# ANNUAL REPORT OF THE

# **BEAN IMPROVEMENT**



# COOPERATIVE

A VOLUNTARY AND INFORMAL ORGANIZATION TO EFFECT THE EXCHANGE OF INFORMATION AND MATERIALS

> VOLUME 49 2006

> > 1



The XLIX

# Report of The

# **BEAN IMPROVEMENT COOPERATIVE**

No. 49

March 2006

[ISSN 0084-7747]

## **Coordinating Committee**

Jim Beaver Jim Kelly (President) Phil Miklas Soon Jai Park Howard F. Schwartz (Ex officio) Bert Vandenberg Antonio de Ron Ken Kmiecik Jim Myers Ron Riley Ron Shellenberger

Please address correspondence about BIC membership and BIC annual reports to:

Dr. James D. Kelly, BIC President Department of Crop & Soil Sciences Michigan State University East Lansing, MI 48824 U. S. A. Tele: 517-355-0271 extension 1181 // FAX: 517-353-3955 Email: kellyj@msu.edu

> http://www.css.msu.edu/bic FREQUENTLY UPDATED

Note: It will be assumed that interested individuals may freely cite (including author credit) any report or note in this BIC report, unless the author indicates to the contrary. As a professional courtesy, individuals citing BIC notes should notify the authors of his or her intentions. The BIC Coordinating Committee approved this statement on November 5, 1975.

## TABLE OF CONTENTS

Page	)
XLIX Annual Report of the Bean Improvement Cooperative i	
BIC Committee Memberships - 1957 to 2006ii	
Report of BIC Genetics Committeeii	
2005 BIC Awards Recipients iv	
In Memory of Shigemi Honmaix	
BIC/NAPIA Meeting in 2007 ix	

### **RESEARCH PAPERS FOR 2006**

## **Oral Presentations:**

Plant Breeding and Genomics: Staying In Touch	
Perry Cregan	1
The Beans for Health Alliance: A Public-Private Sector Partnership to Support Research on the Nutritional and	
Health Attributes of Beans	
Widders, I.E.	3
Phenolic Acids Profiles of Beans Commonly Consumed in the United States	
Devanand L. Luthria, Marcial A. Pastor-Corrales	6
Effect of Isolates and Concentrations of Xanthomonas Campestris py. Phaseoli on Dry Bean Genotypes	
Margarita Lema, Henry Terán, and Shree P. Singh	9
Comparison of Marker-Assisted and Direct Selection for Introgression of Common Bacterial Blight Resistance in	1
Common Bean	
Robert W. Duncan, Henry Terán, Shree P. Singh, Robert L. Gilbertson	11
Molecular Markers Used To Improve the Level of Resistance to Common Bacterial Blight in Dry Bean	
Ibarra-Perez, F.J., J.A. Acosta-Gallegos, R. Navarrete-Maya, R. Zandate-Hernandez, P. Fernandez-	
Hernandez and J.D. Kelly	13
Development Of Races Of <i>Phytophtrora Phaseoli</i> , The Causal Agent Of Downy Mildew Of Lima Bean	
(Phaseolus Lunatus) And Development Of Resistance	
T. A. Evans, R. P. Mulrooney and L. Santamaria	15
Epidemiological Studies of Downy Mildew of Lima Bean Caused By Phytophthora Phaseoli	
L. Santamaria, T.A. Evans and R.P. Mulrooney	17
The 'Maffei 15' Lima Bean Compensates For Reduced Plant Stand	
Pill, Wallace G., Thomas A. Evans, Michael W. Olszewski, Robert P. Mulrooney, and Walter E. Kee Jr	19
Selection for Drought Resistance in Dry Bean Landraces and Cultivars	
Carlos German Muñoz-Perea, Henry Terán, Richard G. Allen, James L. Wright, Dale T. Westermann, and	
Shree P. Singh	21
Low Phosphorus Tolerance In An Andean Bean Population	
Karen A. Cichy, Matthew Blair, and Sieg Snapp	23
Managing White Mold of Lima Beans With Reduced Risk Fungicides And Biofungicides	
Kathryne L. Everts and Xin-Gen Zhou	27
Chemical Control Strategies for Downy Mildew (Phytophthora Phaseoli) Of Baby Lima Bean	
Mulrooney RP, Davey JF, Evans TA	29
Reaction Of Common Cultivars To The Asian Soybean Rust Pathogen, Phakopsora Pachyrhizi, Under Field	
Conditions In South Africa And Brazil	
M. A. Pastor-Corrales, M. M. Liebenberg, Aloisio Sartorato, P. A. Arraes-Pereira	31
Inheritance and Allelism Of Anthracnose Resistance In Common Bean Jalo Vermelho Cultivar	
M. C. Gonçalves-Vidigal, G.F. Lacanallo, P.S. Vidigal Filho, M. J. C. Nunes and J. P. Poletine	33
Characterization of the Anthracnose Resistance Genes In Andean Common Bean Jalo Listras Pretas Cultivar	
Pedro Soares Vidigal Filho, Maria Celeste Gonçalves-Vidigal, Abrão F. Medeiros, Pedrina Gonçalves	
Vidigal	35
Inheritance of Resistance to Lima Bean Downy Mildew (Phytophthora Phaseoli) and Preliminary Lima	
Improvement Efforts	
E.G. Ernest, W.E. Kee, L. Santamaria, T.A. Evans	37
Selection of Backcross <i>Phaseolus</i> Germplasm Lines Derived Through Interspecific Hybridization of Common	
Bean and Tepary Bean	
Richard C. Pratt, Joseph C. Scheerens, Soon J. Park	39

Application of Different In Vivo Pollination Techniques to Improve the Fertilization Efficiency of Interspecies	
Crosses in the Genus <i>Phaseolus</i>	
Valarmathi Gurusamy, Bert Vandenberg and Kirstin Bett	41
Repeatability of Morphological & Phenological Traits Used By The Cropgro-Dry Bean Crop Model	
Marcos Saliceti, Elvin Román-Paoli and James S. Beaver	43
Systematics and Molecular Variability of Bean Rusts	15
M.C. Alle Molecular Advances with Common Bean Pust Peristance	43
Phillip N. Mikles	17
Thinp N. Wikids	+/
MM Liebenberg ALLiebenberg and ZA Pretorius	49
Diversity of the Rust Pathogen and Common Bean Guides Gene Deployment for Development of Bean Cultivars	. 17
with Durable Rust Resistance	
M. A. Pastor-Corrales	51
Proceedings from the Rust Workshop Held at the 2005 BIC Meeting: Challenges To and Priorities for	
Management of Rusts of Common Bean	
H. F. Schwartz, J. R. Steadman and M. A. Pastor-Corrales	53
Poster Presentations:	
Initial AFLP Tagging of the Gene (Cl) for Circumlineated Pattern	
L. Aranda, T.G. Porch and M.J. Bassett	55
Evaluation of Common Bean for Resistance to Clover Yellow Vein Virus	
Richard C. Larsen and Phillip N. Miklas	57
Tillage, Pesticide and Resistance Management Of White Mold In Dry Bean	
Howard F. Schwartz, Mark A. Brick, J. Barry Ogg, Kris L. Otto and Mark S. McMillan	59
Construction and Characterization of a Common Bean BAC Library	
Kangfu Yu, Margaret Haffner and Soon J. Park	61
Quantitative Trait Loci for Resistance to White Mold in Common Bean	
Judd Maxwell, Mark Brick, Patrick Byrne, Howard Schwartz, Xueyan Shan, James B. Ogg and Robert	()
Henson $(D + D)$	63
Genetic Divergence in Landrace Bean ( <i>Phaseolus Vulgaris</i> L.) Germplasm in the State of Parana, Brazil	65
L. P. Dollett, M. C. Goliçaives- viulgal, A. K. Schuellel, P. S. viulgal Fillio and Kiasinann, J. P	03
Phillip N. Mikles	67
Halo Blight Resistance In Host Differential Cultivar ZAA 12 Is Conditioned By Three Major Gene Loci	
Phillin Miklas and Deidré Fourie	69
Biological Control of Sclerotinia Diseases (Sclerotinia sclerotiorum) of Bean and Canola by Coniothyrium	
Minitans	
McLaren, D.L.' Huang, HC., Conner, R.L., McAndrew, D.W., Irvine, R.B.	71
A Molecular Marker Linkage Map of Snap Bean (Phaseolus vulgaris)	
J.W. Davis, D. Kean, B. Yorgey, D. Fourie, P.N. Miklas, & J.R. Myers	73
Arcelin–Like And -Amylase–Like Inhibitor DNA Sequences Cosegregate With A Novel Seed Storage Protein	
In <i>Phaseolus vulgaris</i> X <i>P. acutifolius</i> Hybrids	
Paul M. Kusolwa and James R. Myers	75
New Sources of Resistance to Bean Rust and Implications for Host-Pathogen Coevolution	
Acevedo, M., Steadman, J.R., Rosas, J.C., J. Venegas	77
Timing of Anthocyanin Deposition in Black Bean	70
Adams Frimpong, Perumal Vijayan And Kirstin Bett.	79
Effect of Kate of Seed Infection on Anthracnose Severity And Yield Loss In Dry Beans	01
Conner, K.L., McAndrew, D. W., Balasubramanian, P. and Klenn, F.A.	81
George S. Abawi, John W. Ludwig, and Beth K. Gugino.	82
Dry Bean Transformation to Enhance White Mold Resistance	05
Ann Roselle O Armenia Richard F Allison and James D Kelly	85
DNA Sequencing and Analysis: A Tool for Improving Web Blight Management and Resistance Breeding	
Godov-Lutz G, Kuninaga S, Steadman JR, Beaver JS. Rosas JC	87
Development of Drought-Resistant Bean Genotypes for Ecuador	
Esteban Falconí, Jose Pinzón, and James D. Kelly	89

Use of Multi-Sites to Identify Partial Resistance to <i>Sclerotinia sclerotiorum</i> In Common Bean over Multiple	
Years	
L.K. Otto-Hanson, J.R. Steadman, C. Kurowski, R. Mainz, J. Kelly, P. Griffiths, K. Grafton, J. Myers, P.	
Miklas, H. Schwartz, S. Singh, K. Kmiecik, R. Felix, E. Kee, and A. Oppelaar	. 91
Early Growth Promotion of Dry Beans (Phaseolus Vulgaris L.) by Gibberellic Acid	
Alexander D. Pavlista, James A. Schild, Gary W. Hergert, and Carlos A. Urrea	. 93
Progress in Breeding Dry Beans with Resistance to Fungal Diseases in South Africa	
MM Liebenberg, AJ Liebenberg and CMS Mienie	. 95
Bean Quality Accessed By Different Soaking and Cooking Methods	
P.Z. Bassinello, M.G.C. Oliveira, L.L. Rodrigues, D.M. Soares, M.J.D. Peloso, M. Thung	97
Response of Dry Bean Cultivars to Fusarium Root Rot under Field and Controlled Conditions	
V. N. Bilgi, C. A. Bradley, J. B. Rasmussen, S. D. Khot and K. F. Grafton	. 99
'Almonga', A New Spanish Planchada Dry Bean	
Carmen ASENSIO, M.Carmen ASENSIO S-MANZANERA, Ruth LOPEZ	. 101
Preliminary QTL Analysis for White Mold Resistance In A Black Bean x Wild Mexican Bean Inbred Backcross	
Mapping Population	
K.A. Terpstra and J.D. Kelly	. 103
Distribution and Pathogenicity of Bean Common Bacterial Blight in the Semiarid Highlands of Mexico	
R. Navarrete-Maya, J.A. Acosta-Gallegos, F.J. Ibarra-Pérez, R. Zandate-Hernández, P. Fernández-	
Hernández, J. Navarrete-Maya and J. D. Kelly.	. 105
Introgressed Genotypes To Improve Common Bean	
Santalla, M., M. Lema, M. Pérez-Barbeito, M. De La Fuente, S.P. Singh & A.M. De Ron	. 107
Variability In Symbiotic Nitrogen Fixation In Common Bean	100
A. P. Rodiño, M. Santalla, A. M. González, J. J. Drevon and A. M. De Ron	. 109
Preliminary Screening of Runner Bean for Tolerance to Low Temperature at Early Stage	
A. P. Rodino, M. Santalla, and A. M. De Ron	. 111
Agronomic Performance of Flageolet Beans in Spain	110
A. M. De Ron, A. P. Rodino, S. Rodriguez, M. Santalla	
Modified Petzolat and Dickson Scale for white Mold Rating Of Common Bean	115
Henry Teran, Margarita Lema, Howard F. Schwartz, Robert Duncan, Robert Gilbertson, and Shree P. Singh.	
On-Farm Dry Bean Breeding For High- And Low-Input Conventional and Organic Farming Systems	
Shree P. Singh, Henry Teran, Dale Westermann, Kichard Hayes, Carlos German Munoz, Margarita Lema,	117
Marie Dennis, David Fullmer, Richard Parrott, Kenneth Mulberry, and Jay Smith	. 11/
Analysis of Iron Content in Different Cultivars, Tissues And Developmental Stages Of Common Bean	110
Espinosa-Huerta E., Acosta-Gallegos J. A., Guzman-Maldonado H.S., Mora-Aviles M.A.	. 119
Squeede Buiz M. Delgade Sánchez B. Guzman Maldenade, S.H. Villerde Dinade E. Acosta Callagos	
Saucedo-Kuiz, M., Deigado-Sanchez, P., Guzinan-Maldonado, S.H., Vinoido-Pineda, E., Acosta-Ganegos,	121
J.A. allu Mold-Avlies, M.A.	.121
M C Ríos Uglada P. Raynoso Comacha I. Tarros Bachaco, I.A. Acosta Callagos, A.C. Balamina, Salinas	
M.C. KIOS-Oglade, K. Keynoso-Canacho, I. Tomes-Facheco, J.A. Acosta-Oanegos, A.C. Faloninio-Sannas, M. Pamos Gómez, F. Gonzólez Jasso, and S.H. Guzmán Maldonado	122
Phaseolus acutifolius as a Potential Bridge Species in the Hybridization of P yulgaris And P angustissimus	. 123
Gurusamy Valarmathi Jocenascual Martinez Rojo, Kirstin Bett and Bert Vandenberg	125
2006 Articles.	. 123
Agronomic Diversity of Wild Phaseolus Species in Central Mexico	
Iorge A Acosta-Gallegos Francisco Manuel Mendoza-Hernandez Alejandra Mora-Aviles Rosa	
Navarrete-Maya Bismarck Aguilar-Garzon and Salvador H. Guzman-Maldonado	127
Fyaluating Heirloom Dry Bean Varieties As A Niche Market Cron In The Maritime Northwest	. 127
Innifer Wagner, Carol Miles, and Phil Miklas	129
Genetic Diversity among Common Bean ( <i>Phaseolus vulgaris</i> L.) Accessions Based On RAPD Markers	. 12)
Marco Antonio Anarecido Barelli Maria Celeste Goncalves-Vidigal Cláudia Thomazella Pedro Soares	
Vidigal Filho and Carlos Alberto Scapim	131
Genetic Divergence In Common Bean ( <i>Phaseolus vulgaris</i> L.) Landraces from Paraná State	
L. P. Bonett, M. C. Goncalves-Vidigal, A. R. Schuelter, P. S. Vidigal Filho and J. P. Klasmann	. 133
Evidence of Gene Flow among Bean Species of Section <i>Phaseoli</i> in Colombia and Costa Rica Using	
Microsatellite Markers	
R.I. González-Torres, M. Carvajal, O. Toro, M.C. Duque, R. Arava & D.G. Debouck	. 135
Frimex: A Common Bean Data Base Which Includes Mexican Old And Recent Bred Cultivars	

Rigoberto Rosales-Serna, Juan Manuel Hernández-Casillas, Octavio Salvador Magaña-Torres and Horacio González-Ramírez	137
Predicting The Genetic Potential In Segregating Populations Of Common Bean ( <i>Phaseolus Vulgaris</i> L.) Carlos Lásaro P. de Melo: José Eustáquio de S. Carneiro: Pedro Crescêncio S. Carneiro: Lêlisângela C. da	197
Silva; José Eduardo V. Cintra; Alisson C. Pereira; Maurílio A. Moreira and Everaldo G. Barros	139
Relative Heterosis In Common Bean ( <i>Phaseolus vulgaris</i> L.) Genotypes	
Lucas Silvério, M. C. Gonçalves-Vidigal, P.S. Vidigal Filho, C. A. Bastos Andrade and J. P. Poletine	141
DNA Sequence Polymorphisms Among Common Bean Genes	
Melody McConnell, Sujan Mamidi, Rian Lee, and Phillip McClean	143
Serine Proteinase Inhibitors In Common Bean (Phaseolus vulgaris L.): Preliminary Investigation on Genome	
Organisation	
Incoronata Galasso, Angela R. Piergiovanni, Lucia Lioi, Bruno Campion, Francesca Sparvoli and Roberto	
Bollini	145
Toward Production of Genetically Modified Common Bean via Agrobacterium-Mediated Transformation	1 4 7
Mohamed F. Mohamed, Jun Cao and Elizabeth D. Earle.	147
Consting Phaseolus vulgaris L. EMS Mutants to Isolate Plants Falling in Seed Development and to Study	
S Siluá D Lariguat C Dankhurat IM Jacquamin W I Proughton and I D Paudain	140
Tannin Content of Commercial Classes of Common Bean	149
M W Blair G V Caldas P Avila C Lascano	151
Low Phytic Acid ( <i>Lna</i> ) Mutants In Common Bean ( <i>Phaseolus vulgaris</i> L.): Mutant Isolation And Molecular	1.5 1
Analysis of Mvo-Inositol-3-Phosphate Synthase	
E. Doria, B. Campion, M. Fileppi, I. Galasso, R. Bollini, E. Nielsen and Sparvoli	153
Iron, Zinc and Protein Concentration in African Bean Cultivars	
P. M. Kimani, E. Karuri and S. Mwaura	155
The Effect Of Soaking And Cooking On The Oligosaccharide Content Of Red Kidney Beans (Phaseolus	
vulgaris L.)	
G.Nyombaire, M.Siddiq, K.D.Dolan	157
Effect Of Soaking On The Oligosaccharide Content In Common Beans	
Carmen Jacinto-Hernández; Marcela E. Blancas-Carrazco; Samuel Sánchez-Domínguez; J. Enrique	
Rodríguez-Pérez; Ramón Garza Garcia; Irma Bernal-Lugo	159
Interaction of Storage Conditions On The Loss Of Bean Quality	171
Carmen Jacinto-Hernandez, Lucero Mendoza-Banena Irma Bernal-Lugo y Ramon Garza-Garcia	161
Effect of Storage on the Antioxidant Activity of Common Beans ( <i>Phaseolus vulgaris</i> L.)	162
Genetic Variability of Dre-Harvest Sprouting In Black Beans Genotypes	105
Paulo Campos Granado Zerbinatti. Nelson da Silva Fonseca Júnior. Milena Pierotti Euzebio. Édison	
Miglioranza	165
Genetic Variability of Pre-Harvest Sprouting In Pinto Beans Genotypes	100
Paulo Campos Granado Zerbinatti, Nelson da Silva Fonseca Júnior, Milena Pierotti Euzebio, Edison	
Miglioranza	167
Genetic Control of Seed Shape of the Common Bean (Phaseolus vulgaris L.)	
Dimitar Genchev	169
Seed Coat Integrity: Seed Characteristics and Micro-structure of Seed Coats Resistant to Mechanical Damage of	
Common Bean (Phaseolus vulgaris L.)	
S. J. Park and T. Rupert	171
Effect of Storage on Seed Coat Color Changes In Common Bean	
Patricia Vargas Vázquez and Patricia Pérez Herrera	173
Slow Aging, Darkening, or Oxidizing Dry Bean	175
Shree P. Singn	1/5
John Payanati Bratt Despain Pat Jannings Trish DaMark Pager Hoffman	177
Assessing Germalasm Resistance to the Sovhean Anhid Virus Complex	1 / /
Michell Sass. Thomas German and James Nienhuis	179
Development of a SCAR Marker for Common Bean Resistance to the Bean Pod Weevil (Anion Godmani	
Wagner)	
M.W. Blair, C. Cardona, C. Quintero, R. Garza, N. Weeden, and S.P. Singh	181

Field Management Of Common Bean Bruchids By Using Selected Phytochemicals In Haricot Bean ( <i>Phaseolus vulgaris</i> )	
Mesele Gemu, Shiferaw Mekonen and Asrat Asfaw	. 183
On-Farm Evaluation of Edible Oils against Bean Bruchids (Acanthoscelides obtectus & Zobratus subfasciatus)	
Mesele Gemu, Shiferaw Mekonen and Asrat Asfaw.	. 185
Pyramiding Of Anthracnose, Angular Leaf Spot and Rust Resistance Genes In Black And Red Bean Cultivars Costa, M.R.: Tanure, J.P.M.: Arruda, K.M.A.: Carneiro, J.E.S.: Moreira, M.A.: Barros, E.G.	. 187
Potential Use of TRAP Markers for Mapping Telomeres In Common Bean	
Phillip N. Miklas and Jinguo Hu	189
Protocol for Visualizing Sequence Related Amplified Polymorphism (SRAP) and Target Region Amplified	
Polymorphism (TRAP) Markers on Agarose Gels	
Karolyn A. Terpstra, Evan M. Wright, and James D. Kelly	191
Validation and Use for Marker-Assisted Selection of Scar Marker Linked To Common Bean Rust Resistance	
Gene Ur-5	
Thiago Lívio P. O. De Souza, Suelen N. Dessaune, Ana L. Alzate-Marin, Endson S. Nunes, Vagner T. De	
Oueiroz. Maurilio A. Moreira & Everaldo G. De Barros	193
Development of STS Markers Tightly Linked To The Major OTL For Common Bacterial Blight Resistance In	
Common Bean	
Shuvu Liu, Kangfu Yu, Soon J. Park	195
Pyramiding Angular Leaf Spot Resistance Genes in a "Carioca-Type" Common Bean	
Demerson A. Sanglard, Jeziel D. Damasceno, Thiago Lívio P. O. de Souza, Bruno P. Balbi, Maria A. C.	
Medonca. Everaldo G. de Barros and Maurilio A. Moreira	.197
The Impact of CMV in Reducing Yield Of Selected Snap Bean Cultivars And Lines	
A. G. Taylor and J. W. Shail	199
Evaluation for Resistance to Anthracnose of a Core Collection Established From the CRF-INIA Common Bean	
Collection	
E. Pérez Vega, Campa A. L. de la Rosa, R. Giraldez, and J.J. Ferreira.	201
Dissection of The Anthracnose Resistance In The Differential Cultivars TU And MDRK	
Campa A.: E. Pérez, Vega C. Rodríguez-Suarez, R. Giraldez, and J.J. Ferreira	203
Reaction Of Black Bean Lines To Anthracnose. Angular Leaf Spot And Rust Pathogens	
José Eduardo V. Cintra; Pedro Crescêncio S. Carneiro; José Eustáguio S. Carneiro, Carlos Lásaro P. Melo;	
Alisson C. Pereira & Everaldo G. Barros	205
Reaction of "Carioca-Type" Bean Lines To Anthracnose, Angular Leaf Spot And Rust Pathogens	
José Eduardo V. Cintra; Pedro Crescêncio S. Carneiro; José Eustáquio S. Carneiro; Carlos Lásaro P. Melo;	
Márcia R. Costa; Maurílio A. Moreira & Everaldo G. Barros	.207
Phaeoisariopsis griseola Virulence Pattern And RAPD Diversity	
R. A. V Garcia., M. S Carneiro., A. Sartorato	209
Angular Leaf Spot.	
R. A. V. Garcia, M. S.Carneiro, A. Sartorato	211
A Proposal For A Uniform Screening Procedure For The Greenhouse Evaluation Of Variability Of Xanthomonas	
axonopodis pv. phaseoli And Resistance on Leaves of Phaseolus vulgaris	
Mildred Zapata	213
Reaction Of 36 Common Bean Cultivars Inoculated With Four Xanthomonas campestris pv. phaseoli Isolates.	
R. Navarrete-Maya, J. A. Acosta-Gallegos, F. J. Ibarra-Pérez, J. Navarrete-Maya, F. M. Mendoza	
Hernández and J. D. Kelly	215
A New Method for Screening Resistance of Common Beans (Phaseolus vulgaris L.) To Fusarium Root Rot	
S. Chaudhary, T.R. Anderson, S. J. Park, K. Yu	.217
Soil Moisture Affecting Activities of Rhizoctonia solani and Trichoderma harzianum	
Paula Jr., T.J. and Hau, B	219
White Mold on Common Bean Related to Plant Density, Fungicide, Irrigation and Application of Trichoderma	
spp.	
Paula Jr., T.J.; Vieira, R.F.; Bernardes, A.; Ribeiro do Vale, F.X.	221
Identification of Partial Resistance To Sclerotinia sclerotiorum in Common Bean At Multiple Locations in 2005	
J.R. Steadman, L.K. Otto-Hanson, J. Breathnach, C. Kurowski, R. Mainz, J. Kelly, P. Griffiths, J. Myers, P.	
Miklas, H. Schwartz, S. Singh and A. Oppelaar	223
Pathogenic Variability of Populations of Uromyces appendiculatus, Cause of Bean Rust in Individual Bean Fields	
and Development of Bean Rust Sampling Plans Based on Costs of Sampling	
C.N. Jochua, J.R. Steadman, X. Xue, K.M. Eskridge and M.I V. Amane	.225

Virulence Diversity of <i>Uromyces appendiculatus</i> In Minas Gerais State, Brazil Thiago Lívio P. O. de Souza, Vilmar A. Bagagnin, Demerson A. Sanglard Maurilio A. Moreira, &	
Everaldo G. de Barros	227
Resistance Sources for Rust Angular Leaf Snot and Common Bacterial Blight in Common Bean for Ecuador	. 22 1
Á Murillo I E Falconí N Mazón and E Peralta I	229
Pathogenic Variability of Uromyces appendiculatus In Bean Production Areas In Northern Ecuador	,
Betty Paucar, Angel Murillo I., Esteban Falconi, Eduardo Peralta I.	.231
Contents of Carbohydrates in Salt-Stressed <i>Phaseolus</i> Species	<b>.</b>
Leobardo Bahena-Betancourt, Lourdes Macias-Kodriguez and Jeannette S. Bayuelo-Jimenez	.233
Laborda Dahana Datanagurt and Leannatta S. Dayuala Jimánaz	225
Lebardo Banena-Belancouri and Jeanneue S. Bayuelo-Jimenez	. 233
G B Biudes V Mode Cirino Bogério T Faria and Bioardo T Faria	227
Performance Of Common Bean Genotypes For Farly Maturity In Semi-Arid Areas Of Fastern Ethionia	. 237
Chemeda Fininsa and Bulti Tesso	230
Drought Resistance In Different Market Classes Of Dry Bean	. 237
Margarita Lema Henry Terán Marie Dennis Craig Robinson and Shree P Singh	241
Dynamics of Day And Night Water Potential among Leaves of Common Bean under Soil-Water Deficit	
Galván-Tovar, Marcos: Kohashi-Shibata, Josué: López-Castañeda, Cándido: Acosta-Gallegos Jorge:	
Martínez-Garza. Ángel. García-Esteva. Antonio.	.243
Chlorophyll Content In Bean ( <i>Phaseolus</i> ) In Saline Soil With Foliar-Applied Of Iron Sulfate	
María Teresa Rodríguez-González, J. Alberto Escalante-Estrada, Mario Gutiérrez Rodríguez y Ricardo	
Vega Muñoz	.245
Diversity In Tolerance Between Phaseolus vulgaris And Phaseolus coccineus Genotypes To Salinity	
Mario Gutiérrez Rodríguez, José Alberto Escalante Estrada	. 247
Evaluation of Limas under Imposed Environmental Stress	
John Rayapati and Brett Despain	. 249
Effect of Two Tillage Systems on Structural Soil Properties And Grain Yield Of Dry Beans Under Rainfed	
Conditions In North-Central Mexico	
E.S. Osuna-Ceja, J.S Padilla-Ramírez, E. Martínez-Meza, M.A. Martínez-Gamiño And J.A.	
Acosta-Gallegos	. 251
Beans ( <i>Phaseolus vulgaris</i> L.) Yield In Relation To Growth Habit, Plant Density and Nitrogen Fertilization	
J. Alberto Escalante-Estrada, Maria Teresa Rodríguez- Gonzalez and L. Enrique Escalante E	. 253
Natural Rock of Ipirá Used As Soil Conditioning Cropped With Common Bean	
Itamar Pereira de Oliveira; Daniel Pettersen Custódio, Belmiro Pereira das Neves, Renato Sérgio Santos	
	. 255
Natural Rock of Ipira Effects on Common Bean ( <i>Phaseolus vulgaris</i> ) Production and Soil Acidity	
Itamar Pereira de Oliveira, Daniel Pettersen Custodio, Belmiro Pereira das Nesves, Renato Sergio R.	0.57
Santos	. 257
Lamosquarter ( <i>Chenopodium album</i> ) And Nutsedge ( <i>Cyperus</i> spp) Interference in Dry Bean Yield	250
Alberto Pedreros and Juan Tay	. 239
Highlands Of Maxiao	
L S. Padilla Pamíraz E. Martínaz Maza E. S. Osuna Caja M. A. Martínaz Camiño and I. A. Acosta	
Gallagos	261
Organic Production Evaluation of Span Bean (cv LIEL-2)	. 201
Brito $\cap$ R · Miglioranza E · Nagashima G T · Fey R · Corte A D	263
Effect of Bhizohia Inoculation on Seed Iron and Zinc	. 205
P M Kimani S Beehe and M Blair	265
Effect of Inoculation of Bean and Snan Bean	. 205
Vera Milić Miriana Vasić and Ielena Marinković	267
Field Evaluation of Bean Root Architecture	. 207
J.P. Lynch, E. Peralta, G. Abawi and E. Falconí.	.269
Mapping and Segregation Distortion Analysis In The G2333 X G19839 Recombinant Inbred Line Population Of	- /
Common Bean	
I.E. Ochoa, O.E. Checa, S.E. Beebe, J.P. Lynch, M.W. Blair	. 271
Farmers' Participation in Common Beans Breeding In South Ethiopia: The Way Forward	
Asrat Asfaw, Daniel Dauro, Gashahune Wolde and Fistum Alemayehu	. 274

The Impact of Common Bean Research in Michigan	
R.H. Bernsten, C. Ragasa, and M. Maredia	277
Brsmg Pioneiro: New Carioca Common Bean Cultivar Resistant To Anthracnose and Rust, for the Southern of	
Brazil	
Maurílio Alves Moreira, Everaldo Gonçalves de Barros, José Eustáquio de Souza Carneiro, Fábio Gelape Faleiro, Luís Cláudio de Faria, Geraldo Estevam de Souza Carneiro, Maria José Del Peloso, Trazilbo José de Paula Júnior, Ângela de Fátima Barbosa Abreu, Magno Antônio Patto Ramalho, Leonardo Cunha Melo, João Bosco dos Santos, Carlos Agustín Rava, Joaquim Geraldo Cáprio da Costa, Aloísio Sartorato, Josias	
Correa de Faria	279
José Eustáquio S. Carneiro, Lêlisângela Carvalho da Silva, Trazilbo José de Paula Júnior, Geraldo Antônio A. Araújo, Pedro Crescêncio S. Carneiro, Marcos Paiva Del Giúdice, José Ângelo N. Menezes Júnior, Marcos Antonio Delta Pamelho, Maria José Del Paleso, Ângelo de Eétima P. Abray, Maurílio A. Marairo	
and Everaldo G. de Barros	281
Release of Common Bacterial Blight Resistant Pinto Bean Germplasm Lines USPT-CBB-5 and USPT-CBB-6	. 201
Phil Miklas, James Smith and Shree Singh	283
Release of Common Bacterial Blight Resistant White Kidney Bean Germplasm Line USWK-CBB-17	
Phil Miklas, James Smith and Shree Singh	285
Release of 'Silver Cloud' White Kidney Dry Bean	
A. N. Hang, P. N. Miklas, M. J. Silbernagel and G. H. Hosfield	287
SUBJECT MATTER INDEX	288
MEMBERSHIP DIRECTORY	289
FINANCIAL STATEMENT	303

# **BIC ONLINE**

The National Agricultural Library (NAL) is working to provide on line access to Volumes 1-48 of the BIC Annual Reports, which date back to 1957 and to the 1973, 1977, 1979, and 1982 Conference Proceedings. When completed, the BIC collection will be hosted on NAL's Digital Repository Web site (<u>http://naldr.nal.usda.gov/</u>.). To further increase accessibility and visibility for the BIC publications, each article will be indexed in the AGRICOLA database. The AGRICOLA records will link to the full text article for easy access from the database. Digitizing and indexing the BIC publications is expected to be completed by August 2006. NAL will also investigate the requirements to create a routine process to index and archive future issues. Additional information regarding these activities will be forthcoming.

## THE 49th ANNUAL REPORT OF THE BEAN IMPROVEMENT COOPERATIVE

The Bean Improvement Cooperative enjoyed a stimulating meeting at the 2005 Biennial Meeting in Newark, Delaware. The meeting had approximately 100 registered participants and featured 29 oral presentations and 37 poster presentations. The quality of both the oral and poster presentations was excellent. The focus of the National Dry Bean Symposium on genetics of bean nutritional quality was very topical given the current interest in subject and the international activities directed toward the biofortification of major food crops. The meeting began with the Frazier-Zaumeyer Distinguished Lecture, entitled: '*Plant Breeding and Genomics – Staying in Contact*.' The lecture was presented by Dr. Perry Cregan, Soybean Geneticist, Research Leader of the Soybean Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD. The meeting received excellent and generous support from the following organizations: Basin Seed; Harris Moran Seed Company; Seminis Vegetable Seeds; United States Dry Bean Council; University of Delaware Vegetable Crops Program. The strong support of these organizations allowed this meeting to succeed. On behalf of the BIC, I wish to acknowledge the very substantial assistance of the organizing committee, particularly Dr. Ed Kee and Ms. Emmalea Ernest and I wish to thank the sponsors and the participants for making the meeting a success.

Two student awards were presented for both oral and poster presentations at the BIC meeting.

The outstanding student oral presentation was entitled: *Comparison of marker-assisted selection and direct selection for introgression of common bacterial blight in dry bean* presented by Robert Duncan, University of California, Davis – Robert Gilbertson, advisor.

The outstanding poster presentation was entitled: '*Dry bean transformation to enhance white mold resistance*' presented by Ann Armenia, Michigan State University – Jim Kelly, advisor.

On behalf of the BIC, I would like to recognize Chet Kurowski for his years of dedicated service on the BIC Coordinating Committee and I wish to welcome Ron Shellenberger as the newest member of the coordinating committee. I also would like to recognize Jim Beaver who served as acting chair of the BIC Genetics Committee and Tim Porch who assumed the role as chair of the Genetics Committee. I wish to welcome Carlos Urrea as a new member on the Genetics Committee.

The BIC is looking forward to celebrating its 50<sup>th</sup> anniversary in 2007. Details of the 2007 BIC meeting in Madison, WI are provided in this issue or can be found at the BIC Web page <u>www.css.msu.edu/bic</u>. Madison was the venue for the first BIC meeting and is the most appropriate to celebrate our 50<sup>th</sup> anniversary. Members are asking to check the web page periodically for upcoming events and deadlines related the BIC.

Finally, the BIC mourns the passing of a friend and colleague Dr. Shigemi Honma from Michigan State University. Shig was awarded the BIC Meritorious Service Award in 1975 and he is best known for the early work on the introgression of common blight resistance from tepary bean. The BIC recognizes him for his significant achievements to bean research.

i

#### Dr. James D. Kelly, BIC President

#### BIC COMMITTEE MEMBERSHIP - 1957 to 2006

#### **Coordinating Committee** (approximate year of appointment):

- 1957 Dean, Enzie, Frazier\* (BIC Coordinator/President), McCabe, Zaumeyer
- 1960 Anderson, Atkin, Dean, Enzie, Frazier, McCabe, Zaumeyer
- 1962 Anderson, Atkin, Dean, Frazier, Pierce, Polzak, Zaumeyer
- 1968 Anderson, **Coyne**, Dean, Jorgensen, Polzak, Zaumeyer
- 1971 Briggs, Coyne, Dean, Jorgensen, Polzak, Zaumeyer
- 1972 Burke, Coyne, Dean, Jorgensen, Kiely, Polzak, Zaumeyer
- 1974 Ballantyne, Bravo, Burke, Coyne, Dickson, Emery, Evans, Kiely, Saettler, Zaumeyer
- 1977 Ballantyne, Bliss, Coyne, Dickson, Emery, Evans, Graham, Meiners, Morris, Saettler, Zaumeyer
- 1978 Atkin, Ballantyne, Bliss, Coyne, **Dickson**, Graham, Meiners, Morris, Saettler, Sprague
- 1979 Atkin, Bliss, **Dickson**, Graham, Hagedorn, Meiners, Morris, Sprague, Wallace
- 1980 Atkin, Bliss, **Dickson**, Hagedorn, Morris, Sprague, Steadman, Temple, Wallace
- 1982 Atkin, Coyne, Dickson, Hagedorn, Sprague, Steadman, Temple, Wallace, Wyatt
- 1983 Coyne, Dickson, Hagedorn, Saettler, Silbernagel, Steadman, Temple, Wallace, Wyatt
- 1985 Coyne, **Dickson**, Mok, Saettler, Silbernagel, Steadman, Temple, Wallace, Wyatt
- 1986 Coyne, Dickson, Mok, Saettler, Schoonhoven, Schwartz, Silbernagel, Steadman, Wallace
- 1988 Brick, Dickson, Emery, Magnuson, Roos, Schwartz, Singh, Steadman, Uebersax
- 1992 Dickson, Emery, Grafton, Magnuson, Schwartz, Singh, Stavely, Steadman, Uebersax
- 1994 Antonius, Dickson, Grafton, Magnuson, Park, Schwartz, Singh, Stavely, Uebersax
- 1996 Antonius, Grafton, Park, Schwartz, Singh, Stavely, Myers, Kotch, Miklas, Riley
- 1998 Antonius, Beaver, Kelly, Kotch, Miklas, Myers, Park, Riley, Schwartz (ex officio), Singh, Vandenberg
- 2001 Antonius, Beaver, Kelly, Kotch, Miklas, Myers, Park, Riley, de Ron, Schwartz (ex officio), Vandenberg
- 2003 Beaver, Kelly, Kmiecik, Kurowski, Miklas, Myers, Park, Riley, de Ron, Schwartz (ex officio), Vandenberg
- 2006 Beaver, Kelly, Kmiecik, Miklas, Myers, Park, Riley, de Ron, Schwartz (ex officio), Shellenberger, Vandenberg

#### **Awards Committee:**

- 1971 Baggett, Briggs, Burke, Dean, Wallace
- 1973 Burke, Dean, Mauth, Zaumeyer
- 1975 Ballantyne, Frazier, Mauth
- 1977 Ballantyne, Curme, Frazier, Schuster
- 1979 Ballantyne, Schuster, Silbernagel, Temple
- 1981 Abawi, Bliss, Monis, Silbernagel
- 1983 Adams, Bliss, Burke, Dean, Morris

- 1985 Emery, Hagedorn, Sandsted, Schwartz
- 1987 Emery, Hagedorn, Sandsted
- 1989 Coyne, Silbernagel, Wallace
- 1995 Coyne, Dickson, Stavely
- 1997 Coyne, Schwartz, Stavely
- 2001 Hosfield, Magnuson, Schwartz
- 2004 Hosfield, Schwartz, Singh
- 2006 Hosfield, Schwartz, Singh

#### **Genetics Committee**

**2005:** James S. Beaver (Acting Chair), Matthew W. Blair, Paul Gepts, Phil McClean, Phil Miklas, Tim Porch, Molly Welsh (ex officio).

**2006**: Tim Porch (Chair), James S. Beaver, Matthew W. Blair, Paul Gepts, Phil McClean, Phil Miklas, Carlos Urrea, Molly Welsh (ex officio).

### **REPORT OF THE BIC GENETICS COMMITTEE**

(Minutes submitted by Tim Porch – abstracted)

The Genetic Committee met in Newark, DE on November 2, 2005 at 3:30pm. Decisions were made on six of the 10 topics discussed. Only decision items are shown below. A full version of the minutes can be found at <u>www.css.msu.edu/bic</u>

Topic: New anthracnose locus, *Co-11* Decision

1. Accepted symbol of *Co-11* for new anthracnose resistance gene from 'Michelite'. Celeste Vidigal presented allelism testing results from the manuscript "Characterization of anthracnose resistance in Michelite" that shows that the gene from 'Michelite' represents a new locus, accepted by the committee as *Co-11*.

Topic: New anthracnose allele in 'Widusa',  $Co-1^5$  Decision

2. Jim Kelly and Celeste Vidigal presented allelism testing results for 'Widusa' showing that anthracnose resistance from 'Widusa' is conferred by a new allele of  $Co-1^5$ . The committee accepted the designation of  $Co-1^5$ .

Topic: Designation of Co-7

Decision

3. Decision that the 1998 paper, "Marker-assisted dissection of the oligogenic anthracnose resistance in the common bean cultivar, G2333,"(Theor. Appl. Genet. 96:87-94) has precedence for the naming of the *Co-7* locus. A note will be sent on behalf of the Genetics Committee to the French group indicating that the 1998 paper has precedence over their later publication.

Topic: Phaseolin variants

Decision

4. Manuscript describing and naming new phaseolin variants in manuscript "Genetic diversity and origin of Slovene common bean (*Phaseolus vulgaris* L.) germplasm as revealed by AFLP markers and phaseolin analysis" will be sent to Daniel Debouck for review. His recommendations will then be sent to the Genetics Committee for final decision regarding the naming presented in the manuscript.

Topic: New membership in Genetics Committee Decision

5. Carlos Urrea was nominated and accepted as a new member of the Genetics Committee.

Topic: Chairmanship of Genetics Committee

Decision

6. Tim Porch was nominated and accepted as the new chairman of the Genetics Committee to replace Jim Beaver.

Questions or comments should be addressed to the chairman of the committee: **Dr. Tim Porch, USDA ARS SAA TARS, 2200 P.A. Campos Ave., Suite 201, Mayaguez PR 00680: ph. (787) 831-3435, ext. 254; fax. (787) 831-3386; and e-mail;** <u>maytp@ars-grin.gov</u>

Coordination of Genes and Gene Symbol Nomenclature - BIC Genetics Committee The Genetics Committee is a sub-committee of the Bean Improvement Cooperative that organizes and coordinates activities that deal with *Phaseolus* genetics. The committee has served as a clearinghouse for the assignment and use of gene symbols. The committee also maintains the **Guidelines for Gene Nomenclature (last published in the Annual Report of the Bean Improvement Cooperative in 1988, 31:16-19 and supplemented in 1999, 42:vi).** The committee also evaluates materials submitted for inclusion in the Genetics Stocks Collection of the Plant Introduction System (for those rules see 1995 Annu. Rpt. Bean Improvement Coop. 38:iv-v).

## 2005 BIC AWARD RECIPIENTS

## 2005 FRAZIER - ZAUMEYER DISTINGUISHED LECTURESHIP AWARD

## PERRY B. CREGAN

Dr. Perry Cregan, Research Geneticist, and Research Leader of Soybean Genomics and Improvement Laboratory, USDA-ARS, located at Beltsville, MD. Perry is an outstanding scientist and leader in the area of soybean genetics. Dr. Cregan was trained as a classical wheat breeder at North Dakota State University, but changed crops when he had the opportunity to join USDA-ARS program at Beltsville. Before beginning his research career Dr. Cregan spent two years in the Peace Corps in Nicaragua as a dry bean and corn extension agent. At Beltsville he continued to carry out a traditional program with soybean genetics as it related to nodulation and nitrogen fixation. In the late 1980's and early 1990's, Dr. Cregan became convinced that developing molecular markers could speed up the breeding program. After much experimentation, he started to concentrate on simple sequence repeat (SSR) DNA length polymorphisms and their relationship to quantitative trait loci (QTL). He was the first to demonstrate the heritability of SSR's in a plant species. He organized team of scientist that developed the SSR based Integrated Genetic Linkage Map of Soybean Genome that is consensus map used by essentially all public and private soybean geneticists and breeders. More recently he has targeted DNA markers for genes controlling soybean cyst nematode resistance, used SSR profiling to assist in identity protection of soybean cultivars and developed single nucleotide polymorphism (SNP) markers in more than 1,300 soybean genes. A SSR/SNP-based consensus map is currently under construction in soybean.

Dr. Cregan has authored or co-authored 114 peer reviewed publications. His leadership in the area of soybean genomics was recognized by his peers and he was elected Chair of the Cellular Biology and Molecular Genetics section of the Crop Science Society of America, Fellow of Crop Science Society of America and Fellow of the American Society of Agronomy. His technology transfer ability was also recognized when he received the Beltsville Area Technology Transfer Award for 2000; the ARS National Technology Transfer Award for 2000; and the Federal Laboratory Consortium Technology Transfer Award for 2001.

As a principal or co-principal investigator, Dr. Cregan has brought in over \$3.1 million dollars into his research program from non-ARS sources, and he has led a very diverse research program. Other examples of his leadership are the following: Associate Editor of Crop Science, Cell Biology and Molecular Genetics Division; Representation of the Crop Science Society of America on the "Scientific Forum on Plant Pesticides" (This Forum, with representatives from 12 scientific Professional societies, formulated a response from the scientific community to proposed EPA regulations of genetically engineered plants); member of the joint ARS, CSREES panel to plan and write the draft "USDA Agricultural Genome Initiative; participated in collaborative development with the AMS Plant Variety Protection Office of a legally acceptable DNA profiling protocol for use in Plant Variety Protection; representative to the joint USDA, ARS/INRA (French equivalent to ARS) meeting to develop plans for joint US/French collaborative legume genomics research. Finally, in association with the University of Maryland he has served on graduate committees of 11 students.

# A. (BERT) VANDENBERG

Dr. Bert Vandenberg, University of Saskatchewan, Saskatoon, Canada has worked on dry beans for nearly 15 years after obtaining his Ph.D. in the Department of Crop Science and Plant Ecology, Plant Breeding and Genetics. He was appointed Associate Professor and Pulse Crop Research Chair in May of 1998 and has been a full Professor at the University of Saskatchewan since March 2000.

Bert is tireless in his promotion of the Pulse Industry in Saskatchewan and in Canada. Although the lentil and pea crops are much more important to SK agriculture, Bert has also promoted dry bean as an option in appropriate growing regions. When he started working on beans in the early 1990s, they were hopelessly unadapted to our short growing season and very few producers were willing to take the risk. An aggressive crossing program coupled with a few seasons of selection with frost in August allowed him to shorten the days to maturity sufficiently to offer producers bean cultivars that would mature and yield well in our climate. CDC Pintium, a short season pinto, saved a few Manitoba (and probably North Dakota) producers last year when they couldn't get into the field to plant until mid June – far too late for their usual varieties.

Bean agronomy is also an important aspect of his research that has helped make the crop a viable option in SK. Bert and his field crew probably have the most experience growing beans in the province and he is called upon regularly for advice. Bert has been involved in the development of over 80 varieties of pulse crops, including more than 20 beans in several different market classes. He has co-authored more than 50 refereed publications, 13 specifically on bean, and has given countless presentations on pulse crop research to students, other researchers and the industry.

Bert shares his enthusiasm for dry bean research with everyone, especially his students. He encourages both his undergraduate and graduate students to actively participate in research activities outside of their thesis project by offering them opportunities to participate in day-today aspects of running the breeding program. Dr. Vandenberg has supervised or co-supervised 10 M.Sc. and 3 Ph.D. students and has served on academic committees of 12 graduate students.

Bert has served on the executive of numerous pulse crop related committees and organizations including the Bean Improvement Committee. He has been on the BIC Coordinating Committee since 1998 and was co-chair of the NAPIA-BIC meetings in Calgary in 1999. He has advised Producer Groups as well as Food Processing Groups on trends in the Pulse Industry and travels regularly to meet with importers of Canadian pulse crops to keep the breeding program in tune with current and emerging market demands.

v

# JORGE ALBERTO ACOSTA GALLEGOS

Dr. Jorge Alberto Acosta Gallegos received his B.S. degree in Plant Breeding from the Escuela Superior de Agricultura Antonio Narro, at Buenavista, Saltillo, Méx., in 1972. He earned his M.S. degree in Plant Breeding from the Universidad Autónoma Agraria Antonio Narro (UAAAN) in 1978. Dr. Acosta earned a Ph. D. degree in Plant Breeding and Genetics under the supervision of Dr. M. Wayne Adams at Michigan State University in 1988.

Dr. Acosta has achieved many professional awards and technical successes throughout his career, developing more than 21 common bean varieties in Pinto, Bayo, Flor de Mayo, Black and Flor de Junio commercial classes. He released Pinto Villa, the drought-resistant dry bean cultivar, which was grown in 170,000 hectares in 1997 in the Mexican highlands yielding 35% more than traditional pinto cultivars. Since the early 90's Pinto Villa has been sown on thousands of hectares in Mexico, is considered an important gene source for drought and multiple disease resistance, and is widely used as a parent in bean breeding programs in several countries. Dry bean varieties released by Dr. Acosta and his INIFAP's team permitted bean producers to obtain greater economical benefits, contributed to solve several social and production problems and contributed to alleviate the hunger in Mexico and the world in a sustainable and natural way.

Dr. Acosta established and reinforced several collaborative research projects between Mexican and international institutions for germplasm collection and studies in crop evolution, breeding and genetics, physiology, phenology and agronomy. He participated for more than 15 years as the Host Country Principal Investigator in Mexico with the Bean/Cowpea CRSP Collaborative Project between Michigan State University and INIFAP, from which important advances were obtained in nitrogen fixation, plant breeding, phenological plasticity, disease resistance and detecting bean adaptation mechanisms under drought. Dr. Acosta served on the Technical Committee of the CRSP for five years and as Chair in 1998. He has also collaborated with international researchers to collect more than 465 wild, weedy, landraces and bred accessions in *Phaseolus* species and contributed to better representation of bean species in germplasm banks in México and other countries. Wild relatives for common bean has been used by Dr. Acosta and other researchers to detect allele *arc* 7 of Arcelin, an insecticidal lectin-like protein present in wild bean seeds that confers resistance to bean bruchids.

Dr. Acosta has published over 170 national and international refereed and non refereed scientific and technical papers, which resulted from inter-institutional collaborative research and represents important advances in common bean knowledge. He also participated in field training and thesis direction for more than 16 undergraduate and postgraduate students from different Mexican universities. Throughout his 30 productive years of research, Dr. Acosta has constantly reinforced INIFAP's dry bean and other legume programs across production areas in the Mexican highlands and the tropics. He is a paragon because of his intimate knowledge of *Phaseolus* species and his creativity and successes on several research fronts. Dr. Acosta's enthusiasm and work ethic continues to inspire his colleagues and friends alike.

# PHILLIP N. MIKLAS

Dr. Phil Miklas, USDA-ARS, Prosser, Washington first worked on dry bean in the summer of 1982 at the Colorado State University Agricultural Research Center at Fruita, Colorado. He planted and harvested yield trials for Dr. John Keenan and inspected bean seed fields for Dr. Mark Brick in fulfillment of an externship requirement for his B.S. degree at nearby Mesa State College in Grand Junction. After completion of the Ph.D. in breeding and genetics with Dr. Ken Grafton at North Dakota State University in 1991, Phil worked as a Post-Doctoral Fellow with Dr. Jim Kelly at Michigan State University for one year. He accepted a job with the USDA-ARS in Mayaguéz, Puerto Rico in 1992 with a mandate for dry bean germplasm enhancement. In 1996, Phil replaced Dr. Matt Silbernagel at Prosser upon his retirement.

Dr. Miklas has gained national and international prominence with his outstanding work on generating resistance-linked markers and developing different marker-assisted selection strategies. He had a direct hand in developing and applying markers for *Ur-3*, *Ur-4*, *Ur-5*, and *Ur-11* genes for rust resistance, the *bgm-1* gene and a major QTL conditioning resistance to *Bean golden yellow mosaic virus*, the *bc-1*<sup>2</sup> gene for *Bean common mosaic virus* resistance, *Bct-1* gene for *Beet curly top virus* resistance, *Pse-1* gene for halo blight resistance, and QTL for resistance to white mold and common bacterial blight. Along the way new marker systems (RAPDs, SCARs, and TRAPs) were adopted for bean, and novel marker-assisted selection strategies including selective mapping of QTL, bulked segregant analysis combined with near-isogenic lines to tag genes, recombination-facilitated marker-assisted selection to overcome gene pool specificity of resistance-linked markers, multiplex PCR for three SCAR markers linked with independent QTL governing resistance to common bacterial blight, and co-dominant interpretation of dominant markers using a real-time quantitative PCR approach.

Dr. Miklas is an excellent universal collaborator with both private and public researchers nationally and internationally. He has been exceptionally productive in developing enhanced bean germplasm and his record is truly admirable by any standards. He has been a lead scientist or major collaborator to more than 100 improved bean germplasm lines and cultivars. His most recent releases include kidney and cranberry with I + bc-3 genes for resistance to BCMV, pinto USPT-CBB-1, USPT-ANT-1 and USPT-WM-1 with resistance to common bacterial blight, anthracnose, and white mold, respectively, and the dark red kidney USDK-CBB-15 with a high level of resistance to common bacterial blight. Many of the recent releases incorporated MAS as an integral component of the breeding process.

Dr. Miklas is an active member of the BIC Coordinating, Bean Genetics, Phaseolus Crop Germplasm, W-150 regional project, and WSU cultivar release committees. He currently serves as Associate Editor for Crop Science, PI for the Bean/Cowpea Breeding Project for East and Southern Africa, and is an active participant in the National Sclerotinia Initiative, Western Regional Bean Trials, National Cooperative Dry Bean Nursery, and National White Mold Nursery.

# **DAVID M. WEBSTER**

Dr. David Webster developed a long lasting obsession with all things - *Phaseolus* - in early childhood in North Carolina; his earliest memories are of a yellow blow-up beach toy, a sea dragon he named "Captain Kidney Bean". After fifty years and 25 PVP'd dry and garden bean cultivars, David still counts among life's great pleasures looking at the seed, working with the plant, and, above all else, eating beans.

At Kalamazoo College David took a Bachelors degree in chemistry, magna cum laude, in 1973. He then enrolled as a student with Professor Luis Sequeira at the University of Wisconsin. Dr. Sequeira saw the degree in chemistry and determined to make a physiological plant pathologist out of him but was broad minded enough to relent when David began to show inclinations toward breeding plants for disease resistance. It so happened that his model species was the *Phaseolus* bean. Thoughts of a real job after his Master's degree were dispelled by an opportunity to do work on his Ph.D. dissertation at CIAT on a project related to breeding for resistance to common bacterial blight. His work at CIAT established the importance of adaptation in the expression of disease resistance. It was at CIAT that he amazed a visiting Dermot Coyne with questions about how the farmers in Nebraska put the bamboo stakes in the ground when they were growing great northern beans!

David's career since graduation from Wisconsin has been all out of the same office at Filer, Idaho, owned variously since he started by Asgrow Seed, in turn owned by Upjohn, then by Seminis Vegetable Seeds, and, likely by the time of this reading, by Monsanto. It was with Asgrow under the tutelage of John Atkin that David learned how to manage a seriously big, streamlined, efficient breeding program. Although a bit of a technophobe regarding things digital, he introduced the first use of a database in the breeding programs at Filer; anything was better than long nights copying over pedigree planting and harvest lists. He has emphasized disease resistance in his breeding programs and has developed cultivars and germplasm with resistance to halo blight, bacterial brown spot, common bacterial blight, anthracnose, rust, BCMV, BYMV, BCTV, and various soil-borne fungi; not always by design but he at least knows when he's been lucky. Many of his cultivars have a blend of horticulture, quality, yield and resistance to diseases. Among the 19 dry bean cultivars developed by David are 'Etna, Avanti, Buster, Cabernet and Pink Panther'. Among the 6 garden beans are 'Opus, Gold Mine, Tema, and Lodi'. They are grown in North America and also have significant market shares in Italy, Spain, Hungary, France, and Greece where he has an extensive collaborative work.

Dr. Webster recognizes the collaborations and exchange with members of the BIC as a key ingredient to any success he's enjoyed, as well as the opportunity to contribute to the success of his colleagues. Although training students has not been a major part of his career, he has happily hosted local and foreign students and visitors. He served as chairman of the *Phaseolus* crop advisory committee from 1989 to 1991.

## IN MEMORY OF SHIGEMI HONMA

Shigemi Honma, Emeritus Professor of Horticulture at Michigan State University, died in East Lansing, Mich. on May 30, 2005. Prof. Honma was born February 14, 1920 in Haina, Hawaii. He served for 3 ½ years with the famed 442<sup>nd</sup> Regimental Combat Team of Nisei soldiers in World War II, and was awarded the Bronze Star and the Purple Heart. He earned a B.A. at Cornell University in 1949, and a Ph.D. from the University of Minnesota in 1953. He then took a position as assistant horticulturist at the University of Nebraska, where he made the first successful interspecific hybrid between common bean (*Phaseolus vulgaris*) and tepary bean (*P. acutifolius*). This permitted the transfer of the tepary bean's resistance to common bacterial blight to the hybrid. The work was published in the *Journal of Heredity* 47: 217 (1956). The paper is one of the most cited references in the bean literature, and won Dr. Honma the Meritorious Service Award from the Bean Improvement Cooperative in 1975. The hybrid was subsequently used by Dr. Dermot Coyne of Nebraska and other breeders to incorporate this resistance into *P. vulgaris*. This pioneering work encouraged others to explore the potential of interspecific hybridization in bean improvement.

Dr. Honma moved to Michigan State University as an assistant professor in 1955, and was named full professor in 1966. He retired in 1986 after a distinguished career as a breeder of vegetable crops, during which he released four cauliflower, two celery, three lettuce, nine pepper, and six tomato cultivars. Much of his effort was directed toward improving resistance to fungal, bacterial and viral diseases. Two of the cauliflower cultivars, Self-Blanch and Stovepipe, were designed to reduce the labor required to tie up the leaves to shade the head and avoid greening. He co-authored, with Prof. Sylvan Wittwer, the book *Greenhouse Tomatoes - Guidelines for Successful Production*, as well as over 100 scientific and popular articles on vegetable cultivar improvement.

Dr. Honma received invitations from both U.S. and international institutions to present lectures on his work. The Department of Horticulture at the University of Minnesota invited him to present the Distinguished Alumni Lecture there in April 1981. During 1981-82, he represented the USDA and Michigan State University in establishing cooperative exchanges of scientific information with Bulgarian scientists, and was invited to lecture on vegetables for the Royal Project in Thailand. Dr. Honma is survived by his wife, Isao, and two children Alan and Valerie.

## 2007 BIENNIAL BIC/USDBC MEETING

The 2007 BIC meeting will take place in Madison, Wisconsin. The tentative date under consideration for the BIC, United States Dry Bean Council (USDBC) and related meetings is Monday Oct 29 - Wednesday Oct 31, 2007. The North American Pulse Improvement Association (NAPIA) meeting date being explored is Thursday and Friday Nov. 1st & 2nd. Several venues for the meeting are being considered. As this is the 50th Anniversary of the BIC we are looking for any suggestions to mark this event in a special way. Please take some time to set aside some of those photos, memories, etc that might be shared. Further information will be forthcoming through the BIC web site (http://www.css.msu.edu/bic , the 2006 annual report, and individual mailings to local committee members. For further information contact Jim Nienhuis nienhuis@calshp.cals.wisc.edu or Ken Kmiecik ken.kmiecik@seminis.com



# MEMBERS ONLY ACCESS TO 2006 BEAN IMPROVEMENT COOPERATIVE REPORT

2006 BIC Invoice (US \$) and Membership Information

2006 Dues (Volume 49):	BOOK RATE	CD RATE
	First Class or	r Air Mail only
United States	US \$15.00	US \$15.00
Canada	US \$20.00	US \$15.00
Mexico, Central & South America	US \$25.00	US \$15.00
Europe, Africa, Asia, Australia	US \$25.00	US \$15.00

**Back Issues:** Current members may purchase extra copies of Volumes 45 (2002), 46 (2003), 47 (2004) and 48 (2005) at \$7.00 per copy to the United States and Canada; \$10.00 per copy to Europe, Africa, Asia, Australia and Mexico, Central & South America. [BIC ISSN # = 0084-7747]

# INVOICE

## 2006 BEAN IMPROVEMENT COOPERATIVE MEMBERSHIP

Make checks payable to the "BEAN IMPROVEMENT COOPERATIVE", and mail to: Dr. James D. Kelly, Department of Crop & Soil Sciences, Michigan State University, East Lansing, Michigan 48824 USA.

Telephone: 517-355-0271 x1181 // FAX: 517-353-3955 // Email: kellyj@msu.edu

Name:				
Tele #:	Fax #:	E-n	nail:	
Address:				
Total Due for 2006: \$	Indicate Choice: Book	or <b>CD</b>	or <b>Both</b>	\$15.00 extra]
Check or money order/number:		Payment enclosed:		