



NEWS

Volume 1, February 1, 2002 Larry Murdock and Idah Sithole-Niang, editors

From time to time, we will send along a newsletter to NGICAns and other interested parties to bring you up-to-date on developments relevant to NGICA. We'll include sundry announcements about meetings, publications, achievements, and other (hopefully) useful information. We'll try to keep it short, because all of us are awash in a sea of information. If you have something to share with other NGICAns, send it to us and we'll pass it along in the next newsletter. Be warned that we will probably get some things wrong here, for which we apologize in advance.

1. After the Dakar meeting in January, 2001, we decided, after much email discussion, on the name "NGICA", which is the acronym for "Network for the Genetic Improvement of Cowpea for Africa". We thought NGICA had a good African sound, and stood for what we are – a community of people who have a shared commitment to the genetic improvement of cowpea for Africa and who are happy to be part of a network to attain this end. We also settled upon a logo (see above).

2. We eventually published the final report on the Dakar meeting. Copies were sent to all participants. If you didn't receive yours, or want extras, please let us know. By the way, did anyone recognize the cowpea farmer pictured on the front cover?

3. While preparing the final report, we worked out a flow diagram showing the activities and steps that will be required to bring a transgene into a useful cowpea cultivar and eventually getting seeds of the cultivar into the hands of African farmers – in ways that will be sustainable. Studying that diagram has the effect of inducing humility. What we NGICAns have undertaken is a huge job. It will take a long time, and all of us have to help. And we are going to have to recruit a lot more people to lend us a hand.

4. Great News! T.J. Higgins has received a grant from the Rockefeller Foundation for his project "Genetic Enhancement of Cowpea Using Gene Technology". The grant will be for three years and provides US \$163,000 per annum. This adds substantially to the resources available for genetic transformation of cowpea.

5. In connection with his new project, T.J. is advertising for a postdoctoral associate, as follows: “A Postdoctoral position is available to develop a genetic engineering system for cowpeas using *Agrobacterium*-mediated gene transfer. The goal of this work, (funded by the Rockefeller Foundation), is to deliver genes encoding proteins that will protect cowpeas from pest insects in the field and during storage. The project involves selection of cowpea lines that regenerate efficiently in tissue culture especially in the presence of *Agrobacterium*, the construction and verification of chimeric genes designed for organ-specific expression and the molecular analysis of transgenic plants and their progeny. The candidate is expected to have experience in plant tissue culture using *Agrobacterium* as a gene vector and to have experience in gene construction, DNA, RNA and protein analyses. Familiarity with standard biochemical and molecular biology techniques is also essential. The selection criteria and duty statement can be obtained from <http://www.csiro.au/careers> and go to PG: 02014 or send a letter of interest seeking a duty statement and selection criteria to Dr TJ Higgins, CSIRO Plant Industry, GPO Box 1600, Canberra, ACT 2601, Australia or email TJ.Higgins@csiro.au.”

6. Thanks to the labors of Irv Widders, Mywish Maredia, and the leadership team of the Bean/Cowpea CRSP (Collaborative Research Support Program), the CRSP now has excellent prospects for a new 5 year grant. Following the CRSP leaders’ presentations to the SPARE committee, a subcommittee of BIFAD, in Washington, D.C., on November 18, 2001, the SPARE committee approved the Bean/Cowpea CRSP’s new grant proposal without any conditions, and recommended that the new grant be awarded. One of the positive attributes of the CRSP’s work singled out by SPARE was its involvement and commitment to biotechnology as a tool for improvement of beans and cowpeas. One of the projects included in the new CRSP grant proposal involves work on genetic transformation of cowpea by Ray Bressan and Larry Murdock at Purdue, Idah Sithole-Niang at the University of Zimbabwe – Harare, and biosafety-related work by A.B. Salifu, at SARI, Tamale, Ghana. If all goes as hoped and expected, and USAID’s wheels move appropriately, the new grant will begin in mid-Spring.

7. Several NGICAns met in Washington, D.C., on October 29, 2001 in USAID’s Africa Bureau offices. Purpose of the meeting was to coordinate cowpea-related biotechnology research activities. Rodomiro Ortiz of IITA organized the meeting but was not able to attend; the meeting was chaired by outgoing IITA DG Lukas Brader. Participants included the new IITA DG-designate Peter Hartmann, George Bruening of the University of California at Davis, Michael Timko of the University of Virginia, Gary Toenniessen of the Rockefeller Foundation, Ray Bressan and Larry Murdock of Purdue, Idah Sithole-Niang of the University of Zimbabwe at Harare, and Irv Widders of the Bean/Cowpea CRSP. USAID officials participating included Jeff Hill, Josette Lewis, Felipe Monteiga, and Jiryis Oweis. As Josette Lewis noted in her summary of the proceedings, the meeting helped build bridges and foster communication among the various interested parties in cowpea biotechnology.

9. Thanks to a combination of special assistance from Fred Erbisch and travel funds from the Rockefeller Foundation, Idah Sithole-Niang was enabled to participate in an International Internship Program in Intellectual Property Rights (IPR): Technology Transfer, Use and Management. The week-long program was held in early July, 2001, on the campus of Michigan State University, and organized by the USAID-funded ABSP program. Fred was one of the teachers.

10. Joe DeVries and Gary Toenniessen have recently (late 2001) published a book that grapples with the entire spectrum of needs and problems of food production in sub-Saharan Africa: "Securing the Harvest: Biotechnology, Breeding and Seed Systems for African Crops". This book was published by CABI Publishing. It systematically reviews the history of crop production in Africa, and examines the challenges of food production from many points of view, including that of the breeder as well as that of the biotechnologist. Special emphasis is given to the problem of seed supply, long one of the more intractable constraints to increasing food crop productivity. There are chapters on each of the seven most important food crops of Africa. One of the underlying themes of this important book is the need for new strategies to cope with the special difficulties of African agricultural development, and an assessment of the role biotechnology might play. An idea that suffuses the book relates to something close to the hearts of all of us NGICAnS – namely, that in the end, the true and most important measure of our success is the difference we make in people's lives, on the ground, in the villages and marketplaces. There is a sore need in Africa for more food, better food, and increased farm incomes. It is heartening to see works like this book bring the world's attention to a problem that has too long gotten too little attention.

11. "NGICA Central" – which is what Idah and I jokingly call our voluntary, virtual and unfunded management office – has 10 copies of the videotape "Harvest of Fear". This is a Frontline/NOVA Special published by PBS Video. The tape gives a fairly balanced account (despite the sensational title) of the impact and issues of biotechnology (from the US perspective, of course), originally aired on American TV some months ago. We will mail copies (legal ones – we bought the tapes!) to the first 10 African NGICAnS who want a copy to view and who promise to show it to their students and colleagues. We emphasize that both the pros and cons of biotech are presented here. Here's the caveat: the tape is only available in NTSC format. Send Larry an email if you want a copy.

12. Laurie Kitch and Tafadzwa Sibanda recently edited a book on "Post-Harvest Storage Technologies for Cowpea (*Vigna unguiculata*) in Southern Africa". This will be a useful reference to anyone interested in cowpea post-harvest grain storage, not only in southern Africa, but virtually anywhere. It includes excellent descriptions of bruchid biology and provides practical instructions on post-harvest storage technologies to reduce losses to cowpea weevil and other bruchids. It includes a chapter on biotechnology by Idah Sithole-Niang. The book was an outgrowth of a meeting organized by Laurie Kitch and jointly funded by FAO, the Bean/Cowpea CRSP, and the Crop Post-Harvest Programme. For a free copy, contact Laurie Kitch (by email or by mail regular c/o FAO Sub-Regional Office, P.O. Box 3730, Harare, Zimbabwe) or Larry Murdock, by email.

13. As we look ahead to producing transgenic cowpeas expressing Bt genes and possibly alpha-amylase inhibitor from common bean, we need to be thinking about food safety questions. This is the case even though the food safety record of Bt is nearly perfect – it is the favorite insecticide of organic farmers, and has been used commercially in the USA for more than 40 years – and even though people have been consuming alpha-amylase inhibitor-rich common beans for millennia. There will, for example, still be questions as to whether Bt protein might pose some hazard when specifically combined with cowpeas. To begin to address these food safety questions, the Bean/Cowpea CRSP Technical Committee has approved \$5,250 to Purdue Food Scientist Suzanne Nielsen (an NGICAn whose teaching schedule prevented her from coming to Dakar) to be used to carry out a preliminary food safety literature survey of these two candidate proteins. Since African partners in this undertaking are obviously essential, a food

scientists from Prof. Sam Sefa-Dedeh's University of Ghana – Legon Food Science Department will come to Purdue to carry out the study in collaboration with Suzanne. It is anticipated that the resulting review will identify specific cowpea-related research needs that can be addressed subsequently through funded research grants. By starting this work now, the results will hopefully be in hand when they are needed. The University of Ghana-Legon/Purdue axis hopefully can take leadership in this area, and foster the development of food safety related research capacity in Africa.

13. Joe Huesing recently visited Purdue and presented a seminar on the high-tech, high-throughput insect resistance gene discovery technology he and colleagues have developed at Monsanto over the last few years. Not only is the physical apparatus awesome (hypermodern robotics), so is the associated information management system Joe and colleagues worked out. Their accomplishments were so impressive that they were featured in a major article published in 'Discovery – IDBS' Magazine for Discovery Research Professionals'. Any NGICAn who wants to see how things are done in arguably the very best resistance gene discovery laboratory in the world, ought to read this article. If you would like a copy, send an email to Larry.

14. Remember, if you have something to share, an announcement, a new book, a publication, a review, a new grant, a course, a meeting, or anything else that would interest NGICAns, send it along to Larry or Idah. In due course we'll be glad to share it in a newsletter.