



World Cowpea Conference 2010

Theme: “Improving livelihoods in the cowpea value chain through advancement in science”

**26 September – 1 October 2010
Framissima Palm Beach Hotel
Saly, Senegal**

The [5th World Cowpea Research Conference](#) was hosted by IITA and its partners in Dakar, Senegal from 27 September to 1 October 2010 to discuss threats to the survival and farm production of black eyed peas—one of Africa's oldest and most resilient and nutritious crops.

From its humble origins in the drier regions of West Africa, where farmers have grown the black-eyed pea (also known as cowpea) for 5000 years, it was carried to the United States in the bellies of slave ships, and then introduced to the world through international trade. **Today, black-eyed peas are a global commodity, grown in nearly every region of the world.** Sub-Saharan Africa accounts for about 70 percent of total world production.

“Black-eyed peas have been largely neglected despite their multiple benefits and the fact that developing new, high-yield varieties could boost farm incomes by as much as 50 percent while improving household nutrition.” --Hartmann, director general of the International Institute of Tropical Agriculture (IITA), which is co-hosting the World Cowpea Research Conference with the [Government of Senegal](#), the [Dry Grain Pulses Collaborative Research Support Program](#), and [Purdue University](#). "Today we see scientists racing against time to rescue and conserve cowpea varieties that can help farmers deal with pests and diseases and adapt to changing environments.”

Among the issues discussed:

- Rescuing cowpea from extinction: Progress on global efforts to rescue the cowpea gene pool.
- "Designer" peas: State-of-the-art genetic research to develop "designer," insect-resistant black-eyed peas.
- Cashing in on cowpea: Improved varieties offer a pathway out of poverty.
- Space food: NASA's efforts to use cowpea as food for astronauts because of its exceptional nutritional value and potential for cultivation in space station greenhouses.
- Cowpea genemap: Update work to produce a new genetic map for cowpea which has used methods developed through the Human Genome Project to accelerate efforts to breed improved varieties.

- Biological controls for cowpea pests: Utilizing genomics tools to develop and deploy biocontrol agents to manage insect pest populations.
- Green-er farming: How farmers are using cowpea as "green" fertilizers to revitalize degraded soils, and use crop waste as energy-rich feed for cows, sheep, and goats.
- Postharvest - Reducing insect damage to cowpea in storage is a cost-effective way to increase the food supply. Millions of African farmers are using hermetic storage without insecticides to safely store cowpea.
- Cowpea-based food entrepreneurship: Cowpea-based street foods provide income for thousands of women in West and Central Africa. New food technologies and better business methods have the potential to up their profits.

In years to come, scientists believe that black-eyed peas could lead the way in Africa's effort to fight malnutrition among its growing population and confront the effects of climate change. The shifting weather patterns threatening to desiccate farmer's fields across the continent put a spotlight on **crops like the black-eyed pea that are rich in vitamins and protein and do well in hot, dry conditions**. Black-eyed peas have the added benefit of releasing nitrogen that revives depleted soils.

For more information, please visit the 5th International Cowpea Research Conference

Web site at: <http://cowpea2010.iita.org/>, or contact:

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About IITA (www.iita.org)

Africa has complex problems that plague agriculture and people's lives. We develop agricultural solutions with our partners to tackle hunger and poverty. Our award-winning research for development (R4D) is based on focused, authoritative thinking anchored on the development needs of sub-Saharan Africa. We work with partners in Africa and beyond to reduce producer and consumer risks, enhance crop quality and productivity, and generate wealth from agriculture. IITA is an international nonprofit R4D organization established in 1967, governed by a Board of Trustees, and supported primarily by the CGIAR.

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Sunday, 26 September - Arrivals and registration at Palm Beach Hotel, Saly

Monday, 27 September – Registration and opening ceremony

PROGRAM: Opening Ceremony

10.00 – 10.10 a.m.	Introductions - Master of Ceremony: Mbene Faye
10.10 – 10:25 a.m.	Welcome address - Macoumba Diouf, ISRA
10:25 – 11:00 a.m.	Setting the tone - Lakshmi Menon, IITA
11.00 – 11.05 a.m.	Goodwill message - Larry Murdock, Purdue University
11.05 – 11.10 a.m.	Goodwill message - Irv Widders, CRSP
11.10 – 11:25 a.m.	Remarks and introduction of guest of honor: The Government of Senegal - Honourable Minister for Agriculture
11.25 a.m. – 11.40 a.m.	Opening remarks and declaration of conference open – First Lady of Senegal Madame Viviane Wade
11:40 – 11:45 a.m.	Vote of thanks - David Chikoye – IITA
11.45 – 11.55 a.m.	<i>Group photo</i>
Simultaneous events	
<i>Chairman:</i> Steve Misari	
<i>Rapportuers:</i> H. Ajeigbe and H. Tefera	
11.55 a.m. – 12.55 p.m.	Plenary: “Cowpeas: A solution to global challenges” – Irv Widders, Michigan State University
11.55 a.m. – 12.25 p.m.	Media conference
12.55 p.m. – 2.00 p.m.	<i>Lunch</i>

Scientific sessions

A. Genetics and Breeding

Chairman – H.D. Mignouna

Rapporteurs: H. Ajeigbe and J. Tignegre

- 14.00 – 14.40 Breeding diverse, durable and diet-plus cowpea varieties for increased production, enhanced nutrition and health in the 21st Century.
B.B. Singh
- 14.40 – 15.00 Genus *Vigna* and cowpea (*Vigna unguiculata* (L.) Walp.) taxonomy
R. S. Pasquet and S. Padulosi
- 15.00 – 15.20 Sharing the responsibilities of cowpea and wild relative long-term conservation
D. Dumet, C. Fatokun, R. Pasquet, J. Ehlers, L. Kumar, S. Hearne, K. Sonder, S. Aladele, O. Boukar, R. Vodouhe, and L. Garino
- 15.20 – 15.40 Evaluation of cowpea germplasm lines for minerals and protein content in grains.
O. Boukar, F. Massawe, S. Muranaka, J. Franco, B. Maziya-Dixon, and C. Fatokun.
- 15.40 – 16.00 Inheritance of testa texture of cowpea (*Vigna unguiculata* [L.] Walp) and genotypic characterization of some cowpea cultivars
T.B.J. Batien, I. Drabo, J.D. Zongo, and J.T. Ouedraogo
- 16.00 – 16.30 Coffee/Tea
- 16.30 – 16.50 Modern Approaches for Cowpea Breeding: How high-throughput genotyping and a high-density map changes everything
J. D. Ehlers, N. Diop, S.J. Hearne, D. Dumet, S. Wanamaker, R. Chiulele, A. David, P. A. Roberts, and T. J. Close
- 16.50 – 17.10 Combining Striga and aphid resistance in cowpea
I.D.K. Atokple and F. Kusi
- 17.10 – 17.30 Selection of cowpea genotypes via farmers' participatory varietal selection activity in Niger
S. Muranaka, O. Boukar, A. Abdulaye, and C. Fatokun
- 17.30 – 17.50 Cowpea breeding in the USA: New varieties and improved germplasm
R. Fery, J. D. Ehlers, and P. A. Roberts.
- 17.50 – 18.15 General discussion
- 18.15 – 18.20 Chairman's closing remarks.

Genomics tools

Chairman: B.B. Singh

Rapporteurs: Ndeye Diop and Lucky Omoigui

- 14.00 – 14.40 New Cowpea IT97K-499-35 Genome Resources: 17X BAC library, 10X physical map anchored to a 1000-SNP genetic map, genome-wide sequences coupled to the genetic and physical maps.
T. J. Close, M. C. Luo, G. D. May, S. A. Jackson, Y. Ma, J. Wu, F. M. You, Y. Q. Gu, N. Diop, S. Wanamaker, R. Fenton, S. Bozdag, S. Lonardi, P. A. Roberts, J. D. Ehlers
- 14.40 – 15.00 Application of FTA® technology for sampling, and recovery of DNA for molecular characterization of cowpea breeding lines for Striga resistance
L. O. Omoigui, M.F. Ishiyaku, O. Boukar, B. Gowda, and M.P. Timko
- 15.00 – 15.20 Identification and characterization of MicroRNAs in Cowpea
E. Barrera-Figueroa, L. Gao, N.N. Diop, Z. Wu, J.D. Ehlers, P.A. Roberts, T. J. Close, J.K. Zhu, and R. Liu.
- 15.20 – 15.40 Optimal units of selection – how many plants are representative of diversity in collections of cowpea landrace accessions?
S. Hearne, J. Franco-Duran, and E. Magembe
- 15.40 – 16.00 Molecular characterization of various cowpeas (*Vigna unguiculata* (L.) Walpers) varieties and their microbial symbiosis: Seeking for elites
E. O. Tienebo, M. C. Gueye, A. Manga, T. Diop, N. Cisse
- 16.00 – 16.30 Coffee/Tea
- 16.30 – 16.50 An improved consensus genetic linkage map of cowpea [*Vigna unguiculata* (L) Walp.]
N. Diop, J. D. Ehlers, S. Wanamaker, W. Muchero, C. Fatokun, G. Li, P. A. Roberts, and T. J. Close
- 16.50 – 17.10 Genetic and physical mapping of resistance to biotic stresses in cowpea
P. A. Roberts, W. Muchero, N. Cisse, I. Drabo, C. Fatokun, O. Boukar, E. Agbicodo, M. Pottorff1, N. Diop, S. Wanamaker, T. J. Close, and J. D. Ehlers
- 17.10 – 17.30 Genetic mapping, physical location and synteny of *Fusarium oxysporum* f.sp. tracheiphilum race 3 resistance locus in cowpea
M. O. Pottorff , J. D. Ehlers, T. J. Close, and P. A. Roberts
- 17.30 – 17.50 Genomic distribution of loci exhibiting positive pleiotropic effects on delayed senescence, grain yield and biomass accumulation under drought stress in cowpea
W. Muchero, J. D. Ehlers, I. Drabo, S. Marunaka, N. Cisse, N.N. Diop, S. Wanamaker, T. J. Close, and P. A. Roberts
- 17.50 – 18.25 General discussion

18.25 – 18.30 Chairman's closing remarks

Posters:

Wednesday, 29 September

C. Cowpea in the systems

Chairman: Irv Widders

Rapportuers: Steve Kilani and Hamidou Falalou

- 8.30 – 9.10 Cowpea in Evolving Livestock Systems
E. E. Grings and S. Tarawali
- 9.10 – 9.25 Evaluation of cowpea lines for adaptation to different agro-ecologies of Mozambique
S. Boahen and D. Chikoye
- 9.25 – 9.40 Performances technologiques de quelques variétés améliorée de niébé du Niger
R. Seydou, S. Kaka, M. Adamou, A. Toudou
- 9.40 – 9.55 Improvement in grain and fodder yields of cowpea genotypes representing four decades of breeding in the Nigerian Sudan savannas
A.Y. Kamara, H. Ajeigbe, S.U. Ewansiha, O. Boukar, R. Okechukwu, H. Tefera, and L.O. Omoigui
- 9.55 – 10.10 Improving the productivities of cowpea-cereal cropping systems in the dry savannas of West Africa through dissemination of improved cowpea cropping systems
H.A. Ajeigbe, B.B. Singh, A. Y. Kamara, D. Chikoye, A.K. Saidou, and R.S. Adamu
- 10.10 – 10.25 Improving the productivity of cowpea in the savannas of northeast Nigeria through participatory evaluation and dissemination of improved varieties
A. Y. Kamara, L.O. Omoigui, and S. U. Ewansiha
- 10.25 – 10.55 Coffee/Tea
- 10.55 – 11.10 The Use of Cowpea for Increase Crop-livestock Integration and Improved Productivities in the Dry savannas of West Africa
Ajeigbe, H.A., A. Musa, B.B. Singh, and S. A. Tarawali
- 11.10 – 11.25 Increasing the productivity of cowpea with rhizobium inoculants
G.R. Xavier, L.M.V. Martins, R.M.M. Alcantra, C.E.R. do Santos, N.G. Rumjanek, R.M.R. Gaulter, and R.M. Boddey
- 11.25 – 11.40 Effect of phosphorus on survival, nodulation and yield of cowpea (*Vigna unguiculata*) varieties across a soil fertility degradation gradient in Western Kenya
S.N. Odundo, O. J. Ojiem, J.R. Okalebo, C.O. Othieno, J.G. Lauren, and B.A. Medvecky

- 11.40 – 11.55 Effect of drought stress on physiological traits of cowpea (*Vigna unguiculata* L. Walp.): tolerant varieties and relevant traits for breeding programs
H. Falalou and B. Serge
- 11.55 – 12.10 Seed health constrains up scaling informal seed systems
P.C. Biemond, M. Ayodele, O. Oguntade, A.Y. Kamara, T.J. Stomph, and P.C. Struik
- 12.10 – 12.25 Building capacity for community cowpea seed production and delivery in Tanzania: Experiences from pilot villages in Iringa district
K.P. Sibuga, D.P. Mamiro, E.A. Lazaro, F.E. Mwakitwange, D. Philip, and D. Chilosa
- 12.25 – 12.55 General discussion
- 12.55 – 13.00 Chairman’s closing remarks
- 13.00 – 14.00 Lunch

D. Biotic stresses

Chairman: Victor Manyong

Rapporteurs: O.O. Odedara and Malick Ba

- 14.00 – 14.40 Efforts de gestion des contraintes biotiques au Burkina Faso et en Afrique de l’Ouest
Dabiré C., Tamò M. Ouédraogo T.J., Tignegré J. B., Ba M., Hammond W. et Coulibaly O.
- 14.40 – 15.00 Managing the risk of introducing seed-transmitted viruses associated with import of cowpea germplasm into India
V. Celia Chalam, D.B. Parakh, R.K. Khetarpal, A.K. Maurya, and Promil Kapoor
- 15.00 – 15.20 Potential effect of phytopesticide (rice husk extract) on root and soil-borne fungi pathogens of cowpea isolated in the Northern Guinea Savannah of Nigeria
Killani, A. Steven, Abaidoo, Robert C. and Akintokun, A. Kofoworola
- 15.20 – 15.40 Controlling virus diseases of cowpea in sub-Saharan Africa: status and prospects
P. Lava Kumar, C.A. Fatokun, D. Dument, O. Boukar and S. Boahen
- 15.40 – 16.00 Genomics of the legume pod borer *Maruca vitrata* Fabricius (Lepidoptera: Crambidae)
Venu M. Margam, Brad S. Coates, Tolulope Agunbiade, Weilin Sun, Malick N. Ba, Clementine L. Binso-Dabire, Ibrahim Baoua, Mohammad F. Ishiyaku, Richard L. Hellmich, Fernando G. Covas, Srinivasan Ramasamy, Joel Armstrong, Larry L. Murdock, and Barry R. Pittendrigh
- 16.00 – 16.30 Coffee/Tea

- 16.30 – 16.50 Migration and mating status of the legume pod borer, *Maruca vitrata* in Northern Nigeria with reference to the efficacy of synthetic sex pheromone traps
T. Adati, M. Tamò, and M.C.A. Downham
- 16.50 – 17.10 IPM-omics: how omics is reshaping the way we do integrated pest management and implications for cowpea in West Africa
Barry Pittendrigh, Aaron Gassmann, Venu Margam, Brad Coates, Malick Ba, Clementine Dabire, Ibrahim Baoua, and Manuele Tamò
- 17.10 – 17.30 Biological control: a major component for the long-term cowpea pest management strategy
Manuele Tamò, Srinivasan Ramasamy, Cyriaque Agboton, Clémentine Dabiré, Ibrahim Baoua, Malick Ba, Haruna Braimah, and Barry R. Pittendrigh
- 17.30 – 17.50 Plant protection deployment strategies for extension services and cowpea farmers
Julia Bello Bravo, Francisco Seufferheld, Malick N. Ba, Clementine L. Binso-Dabire, Ibrahim Baoua, Manuele Tamò, and Barry Pittendrigh
- 17.50 – 18.25 General discussion
- 18.25 – 18.30 Chairman's closing remarks
- 19.30 - **Conference Dinner: Sponsored by AATF**

Thursday, 30 September

E. Postharvest/utilization

Chairman: Kallunde Sibuga

Rapporteurs: Casmir Aitededji and Shehu Musa

- 8.30 – 9.10 Cowpea Grain Storage: Old Problem, New Solutions
I. Baoua
- 9.10 – 9.30 Hard-to-cook (HTC) phenomena in cowpeas: Causes, mechanisms, prevention or alleviation
A. Minnaar
- 9.30 – 9.50 Association of seed coat color to polyphenols, tannins and antioxidant activity in *Vigna unguiculata* varieties
Archana J. Gawde, B.B. Singh, Jeff Ehlers, and Joseph Awika
- 9.50 – 10.10 Value-Added Processing of Cowpeas in West Africa: Cowpea-Based Street Food Enterprises in Niger and Ghana.
Miriam Otoo, Joan Fulton, Germaine Ibro and James Lowenberg-DeBoer,
- 10.10 – 10.40 Coffee/Tea

10.40 – 11.10	Purdue Improved Cowpea Storage (PICS): What it is and how it works Larry Murdock, Venu Margam, Ibrahim Baoua, Susan Balfe, Lisa Mauer, and Richard Shade
11.10 – 11.30	Expérience originale et efficace de diffusion de la technologie PICS au Burkina Faso Clementine L. Dabiré-Binso, Antoine Sanon, Malick N. Ba, Dieudonné Baributsa, James Lowenberg-DeBoer, et Larry Murdock
11.30 – 11.50	Evaluation de la réutilisation des sacs PICS et de leur usage pour la conservation d'autres denrées dans les zones de diffusion de la technologie du triple ensachage au Burkina Faso Antoine Sanon, Clémentine Loule Dabiré/Binso, Niango Ba Malick, Dieudonné Baritbutsa, et James Lowenberg-DeBoer, Larry Murdock
11.50 – 12.10	Adoption of PICS bags in the Northern Nigeria: a case study of Jigawa, Kano and Katsina States T. Abdoulaye, Bamikole Ayedun, S.A Musa, J. Lowenberg-Deboer, D. Baributsa
12.10 – 12.30	Cell phone video for communicating hermetic cowpea storage skills Dieudonné Baributsa, Jess Lowenberg-DeBoer and Abdou Kamarou Djibo
12.30 – 12.55	General discussion
12.55 – 13.00	Chairman's closing remarks
13.00 – 14.00	Lunch

F. Socioeconomics

Chairman: Clementine Dabire

Rapporteurs: A. Sounkura and Bamikole Ayedun

14.00 – 14.40	The challenge of supply chain development for cowpea technology in developing countries J. Lowenberg-DeBoer, Baributsa, D., H. Fabries
14.40 – 15.00	Effectiveness of cowpea and wild <i>Vigna</i> germplasm distribution and cost implication on their conservation efforts by IITA's genebank V.M. Manyong, D. Dumet, A.T. Ogundapo, and D. Horna
15.00 – 15.20	Supply chain development for cowpea storage technology in developing countries: Case study of hermetic triple layer sacks in West and Central Africa Dieudonne Baributsa, Jess Lowenberg-DeBoer, and Heather Fabries
15.20 – 15.40	Potentiel pour un développement effectif de la participation des femmes dans le sous secteur niébé à Kano Germaine Ibro, J. Lowenberg-De Boer, et Musa Shehu
15.40 – 16.00	The cowpea economy in West Africa—facts, trends, and outlook

A.D. Alene, T. Abdoulaye, J. Rusike, and V.M. Manyong

- 16.00 – 16.30 Coffee/Tea
- 16.30 – 16.50 Gender and adoption of cowpea innovations in West Africa: Review of some critical issues
A. Soukoura, C. Ousmane, Aitchedji
- 16.50 – 17.10 Economic and Technology transfer in a Livelihoods context. Lessons learned from the implementation and use of Hermetic Triple Plastic bagging in West Africa by World Vision International
Eric Schmidt, Bakary Thiero, Salifou Yaou and Kamarou Djiobo
- 17.10 – 17.30 Targeting Cowpea breeding and seed delivery efforts to enhance poverty impacts in sub-Saharan Africa
O. Coulibaly, A. D. Alene, T. Abdoulaye, J. Chianu, V. Manyong, C. Aitchedji, C. Fatokun⁶, A. Kamara³, B. Ousmane³, H. Tefera², and S. Boahen⁷
- 17.30 – 17.50 Participatory Cowpea Development for Poverty Reduction and Sustainable livelihoods in West Africa: Case of PRONAF (Projet Niébé pour l’Afrique) a multi-partners, regional and collaborative project
Adeoti, R., O. Coulibaly, R. Allomasso, S. Adetonah, B. Gbaguidi and C. Fatokun
- 17.50 – 18.25 General discussion
- 18.25 – 18.30 Chairman’s closing remarks

Wrap up/closing session

Co-chairs: AATF and IITA

Panel:

Irv Widders
Kallunde Sibuga
Jess Lowenberg De Boer
Hodeba Mignouna
Larry Murdock
ISRA DG

Rapporteurs: T. Abdoulaye
Steve Boahen
O. Boukar

Friday, 1 October

- 8.30 – 11.00 Purdue Improved Cowpea Storage (PICS).
- 14.00 – 18.00 *Bt* cowpea special event

Genetics and Breeding

Oral

Genetic variation in the mineral content (iron and zinc) of local cowpea varieties in Ghana

K. Adofo^{1,2*}, H. Adu-Dapaah¹, A.W. van Heusden² and B. Vosman²

¹CSIR-Crops Research Institute, Kumasi, Ashanti Region, Ghana

²Wageningen UR Plant Breeding, Wageningen University and Research, P.O. Box 16, 6700AA, Wageningen, The Netherlands

Selection of cowpea genotypes via farmers' participatory varietal selection activity in Niger

S. Muranaka^{1*}, O. Boukar¹, A. Abdulaye² and C. Fatokun¹

¹International Institute of Tropical Agriculture (IITA),

² Institut National de Recherche Agronomique du Niger (INRAN)

Combining *Striga* and aphids resistance in cowpea

I.D.K. Atokple* and F. Kusi

Savanna Agricultural Research Institute, P.O. Box 52, Tamale, Ghana

Sharing the responsibilities of cowpea and wild relative long-term conservation

D. Dominique, C. Fatokun, R. Pasquet, J. Ehlers, L. Kumar, S. Hearne, K. Sonder, S. Aladele, O. Boukar, R. Vodouhe, and L. Garino

Advances in cowpea improvement at Agricultural Research Council (ARC)-Grain Crops Institute, Potchefstroom, South Africa

J.A.N. Asiwe

Agricultural Research Council (ARC)-Small Grain Institute, Private Bag X29, Bethlehem 9700, South Africa

Modern approaches for cowpea breeding: How high-throughput genotyping and a high-density map change everything

J.D. Ehlers^{1,5*}, N. Diop¹, S. Hearne², D. Dumet², S. Wanamaker¹, R. Chiulele³, A. David⁴, P.A. Roberts¹, and T.J. Close¹

¹University of California, Riverside, California, 92521, USA;

²International Institute of Tropical Agriculture, Ibadan, Nigeria;

³Eduardo Mondlane University, Maputo Mozambique;

⁴Instituto de Investigacao Agronomica, Huambo, Angola

Evaluation of cowpea germplasm lines for minerals and protein content in grains

O. Boukar*, F. Massawe, S. Muranaka, J. Franco, B. Maziya-Dixon, and C. Fatokun

International Institute of Tropical Agriculture (IITA), P.M.B. 53220, Ibadan, Oyo State, Nigeria

Genus *Vigna* and cowpea [*Vigna unguiculata* (L.) Walp.] taxonomy

R.S. Pasquet* and S. Padulosi

ICIPE

Breeding high-yielding cowpea varieties with enhanced nutritional and health traits

B.B. Singh* and J. Awika

Visiting Professor, and Assistant Professor respectively, Department of Soil and Crop Sciences, Texas A&M University, College Station, Texas, USA

Cowpea breeding in the USA: New varieties and improved germplasm

R. Fery^{1*}, J. D. Ehlers², P.A. Roberts²

¹U.S. Department of Agriculture, Agricultural Research Service, U.S. Vegetable Laboratory, Charleston, South Carolina, 29414, USA

²University of California, Riverside, California, 92521, USA

Poster

Comparative analysis of genetic diversity and genetic relatedness between cultivated and wild cowpea [*Vigna unguiculata* (L.) Walp.] based on agronomic traits and microsatellite markers

L.A. Ogunkanmi^{1*}, O.T. Ogundipe², and C.A. Fatokun³

¹Cell biology and genetics department, University of Lagos, Lagos, Nigeria

²Botany and Microbiology department, University of Lagos, Lagos, Nigeria

³International Institute of Tropical Agriculture IITA, Ibadan Nigeria

Relationships among 30 elite cowpea [*Vigna unguiculata* (L.) Walp.] varieties as revealed by physiological and molecular descriptors

O.G. Omitogun^{1*}, A.S. Oladejo^{2*}, and I.O. Obisesan²

¹Department of Animal Sciences, Faculty of Agriculture, Obafemi Awolowo University, Ile-Ife 220005

²Department of Crop Production and Protection

Inheritance of testa texture of cowpea [*Vigna unguiculata* (L.) Walp.] and genotypic characterization of some cowpea cultivars

T.B.J. Batiemo^{1*}, I. Drabo², J.D. Zongo¹ and J.T. Ouedraogo³

¹Universite de Ouagadougou, UFR SVT, Burkina Faso

²Centre Regional de Recherches Environnementales et Agricoles du Centre INERA saria 01 BP 10 Koudougou 01

³Centre de Recherches Environnementales et Agricoles et de formation de Kamboinse 01 BP 471 Ouagadougou 01

Combining ability study of *Striga gesnerioides* resistance in cowpea using in vitro and pot screenings

J.B.S. Tignegre^{1*}, J.T. Ouedraogo¹, R. Melis², P. Tongoona², I. Drabo³ and O. Ouedraogo¹

¹Centre de Recherches Environnementales et Agricoles et de formation de Kamboinse 01 BP 471 Ouagadougou 01 Burkina Faso, racinetignegre@yahoo.com

²ACCI-University of KwaZulu Natal, PMB South Africa

³Centre Regional de Recherches Environnementales et Agricoles du Centre INERA saria 01 BP 10 Koudougou 01

Current status of cowpea breeding in Botswana

L. Fite Geleta

Department of Agricultural Research, Private Bag 0033, Gaborone, Botswana

Tetraploid induction of *Vigna unguiculata* using colchicine treatment

O.A. Adetula^{1*} and C.A. Fatokun²

¹National Horticultural Research Institute.P.M.B5432, Idi-Ishin, Ibadan, Oyo State, Nigeria; and

²International Institute of Tropical Agriculture, (IITA), Ibadan, Nigeria. PMB 5320, Ibadan, Oyo State, Nigeria, olagorite@yahoo.com

Characterizing genetics of resistance to multiple virus infections in cowpea [*Vigna unguiculata* (L.) Walp.]

K.E. Ogunsola^{1,2*}, C.A. Fatokun¹, O. Boukar³, C.O. Ilori² and P. L. Kumar¹

¹International Institute of Tropical Agriculture (IITA), PMB 5320, Oyo Road, Ibadan, Nigeria

²Department of Crop Protection and Environmental Biology, University of Ibadan, Nigeria

³IITA-Kano, PMB 3112, Kano, Nigeria

Studies on genetic diversity in cowpea [*Vigna unguiculata* (L.) Walp.] using biometrical traits and molecular markers

R.U. Kumari

Professor, Dept of Plant Breeding and Genetics, Agricultural College and Research Institute, Madurai 625104, Tamilnadu, India, genusha2003@yahoo.co.in

Studies on induced mutagenesis in cowpea [*Vigna unguiculata* (L.) Walp.]

V. Ashok Kumar* and R. Ushakumari

Etude de la diversite genetique des caracteres agromorphologiques des niebes du Niger

M. Adamou

INRAN BP 429 Niamey, Niger

Improving elite cowpea [*Vigna unguiculata* (L.) Walp.] lines in the uplands of Njala, Southern Sierra Leone

M.T. Moseray¹, A.E. Samura, and A. Mansaray

Njala Agricultural Research Centre (NARC), c/o Sierra Leone Agricultural Research Institute (SLARI), PMB 1313, Tower Hill, Freetown, Sierra Leone.

Reconnecting cowpea breeding activities to domestic market demand in Ghana

W. Quaye

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Study of combining ability, exploitation of recombinational variability for yield traits in cowpea (*Vigna unguiculata* L.)

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Assessing the genetic variability of cowpea drought tolerance in Mozambique

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Development of superior lines through interspecific hybridization in vegetable cowpea (*V. unguiculata* L. Walp × *Vigna sesquipedalis*)

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Estimation of additive, dominance and digenic epistatic interaction effects for certain yield and yield attributing characters in vegetable cowpea [*Vigna unguiculata* (L.) Walp.]

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Genetic divergence of cowpea [*Vigna unguiculata* (L.) Walp.] genotypes

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Understanding and unlocking cowpea (*Vigna unguiculata*) genetic diversity

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Genomics

Oral

Optimal units of selection – how many plants are representative of diversity in collections of cowpea landrace accessions?

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Molecular characterization of various cowpeas [*Vigna unguiculata* (L.) Walp.] varieties and their microbial symbiosis: Seeking for elites

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RAPD analysis aided characterisation and evaluation of relationship of cowpea [*Vigna unguiculata* (L.) Walp.] breeding lines

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Application of FTA[®] technology for sampling, and recovery of DNA for molecular characterization of cowpea breeding lines for *Striga* resistance

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New Cowpea IT97K-499-35 Genome Resources: 17X BAC library, 10X physical map anchored to a 1000-SNP genetic map, genome-wide sequences coupled to the genetic and physical maps

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An improved consensus genetic linkage map of cowpea [*Vigna unguiculata* (L.) Walp.]

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Genetic and physical mapping of resistance to biotic stresses in cowpea

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Genomic distribution of loci exhibiting positive pleiotropic effects on delayed senescence, grain yield and biomass accumulation under drought stress in cowpea

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Genetic mapping, physical location and synteny of *Fusarium oxysporum* f.sp. *tracheiphilum* race 3 resistance locus in cowpea

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Identification and characterization of MicroRNAs in cowpea

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Poster

Characterization of cowpea [*Vigna unguiculata* (L.) Walp.] genotypes based on morphological traits and rapid chemical tests

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The Kirkhouse Trust West African Cowpea Consortium

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Perspectives de l'inoculation du niébé avec des microorganismes symbiotiques au Sénégal

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Mapping of quantitative trait loci (QTLs) associated with domestication characteristics using a recombinant inbred population derived from a cross between wild and cultivated cowpea [*V. unguiculata* (L.) Walp.]

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Accelerating genetic improvement of asparagus bean (*Vigna unguiculata* ssp. *sesquipedialis*) for vegetable use in times when the genomic knowledge of cowpea bursts

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Bioengineering and Biosafety

Oral

Insect-protected cowpeas using gene technology

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Regulatory compliance - Burkina Faso

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Regulatory compliance of Ghana towards management of genetically modified organisms

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On the origins and development of GM cowpea

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a-Amylase inhibitor cowpea

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Development and Optimization of a genetic transformation system for some varieties of cowpea [*Vigna unguiculata* L. Walp.] cultivated in Senegal

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Assessment of potential impact of *Bt*-cowpea on non-target arthropods

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***Bt*-cowpea transgene escape to cowpea wild relatives**

R.S. Pasquet

ICIPE

Gene flow in cowpea: Longevity of wild and cultivated cowpea seeds in the field

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Assessing the potential allergenicity of genetically modified (GM) cowpeas following CODEX Alimentarius Guidelines (2003)

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Poster

Assessing the impact of bruchid-resistant (α AI-1) transgenic cowpeas on hymenopteran parasitoids

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Cowpea in the Systems

Oral

Effect of drought stress on physiological traits of cowpea (*Vigna unguiculata* L. Walp.): tolerant varieties and relevant traits for breeding programs

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Le niébé dans les nouvelles dynamiques paysannes en Centrafrique

G.A. Irénée

PRASAC/CEMAC

Performances technologiques de quelques variétés améliorées de niébé du Niger

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Improving the productivities of cowpea-cereal cropping systems in the dry savannas of West Africa through dissemination of improved cowpea cropping systems

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Improvement in grain and fodder yields of cowpea genotypes representing four decades of breeding in the Nigerian Sudan savannas

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Building capacity for community cowpea seed production and delivery in Tanzania: Experiences from pilot villages in Iringa district

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Increasing the productivity of cowpea with rhizobium inoculants

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Effect of phosphorus on survival, nodulation and yield of cowpea (*Vigna unguiculata*) varieties across a soil fertility degradation gradient in Western Kenya

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Seed health constrains upscaling informal seed systems

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Cowpea as a potential green manure crop in the rain forest zone of Ghana

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Short-duration cowpea varieties and intensive cowpea-cereals cropping systems for increased household food security and enhanced family nutrition in the tropics

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Poster

Status of cowpea research in Bangladesh

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Cowpea-livestock integration: A sustainable organic farming strategy towards nutrition security and improved livelihood in sub-Saharan Africa

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Harnessing the potential of agriculture for food security and improved livelihood through cowpea-livestock integration

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Field evaluation of IITA-improved cowpea (*Vigna unguiculata* L.) lines for yield potential and stability in different environments and locations

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The use of cowpea for increase crop-livestock integration and improved productivities in the dry savannas of West Africa

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Evaluation of farmer's affordability in the millet/cowpea intercropping system with application of organic matter in the Sahel, West Africa

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Opportunities for cowpea improvement in South Africa

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Effect of planting date on cowpea grain yield at Ilorin, Southern Guinea Savanna agroecology of Nigeria

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Cropping pattern of vegetable cowpea in some states of India

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Introduction of irrigated cowpea for improving food security in Mauritania

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Potentials of cowpea (*Vigna unguiculata*) for dry season seed and fodder production in Sahelian sandy soil of Niger

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Effect of timing to start leaf harvest on leafy vegetables and seed yields of selected cowpea (*Vigna unguiculata*) lines in Morogoro, Tanzania

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Effects of inter-row and intra-row spacing on yield and yield components of a prostrate cowpea cultivar (Buffa)

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Biotic Stresses

Oral

Managing the risk of introducing seed-transmitted viruses associated with import of cowpea germplasm into India

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Distinct mitochondrial haplotypes of legume pod borer *Maruca vitrata* Fabricius (Lepidoptera: Crambidae) global populations

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Genomics of the legume pod borer *Maruca vitrata* Fabricius (Lepidoptera: Crambidae)

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Plant protection deployment strategies for extension services and cowpea farmers

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Potential effect of phytopesticide (rice husk extract) on root and soil-borne fungi pathogens of cowpea isolated in the Northern Guinea Savannah of Nigeria

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IPM-omics: how omics is reshaping the way we do integrated pest management and implications for cowpea in West Africa

B. Pittendrigh, A. Gassmann, V. Margam, B. Coates, M. Ba, C. Dabire, I. Baoua, and M. Tamò

Migration and mating status of the legume pod borer, *Maruca vitrata* in northern Nigeria with reference to the efficacy of synthetic sex pheromone traps

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Biological control: a major component for the long-term cowpea pest management strategy

M. Tamò, S. Ramasamy, C. Agboton, C. Dabiré, I. Baoua, M. Ba, H. Braimah, and B.R. Pittendrigh

Role of alternative hosts in cowpea virus disease epidemiology in the unmanaged legume cropping systems in Nigeria

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Postharvest and Utilization

Oral

Analyse des pratiques pré et post-récolte du niébé [*Vigna unguiculata* (L.) Walp.] et évaluation de la qualité mycologique

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Purdue Improved Cowpea Storage (PICS): What it is and how it works

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Low energy techniques for differentiating commonly consumed cowpea [*Vigna unguiculata* (L.) Walp.] varieties in Nigeria

S.O. Alayande, D. Makinde, G.A. Osinkolu

Performance of PICS cowpea storage technology in villages in Niger

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Hard-to-cook (HTC) phenomena in cowpeas: Causes, mechanisms, prevention or alleviation

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Expérience originale et efficace de diffusion de la technologie PICS au Burkina Faso

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Association of seedcoat color to polyphenols, tannins and antioxidant activity In *Vigna unguiculata* varieties

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Yield and nutritive quality of genetically diverse cowpea accessions for use as food-feed crops

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Value-added processing of cowpeas in West Africa: Cowpea-based street food enterprises in Niger and Ghana

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Poster

Preliminary investigation utilization of cowpea pod in porous ceramic clay filter

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Comparative evaluation of six storage technologies for postharvest preservation of cowpea grain

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Etudes de base sur l'efficacité des plastiques en conservation du niébé par triple ensachage au Burkina Faso

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Phytochemical quality of cowpea (*Vigna unguiculata*): Implications for food processing and potential contribution to health

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Effect of PICS bags and IRRI Super Bags on the control of postharvest pests in stored maize in Benin

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Extension of Purdue Improved Cowpea Storage technology: Impacts and challenges: Case study Plateau State, Nigeria

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Socioeconomics

Oral

Supply chain development for cowpea storage technology in developing countries: Case study of hermetic triple layer sacks in West and Central Africa

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Assessing the re-use of PICS bags in Jigawa, Kano and Katsina States of northern Nigeria

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Effectiveness of cowpea and wild *Vigna* germplasm distribution and cost implication on their conservation efforts by IITA's genebank

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Potentiel pour un développement effectif de la participation des femmes dans le sous secteur niébé à Kano

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Cell phone video for communicating hermetic cowpea storage skills

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The cowpea economy in West Africa—facts, trends, and outlook

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Gender and adoption of cowpea innovations in West Africa: Review of some critical issues

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Economic and technology transfer in a livelihoods context: Lessons learned from the implementation and use of hermetic triple plastic bagging in West Africa by World Vision International

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Participatory cowpea development for poverty reduction and sustainable livelihoods in West Africa: Case of PRONAF (Projet Niébé pour l'Afrique) a multi-partners, regional and collaborative project

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Targeting cowpea breeding and seed delivery efforts to enhance poverty impacts in sub-Saharan Africa

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Producing cowpeas for sustainable rural livelihoods in West Africa: an agenda for food security and poverty reduction

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Estimating impact of improved cowpea and cereal varieties on poverty in Northern Nigeria using a Propensity Score Approach

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Adoption of hermetic storage for cowpea in Niger and Burkina Faso in 2010

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Evaluation de la réutilisation des sacs PICS et de leur usage pour la conservation d'autres denrées dans les zones de diffusion de la technologie du triple ensachage au Burkina Faso

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The Effect of Extension Programming on the Adoption of the Triple-Bagging Hermetic Storage Technology for cowpeas

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Adoption of PICS bags in northern Nigeria: a case study of Jigawa, Kano and Katsina States

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Facilitating agricultural innovation and development in sub-Saharan Africa: Lessons from A research into use Programme in Nigeria

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Integration of Cowpea Markets for Food Security in Nigeria: Food for thought

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Socioeconomics of demand and consumption pattern of cowpea in Nigeria

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A socioeconomic assessment of cowpea diversity on the Ghanaian market: Implications for breeding

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