

CURRICULUM VITAE

GERMAN ALBERTO LLANO RODRIGUEZ

PERSONAL INFORMATION

Place and date of birth: Bogotá, Colombia, December 20, 1958

Marital status: Married

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EDUCATION

1998 to 2003. M.Sc. Plant Breeding. Graduating on May, 2003.

Thesis: Identification of gene analogs for resistance to cassava (*Manihot esculenta* Crantz) diseases, and their relationship to resistance to three *Phytophthora* species

1976 to 1982, Bachelor Agronomist Engineer

WORKING EXPERIENCE

From 1997 : Professional Specialist, Cassava Pathology Program.
International Center for Tropical Agriculture. Cali, Colombia.

1996 - 1997 : Research Assistant, Andean Bean Breeding Program.
International Center for Tropical Agriculture. Cali, Colombia.

1990 - 1996: Research Assistant, Bean Physiology Program.
International Center for Tropical Agriculture. Cali, Colombia.

1987 - 1990: Regional Director Abonos Colombianos, ABOCOL. Ibagué, Colombia.

1986 - 1987: Assistant. Formulation and supervision of agricultural development projects in indigenous communities. Centro de Cooperación al Indígena, CECOIN - INTERAMERICAN FOUNDATION. Bogotá, Colombia.

1982 - 1986: Research Assistant. Bean Pathology Program.
International Center for Tropical Agriculture. Cali, Colombia.

COURSES AND SEMINARS ATTENDED

Colombian Association of Phytopathology (ASCOLFI). VI Congress. Santa Marta, Colombia. May 30 to June 2, 1984.

Project planning by objectives course. CIAT, Palmira, Colombia. June, 1994.

Training in Iowa State University, under supervision of Dr. Thomas Harrington. Morphological description of *Ceratocystis* spp., fungi DNA extraction, PCR using degenerated primers, PCR purifying for DNA sequencing, gene cloning. Ames, IA. USA. July 5 to August 26, 1999.

Training in Kansas State University, under direction of Dr. Jan Leach. RFLP, Southern Blot and Hybridization. Manhattan, KS, USA. August, 1 to 7, 1999.

Course: The nature of disease resistance, mechanisms of pathogenesis and signal transduction in plants. Dr. David B. Collinge, Associated Professor. Royal Veterinary and Agricultural University (Denmark). CIAT, Cali, Colombia. October 16 to 20, 2001.
XXIII Congress of Colombian Association of Phytopathology (ASCOLFI) Bogotá, July 3 – 6, 2002.

XXIV Congress of Colombian Association of Phytopathology (ASCOLFI) Armenia, Jun, 25 – 27, 2003.

XXV Congress of Colombian Association of Phytopathology (ASCOLFI) Cali, August 11 – 13, 2004.

IX Congress of Colombian Association of Plant Breeding and Crop Production. Corpoica. Palmira. May 11-13, 2005.

II International Seminar on Production, Commercialization and Industrialization of Plantain. Manizales Aug 28 – Sep 2, 2005.

COURSES AND SEMINARS PRESENTED

Induced resistance to bean anthracnose with *Colletotrichum lindemuthianum* isolates. Presented at VII Congress of Colombian Association of Phytopathology (ASCOLFI) Paipa, Colombia. June 1, 1986.

Diallel analysis for andean-bean yield under drought and raining conditions Poster presented at Bean breeding for XXI century workshop. Basis for a strategy to Latin America. CIAT, Cali, Colombia. October 23 – November 1, 1996.

Evaluation for cassava resistance to twelve *Xanthomonas axonopodis* pv. *manihotis* strains. Presented at XX Congress of ASCOLFI. Manizales, Colombia., July 2, 1999.

Participatory research for cassava rot in indigenous communities from Mitú (Colombia). International workshop on participatory breeding in Latin America and Caribbean: Experiences exchange. Quito, Ecuador. Aug 31, 1999.

Control of powdery mildew in rose crops by application of compost lixiviate from plantain. Poster presented at XV agro industrial sample. Universidad La Gran Colombia. Armenia, Colombia. November 1 to 3, 2001.

Evaluation of two resistance inducers for Bud Rot control in oil palm *Elaeis guineensis* in Colombian Eastern Plains. Presented at XXIII Congress of ASCOLFI. Bogotá, Colombia. July 5, 2002. P. 98.

Development of ecological practices to manage *Phytophthora* root rot of cassava (*Manihot esculenta*). E. Alvarez, G.A. Llano, M.C. Feris, M.L. Hernández and S.M. Rodríguez. Presented at XXIII Congress of ASCOLFI. Bogotá, July 3 - 6, 2002. P.96.

Control of bud rot in oil palm, *Elaeis guineensis*, using resistance inducers. E. Alvarez, G.A. Llano, M.C. Feris, M.L. Hernández and S.M. Rodríguez. Poster presented at 8th International Congress of Plant Pathology (ICPP2003), Christchurch, New Zealand, 2 - 7 February 2003. Vol 2: 179.

Detección de marcadores microsatélites asociados con la resistencia al Añublo Bacterial de la yuca (*Manihot esculenta* Crantz) en Colombia. P. X. Hurtado, E. Alvarez, M. Fregene y G. A. Llano. Proceedings XXIV Congress of ASCOLFI. Armenia, Junio 25 – 27, 2003. P 25.

Detecting the phytoplasm-frogskin disease association in cassava (*Manihot esculenta* Crantz) in Colombia. E. Alvarez, J. F. Mejía, J. B. Loke, L. Hernández, and G. A. Llano. Phytopathology 93 (6): S4. Poster presented at APS annual meeting August 9-13, 2003. Charlotte, NC, USA.

Detecting SSR markers associated with resistance to cassava bacterial blight (CBB) in Colombia. E. Alvarez, P. X. Hurtado, M. Fregene. and G. A. Llano. Phytopathology 93 (6): S4. Poster presented at APS annual meeting August 9-13, 2003. Charlotte, NC, USA.

Identification of resistance-gene analogs in cassava (*Manihot esculenta*), and their relationship to three *Phytophthora* species. G. A. Llano, E. Alvarez, M. Fregene and J. E. Muñoz. Poster presented at Sixth International Scientific Meeting of the Cassava Biotechnology Network. March 8-14, 2004. Cali, Colombia. P.121.

QTL mapping for resistance to root rot caused by *Phytophthora tropicalis* in cassava. J. B. Loke, E. Alvarez, M. Fregene, J. Marín, S. Rivera, G. A. Llano, J. F. Mejía. Poster presented at Sixth International Scientific Meeting of the Cassava Biotechnology Network. March 8-14, 2004. Cali, Colombia. P.158.

Efecto de prácticas ecológicas sobre la población de *Ralstonia solanacearum* Smith, causante de Moko de plátano. A. Arenas; D. López; G. Llano; E. Alvarez y J. Loke. Presented at XXV Congress of ASCOLFI. Cali, Aug 11 - 13, 2004. P. 13.

Detección de un fitoplasma asociado a cuero de sapo de yuca (*Manihot esculenta* Crantz) en Colombia. E. Alvarez; J. F. Mejía; J. Loke y G. Llano. Presented at XXV Congress of ASCOLFI. Cali, Aug 11 - 13, 2004. P. 27.

Identificación de genes análogos de resistencia y QTLs asociados con resistencia a enfermedades de yuca. Llano, G.A.; Alvarez, E. ; Loke, J.B. ; Fregene, M. ; Muñoz, J.E. Presented at IX Congress of Colombian Association of Plant Breeding and Crop Production. Palmira. May 11 – 13, 2005. P. 137.

Avances en la investigación para el manejo de Moko de plátano. National Seminar Platin Pest and Diseases. Armenia. July 18-19, 2005.

PUBLICATIONS

G.A. Llano y H. Restrepo. Efecto de dos rocas fosfóricas aciduladas 20% con H₃PO₄ sobre *Stylosanthes capitata*, establecido en un Oxisol de los Llanos Orientales de Colombia. Acta Agronómica 34 (1): 39 - 46. 1984.

G.A. Llano and M.A. Pastor-Corrales. Disease resistance mechanisms in beans to the anthracnose pathogen. Phytopathology 75 (10): 1176. 1985.

J.W. White, C. Montes and G.A. Llano. Comparisons of cultivar differences in root growth measured under field conditions, containers and hydroponic culture. Annual Report Bean Improvement Cooperative 35: 31 - 32. 1992.

E. Alvarez, G.A. Llano y S. Cadena. Evaluación de resistencia de yuca a doce cepas de *Xanthomonas axonopodis* pv. *manihotis*. Ascolfi Informa 25 (6): 57 – 59. 1999.

G.A. Llano, E. Alvarez, J. Loke, R. Madriñán, J.A. Restrepo y J.R. Mora. Evaluación de la adaptación de variedades de yuca con resistencia a *Phytophthora* spp. mediante investigación participativa en comunidades indígenas de Mitú (Vaupés, Colombia). Acta Agronómica Vol 51 (1/2): 31 – 39. 2002.

E. Alvarez y G.A. Llano. Enfermedades del cultivo de la yuca y métodos de control. In: Cultivo de la yuca en el tercer milenio. Sistemas modernos de producción, procesamiento utilización y comercialización. Edited by B. Ospina and H. Ceballos. P. 131 – 147. CIAT, Cali, 2002.

E. Alvarez y G.A. Llano. Guía práctica para el manejo de las enfermedades, las plagas y las deficiencias nutricionales de la yuca. Chapter in pocketbook. P. 19 – 40. CIAT, Cali, 2002.

E. Alvarez, J. Loke, S. Rivera y G. A. Llano. Genética de la resistencia a pudrición causada por *Phytophthora tropicalis* en dos poblaciones segregantes de yuca (*Manihot esculenta* Crantz). Revista Fitopatología Colombiana Vol 26 (2): 61 - 66. 2003.

G.A. Llano, E. Alvarez, J.E. Muñoz and, M. Fregene. Identificación de genes análogos de resistencia a enfermedades en yuca (*Manihot esculenta* Crantz), y su relación con la resistencia a tres especies de *Phytophthora*. Acta Agronómica Vol 53 (1/2): 15-24. 2004.

JB Loke; E Alvarez; FA Vallejo; J Marín; M Fregene; S Rivera; GA Llano. Análisis de QTLs de la resistencia a pudrición de raíz causada por *Phytophthora tropicalis* en una población segregante de yuca (*Manihot esculenta* Crantz). Acta Agronómica. Vol 53 (3/4): 35-41. 2004.

E. Alvarez, G. Llano. Integración del conocimiento científico con el conocimiento indígena. Mitú, Vaupés, Colombia. <http://www.ciat.cgiar.org/iir/mitu.htm>. 2005.

Hurtado, P.X., Alvarez, E., Fregene, M., Llano, G.A. Detección de marcadores microsatélites asociados con la resistencia a *Xanthomonas axonopodis* pv. *manihotis* en una familia de yuca (bc1). Fitopatol. Colombiana Vol. 28 (1/2) 2005.

Arenas, A., López, D., Alvarez, E., Llano, G., Loke, J.B. Efecto de Prácticas Ecológicas Sobre la Población de *Ralstonia Solanacearum* Smith, Causante de Moko de Plátano. Fitopatol. Colombiana Vol. 28 (1/2) 2005.

Alvarez, E., Llano, G., Loke, J.B. y Mejía, J.F.. Applying Biotechnology tools to Control Plant Diseases. Fitopatol. Colombiana Vol. 28 (1/2). 2005

Gómez, E.A., Alvarez, E. y Llano, G. Identificación y caracterización de cepas de *Ralstonia solanacearum* raza 2, agente causante del Moko de plátano en Colombia. Fitopatol. Colombiana Vol. 28 (1/2) 2005.

Alvarez, E., Ospina, C.A., Mejía, J.F., Llano, G.A. Caracterización genética morfológica y patogénica de *Colletotrichum gloeosporioides*, agente causante de la antracnosis en guanábana (*Annona muricata*) en las zonas productoras del Valle del Cauca. Fitopatol. Colombiana Vol. 28 (1/2) 2005.

Calle F; Pérez JC; Gaitán W; Morante N; Ceballos H; Llano GA; Alvarez E. Diallel inheritance of relevant traits in cassava (*Manihot esculenta* Crantz) adapted to acid-soil savannas. *Euphytica* 143: 123-133. 2005.

AWARDS

Rafael Obregón National award on Plant Pathology Professional category for the work “Detection of microsatellite markers associated with resistance to cassava bacterial blight” . June, 2004.

Award recognition to a best project in extension from Universidad Nacional of Colombia for the research work Evaluation of cassava genotypes adaptation. Sep, 2000.

REFERENCES

Elizabeth Alvarez, Ph. D. Phytopathologist. Cassava Program. CIAT. Tel. 57-2-4450000 AA 6713 Cali, Colombia, S.A. ealvarez@cgiar.org

Martín Fregene, Ph. D. Geneticist. Cassava Program. CIAT. Tel. 57-2-4450000 AA 6713 Cali, Colombia, S.A. mfregene@cgiar.org

Stephen Beebe, Ph. D. Plant Breeder. Bean Program. CIAT. Tel. 57-2-4450000 AA 6713 Cali. Colombia, S.A. sbeebe@cgiar.org