. of the Bean Improv. Coop. 36:32-33.

- Beaver, J.S. and F. Fernandez. 1993. Effect of planting date and level of moisture at harvest on the yield and quality of green-shelled beans (Abstract). HortScience 28:94.
- Blair, M.W. and J. S. Beaver. 1993. Sweetpotato whitefly reference differs among the Mesoamerican and Andean gene pools of common bean (*Phaseolus vulgaris* L.). Ann. Rep of the Bean Improv. Coop. 36:132-134.
- Blair, M.W. and J.S. Beaver. 1993. Inheritance of bean golden mosaic virus resistance from bean genotype A-429. Ann. Rep. of Bean Improv Coop. 36:143.
- Blair, M.W., J.S. Beaver and C. Adames. 1993. Inheritance of the dwarfing response to bean golden mosaic virus infection in dry beans (*Phaseolus vulgaris* L.). Ann. Rep. of the Bean Improv. Coop. 36:144-145.
- Steadman, J.R., M.T. Mmbaga, J.R. Stavely, J.S. Beaver and D.P. Coyne. 1992. General and specific resistance to rust in common bean (Abstract). Phytopathology 82:611.
- Arnaud-Santana, E., D.P. Coyne, J.R. Steadman, K.M. Eskridge and J.S. Beaver. 1994. Heritabilities of seed transmission, leaf and pod reaction to web blight and plant architecture and their associations in dry beans. Ann. Rep. Bean Improv. Coop. 37:46-47.
- Zapata M., R. Cienfuegos, W. Mercado and J. S. Beaver. 1994. Seedborne bacteria in relation to common blight disease incidence on *Phaseolus vulgaris* L. Ann. Rep of the Bean Improv. Coop 37:57-58.
- Beaver, J.S., C. Adames Mora and D. de la Rosa 1994. Screening for bean golden mosaic virus resistance in the greenhouse. Ann. Rep. of the Bean Improv. Coop. 37:35-36.
- Steadman, J.R., M.T Mmbaga, J.R. Stavely, J.S. Beaver and D.P. Coyne. 1992. General and specific resistance to rust in common bean. (Abstract). Phytopathology 82:611.
- Miklas, P.N. and J.S. Beaver. 1994. Inheritance of field resistance to ashy stem blight in dry bean. Ann. Rep. of the Bean Improv. Coop. 37:233-234.
- Johnson, E., P.N. Miklas and J.S. Beaver. 1994. RAPD markers for disease reaction QTL's in common bean (*Phaseolus vulgaris* L). Presentation made at the Annual Meeting of the Caribbean Food Crops Society held in St. Croix, U.S.V.I. in August, 1994.
- Beaver, J.S. 1994. Current status of biosafety in Puerto Rico. p. 13. In Proceedings of the USAID Latin America/Caribbean Region Biosafety Workshop held in Oracabessa, Jamaica from 10-13 May 1994.

- Jung, G., D.P. Coyne, P.W. Skroch, J. Nienhuis, E. Arnaud-Santana, J. Bokisi, H.M. Ariyaratne, J.R. Steadman and J.S. Beaver. 1995. Construction of a RAPD genetic linkage map and locations of common blight, web blight, and rust resistance loci and plant architecture loci in *Phaseolus vulgaris* L. Annual Report of the Bean Improvement Cooperative 38:113-114.
- Miklas, P., E. Johnson and J.S. Beaver. 1995. RAPD markers for QTL's expressing BGMV resistance in dry bean. Ann. Report of the Bean Improvement Cooperative 38:111-112.
- Steadman, J.R. (editor) with contributions from J. Beaver, M. Boudreau, D. Coyne, J. Groth, J. Kelly, M. McMillan, R. McMillan, P. Miklas, M. Pastor-Corrales, H. Schwartz and J. Stavely. 1995. Progress reported at the 2nd International Bean Rust Workshop. Annual Report of the Bean Improvement Cooperative 38:1-10.
- Azzam, O., O. Díaz, J.S. Beaver, R.L. Gilbertson, D.R. Russell and D.P. Maxwell. 1996. Transgenic beans with bean golden mosaic geminivirus coat protein gene are susceptible to virus infection. Ann. Rep. of the Bean Improv. Coop. 39: 39:276-277.
- Arnaud-Santana, E., D.P. Coyne, G. Godoy-Lutz, J.S. Beaver and J.R. Steadman. 1996. Use of cultural practices to reduce bean golden mosaic damage to dry beans in the Dominican Republic. Ann. Rep. of the Bean Improv. Coop. 39:79.
- Baiges, S., J.S. Beaver, P.N. Miklas and J.C. Rosas. 1996. Evaluation and selection of dry beans for heat tolerance. Ann. Rep. of the Bean Improv. Coop. 39:88-89.
- Miklas, P., V. Stone, E. Johnson and J. Beaver. 1996. Selective mapping of RAPD markers associated with QTL. Ann. Rep. of the Bean Improv. Coop. 39:140-141.
- Montoya, C.A., J.S. Beaver, R. Rodríguez, P.N. Miklas, G. Godoy and A. Molina. 1996. Inheritance of resistance to web blight of dry beans. Ann. Rep. of the Bean Improv. Coop. 39:144-145.
- Fernández Toledo, F., J.S. Beaver and E. Schroder. 1997. Nodulation and seed yield of common bean in moderate and high temperature environments. Ann. Rep. of the Bean Improv. Coop. 40: 55-56.
- Stavely, J.R., J.D. Kelly, K.F. Grafton, C.A. Mullins, A. Straw, R.T. McMillan Jr., J.S. Beaver, P.N. Miklas, J. Steinke, J.R. Steadman, D.P. Coyne, D.T. Lindgren and M.J. Silbernagel. 1997. Rust resistant bean germplasm releases 1994-1996. Ann. Rep. of the Bean Improv. Coop. 40:120-121.
- Coyne, D.P., E. Arnaud Santana, J. Beaver, J.R. Steadman, G. Godoy Lutz and D. Maxwell. 1997. A disease management program enhances bean production in the Dominican Republic. Paper presented at the 1997 Meeting of the ASHS.

- Molina Castañeda, A. and J.S. Beaver. 1998. Inheritance of Normal Pod Development in Bean Golden Mosaic Resistant Common Beans. Ann. Rep. of the Bean Improv. Coop.41:5-6.
- Miklas, P.N., R. Delorme, V. Stone, C.A. Urrea, J.S. Beaver and J.R. Steadman. 1998. A RAPD map of disease resistance traits in common bean. Ann. Rep. of the Bean Improv. Coop. 41:95-96.
- Beaver, J.S, M. Zapata and P. Miklas. 1999. Notice of release of PR9443-4, a bean golden mosaic, rust and common bacterial blight resistant light red kidney bean germplasm. Ann. Rep. of the Bean Improv. Coop. 42:139.
- Beaver, J.S. and R. Echavez-Badel. 1999. Notice of naming and release of Rosada Nativa, a bean golden mosaic resistant pink bean for Puerto Rico. Ann. Rep. of the Bean Improv. Coop. 42:138.
- Beaver, J.S. and P. Miklas. 1999. Notice of naming and release of Morales, a bean golden mosaic resistant small white bean cultivar for Puerto Rico. Ann. Rep. of the Bean Improv. Coop. 42:137.
- Macchiavelli, R. and J.S. Beaver. 1999. Analysis of genotype-by-environment interaction with AMNI models using SAS PROC Mixed. Proceedings of the XI Conference on Applied Statistics in Agriculture held in Manhattan, Kansas.
- Angel Sanchez, J.C., J.S. Beaver y J.D. Kelly. 1999. El uso de marcadores moleculares en la selección de líneas de frijol resistentes al mosaico dorado y mosaico común. Agronomía Mesoamericana. Presentation made at the Annual Meeting of the PCCMCA held in Guatemala City, Guatemala from 12-15 April 1999.
- Bracero-Acosta, V., L.I. Rivera-Vargas, D. Purcifull and J. Beaver. 1999. Estudios epidemiológicos del virus del mosaico dorado de la habichuela (*Phaseolus vulgaris* L.). Paper presented at the Annual Meeting of the Caribbean Division of the American Phytopathological Society held in San Juan, Puerto Rico from 21 to 25 June 1999.
- Bracero-Acosta, V., L.I. Rivera-Vargas, D. Purcifull and J. Beaver. 1999. ¿Es *Macrotillium* sp. Reservorio del Virus del Mosaico Dorado de la Habichuela? Paper presented at the Annual Meeting of the Caribbean Division of the American Phytopathological Society held in San Juan, Puerto Rico from 21 to 25 June 1999.
- Rivera-Vargas, L.I., J. Beaver, D.E. Purcifull, H. Hiebert and V. Bracero-Acosta. 1999. ELISA and PCR as diagnostic tools for bean golden mosaic virus in Puerto Rico. Paper presented at the Annual Meeting of the Caribbean Division of the American Phytopathological Society held in San Juan, Puerto Rico from 21 to 25 June 1999.
- Angel, J.C. and J. Beaver. 1999. Uso de marcadores moleculares para la selección de líneas resistentes al mosaico dorado y mosaico común del frijol. Paper presented at the Annual Meeting of the Caribbean Division of the American Phytopathological Society held in San Juan, Puerto Rico from 21 to 25 June 1999.

Takegami, J.C. and J.S. Beaver. 1999. Heredabilidad de resistencia a la mustia hilachosa en habichuela (*Phaseolus vulgaris* L.). Paper presented at the Annual Meeting of the Caribbean Division of the American Phytopathological Society held in San Juan, Puerto Rico from 21 to 25 June 1999.

Stavely, J.R., T.T. McMillan, J.S. Beaver and P.N. Miklas. 1996. Release of the first rust and bean golden mosaic virus resistant snap bean germplasm for the United States. *Phytopathology* 86:S125.

Stavely, J.R., R.T. McMillan Jr., J.S. Beaver and P.N. Miklas. 2001. Release of three McCaslan type, indeterminate rust and bean golden mosaic resistant snap bean germplasm lines. *Ann. Rep. of the Bean Improv. Coop.* 44:197-199.

Beaver, J.S. and R. Macchiavelli. 2002. Utility of the multiple-seed procedure of single-seed descent for bean improvement. *Ann. Rep. of the Bean Improv. Coop.* 45:34-35.

Beaver, J.S., J. Steadman and G. Godoy-Lutz. 2002. Bean rust research in the Caribbean *Ann. Rep. of the Bean Improv. Coop.* 45::132-133.

Echávez-Badel, R., M. Alameda y J.S. Beaver. 2002. Evaluación en el campo de vivero VICARIBE y UPR para resistencia a mustia hilachosa utilizando metodología de inoculación desarrollada en Puerto Rico. p. 24. Resúmenes XLVIII Reunión Anual del PCCMCA. 14 a 20 de abril 2003. Boca Chica, República Dominicana.

Godoy-Lutz, G., J.S. Beaver y J.R. Steadman. 2002. Evaluación de familias F₃ con genes de resistencia *bgm-1* y *bc-3* para la resistencia al Mosaico Dorado Amarillo y Mosaico Necrótico Común del frijol común en la República Dominicana. p. 26. Resúmenes XLVIII Reunión Anual del PCCMCA. 14 a 20 de abril 2003. Boca Chica, República Dominicana.

Muñoz, C. Y J.S. Beaver. 2002. Herencia de la resistencia a Virus del Mosaico Amarillo de Frijol en líneas derivadas de cruzamientos interespecíficos. p 27. Resúmenes XLVIII Reunión Anual del PCCMCA. 14 a 20 de abril 2003. Boca Chica, República Dominicana.

Rosas, J.C. y J.S. Beaver. 2002. Avances y retos en el mejoramiento de frijoles de la raza Mesoamericana. p. 20. Resúmenes XLVIII Reunión Anual del PCCMCA. 14 a 20 de abril 2003. Boca Chica, República Dominicana.

Steadman, J.R., M.A. Pastor-Corrales and J.S. Beaver. 2002. An overview of the 3rd Bean Rust and 2nd Bean Common Bacterial Blight International Workshops, March 4-8, 2002, Pietermaritzburg, South Africa. *Ann. Rep. of the Bean Improv. Coop.* 45:120-124.

Zapata, M. and J.S. Beaver. 2002. Common bacterial blight studies in the Caribbean and Central America. *Ann. Rep. of the Bean Improv. Coop.* 45:166-167.

- Rosas, J.C., J.S. Beaver y J.R. Steadman. 2003. Análisis del mejoramiento del frijol Mesoamericano para Centro América y el Caribe. p. 73. Resúmenes XLIX Reunión Anual del PCCMCA. 27 de abril a 3 de mayo 2003. La Ceiba, Honduras.
- Murillo Ilbay, A. Y J.S. Beaver. 2003. Estrategias de mejoramiento genético para resistencia a roya (*Uromyces appendiculatus*) de cultivares de frijol *Phaseolus vulgaris* L. en Ecuador. p. 77. Resúmenes XLIX Reunión Anual del PCCMCA. 27 de abril a 3 de mayo 2003. La Ceiba, Honduras.
- Rosas, J.C., J.S. Beaver y L. Aranda. 2003. Evaluación de germoplasma y desarrollo de líneas resistentes a la bacteriosis común del frijol en Honduras. p. 78. Resúmenes XLIX Reunión Anual del PCCMCA. 27 de abril a 3 de mayo 2003. La Ceiba, Honduras.
- Ferwerda, F.H., M.J. Bassett and J. Beaver. 2003. Viability of reciprocal interspecific crosses between *Phaseolus vulgaris* L. and *Phaseolus acutifolius* A. Gray. Ann. Rep. of the Bean Improv. Coop. 46:29-30.
- Blair, M.W., M.C. Giraldo, L. Duran, J. Beaver and J.C. Nin. 2003. Phaseolin characterization of Caribbean common bean germplasm. Ann. Rep. of the Bean Improv. Coop. 46:63-64.
- Osorno, J.M., J.S. Beaver, F. Ferwerda and P.N. Miklas. 2003. Two genes from *Phaseolus coccimeus* L. confer resistance to bean golden yellow mosaic virus. Ann. Rep. of the Bean Improv. Coop. 46:147-148.
- Osorno, J.M., M. Acevedo Roman, C.G. German Muñoz Perea, F.H. Ferwerda and J.S. Beaver. 2004. Recent advances in the development of bean golden yellow mosaic resistant bean lines. Ann. Rep. of the Bean Improv. Coop. 47:51-52.
- Beaver, J.S. and J.C. Rosas. 2003. Investigación colaborativa de frijol en Centroamérica y el Caribe. Invited paper presented at the III Seminario de Judía de la Península Ibérica held in Lourená (Lugo), Spain in October 2003.
- Rosas, J.C., J.S. Beaver, S. Beebe and A. Viana. 2004. Names of common bean varieties released in Central America and the Caribbean. Ann. Rep. of the Bean Improv. Coop. 47:329-330.
- Blair, M.W., W. Pantoja, J. Beaver, J.C. Nin and E. Prophete. 2005. Genetic diversity of Caribbean common bean germplasm. Ann. Rep. of the Bean Improv. Coop. 48:12-13.
- Zapata, M. and J. S. Beaver. 2005. Differential leaf reaction of common bean lines to pathogenic races of *Xanthomonas axonopodis* pv. *phaseoli* from Costa Rica, Nicaragua and Puerto Rico. Ann. Rep. of the Bean Improv. Coop. 48:104-105.

- González Martínez, N.A., F.H. Ferwerda, M. Alameda, J.C. Rosas and J.S. Beaver. 2005. Identification of new sources of resistance to web blight of common bean. *Ann. Rep. of the Bean Improv. Coop.* 48:130-131.
- Saliceti, M., E. Román-Paoli and J.S. Beaver. 2006. Repeatability of morphological and phenological traits used by the Cropgro-Dry Bean Crop Model. *Ann. Rep. of the Bean Improv. Coop.* 49:43-44.
- Godoy-Lutz, G., S. Kuniyaga, J.R. Steadman, J.S. Beaver and J.C. Rosas. 2006. DNA sequencing and analysis: A tool for improving web blight management and resistance breeding. *Ann. Rep. of the Bean Improv. Coop.* 49:87-88.
- Aranda-Rocha, L., T. Porch and J. Beaver. 2006. Development of methods for the genetic transformation of common bean through electroporation. Paper presented at the 2006 meeting of the Caribbean Food Crops Society held in San Juan, Puerto Rico in July 2006.
- Pandya, N. and J.S. Beaver . 2007. Modified atmosphere packaging of green-shelled common bean. *Ann. Rep. of the Bean Improv. Coop.* 50:57-58.
- Blair, M.W., Blair, L.M. Rodriguez, F. Fedraza, F. Morales, S. Beebe, P. Miklas and J. Beaver. 2007. Development and genetic mapping of a SCAR marker for the Bean Golden Yellow Mosaic geminivirus resistance gene *bgm-1*. *Ann. Rep. of the Bean Improv. Coop.* 50:77-78.
- Terán, H., C. Strausbaugh, I. Eujayl, J. Beaver, P.N. Miklas and S.P. Singh. 2008. Response of BGMV and BGYMV resistant common bean to Beet Curly Top Virus. *Ann. Rep. of the Bean Improv. Coop.* 51:168-169.
- Beaver, J.S., M. Alameda and J.C. Rosas. 2008. Breeding beans for resistance to web blight. *Ann. Rep. of the Bean Improv. Coop.* 51:30-31.
- González, N., J. Beaver, J.C. Rosas, G. Godoy-Lutz and J. Steadman. 2008. Development of a differential set of common bean lines to screen for web blight pathogen virulence. *Ann. Rep. of the Bean Improv. Coop.* 51:32-33.
- Singh, S.P., H. Terán and J.S. Beaver. 2009. Scarlet runner bean germplasm accessions G 35006 and G 35172 possess resistance to multiple diseases of common bean. *Ann. Rep. of the Bean Improv. Coop.* 52:22-23.
- Singh, S.P., H. Terán and J.S. Beaver. 2009. Scarlet runner bean germplasm accessions G 35006 and G 35172 possess resistance to multiple diseases of common bean. *Ann. Rep. of the Bean Improv. Coop.* 52:22-23.

Singh, S.P., H. Terán and J.S. Beaver. 2009. Scarlet runner bean germplasm accessions G 35006 and G 35172 possess resistance to multiple diseases of common bean. Ann. Rep. of the Bean Improv. Coop. 52:22-23.

Beaver, J.S., M. Zapata, M. Alameda, T. Porch, J.C. Rosas, G. Godoy de Lutz y E. Prophete. 2009. Mejoramiento genético del frijol en el Caribe. Cartel presentado en la Segundo Congreso Internacional y Feria Nacional del Frijol realizado en Zacatecas, Mexico - 4 a 7 de agosto de 2009.

Ruiz L, Beaver JS, Rosas JC, Ernest E. 2010. Evaluation of Lima bean landraces from Puerto Rico. Ann. Rep. of the Bean Improvement Coop. 53:72-73.

WEB SITES

Guía técnica para la producción de habichuela. 2009. Estación Experimental Agrícola, Universidad de Puerto Rico.

http://academic.uprm.edu/jbeaver/index_files/2009%20Bean%20Produccion%20Guides/Guia%20Tecnica%20para%20la%20Produccion%20de%20Habichuelas.html

Guía técnica para la producción de maíz. 2009. Estación Experimental Agrícola, Universidad de Puerto Rico.

http://academic.uprm.edu/jbeaver/index_files/2009%20Maize%20Production%20Guide/2008%20Maize%20CT/Conjunto%20Tecnologico%20de%20maiz.html

Programa de semilla. 2009. Estación Experimental Agrícola, Universidad de Puerto Rico.

http://academic.uprm.edu/jbeaver/index_files/Seed%20program%20web%20site/Programa%20de%20semilla.htm

Godoy-Lutz G, Beaver JS, Rosas JC, Steadman JR. 2010. Web blight research techniques posted on the web site of the Bean Improvement Cooperative.

http://www.css.msu.edu/bic/PDF/Web_Blight.pdf