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COMBRO II PROJECT

Quality & Yield

Supporting smallholder farmers' decisions on top quality commercial products

IN THIS ISSUE

3 Compro II – supported Mycorrhizal training rated highly

4 Scientific Advisory Committee 2015 urges innovation in Student research

6 Country Radar 2015

7 Give enough attention to quality and regulation urges COMPROII urges regional stakeholders

8 Why do we need Standard Operating Procedures?

9 COMPROII and MEA target last-mile link with innovative farmer education materials

10 COMPRO II invited to Kenya Standing Technical Committee on Imports and Exports awareness meeting

11 Unpacking the content of the Rhizobium Manual for Uganda extension teams

Message from the project Leader

Dear Reader,

As the second quarter of 2015 rolls out, we are looking at partners gearing up for a particularly challenging year for the project.

We anticipate that all partners will have signed their new agreements which detail priority work plan activities for 2015. A good number have already signed and are up and running with their work plans. In 2015, we anticipate a mid-project assessment to help us pick out the key lessons we are learning on commercial product quality monitoring, regulation and as well as focusing on promising models of effective commercialization of products in our target countries.

"We anticipate that all partners will have signed their new agreements which detail priority work plan activities for 2015."

Specifically, we anticipate learning a lot from Kenya's experiences with commercialization of such products as the Biofix brand on rhizobium inoculant, a very rich lesson learning opportunity around research and private sector collaboration. It is noteworthy that in Nigeria, a commercialization model for the Nodumax product from IITA continue to unfold with exciting lessons. Our revised dissemination strategy goes into its second year and clearly our partners, Notore, Africa Fertlizer and Agribusiness Partnership (AFAP), Africa 2000 Network Uganda and Farm Input promotions, have invaluable lessons, emerging form the most effective product promotion and demand creation approaches at the last-mile level.

In Tanzania, the stage is set with new commercial product registration guidelines launched in the last quarter on last year. The next critical step is ensuring stakeholder buy and use of these guidelines in the efforts to introduce new commercial products in the Tanzanian market.

A very healthy crop of Students, are actively pursuing their Masters and PhD programmes under the COMRPOII project. Importantly, the research topics selected by the students are helping us answer crucial questions around product efficacy, and quality screening. These directly inform national regulators efforts to strengthen quality monitoring of commercial products.

As you read some of the highlights coming from partner's activities in this issue, I welcome you to share your experience, commercial products, screening, monitoring, regulation and commercialization in your country.

Dr. Cargele Masso
COMPROII Project Leader

Compro II – supported Mycorrhizal training rated highly

NIGERIA

By Ado Yusuf

Participants at a training course on mycorrhizal techniques organized at IAR/ABU 20th – 24th Dec. 2014.

The Institute for Agricultural Research, Ahmadu Bello University (IAR/ABU) Zaria in collaboration with the International Institute of Tropical Agriculture (IITA) organized a five day training for postgraduate students and laboratory technologists on mycorrhizal techniques in the Department of Soil Science, IAR/ABU.

The training which was supported by the COMPROII project, was highly rated by the participants, who included twenty, postgraduate students as well as staff-in-training from various universities and institutes in Nigeria.

The institutions represented included; ABU Zaria, Bayero University Kano (BUK), Ladoke Akintola University of Technology (LAUTECH) Ogbomoso, Federal University of Agriculture Makurdi, and National Agricultural Extension and Research Liaison Services (NAERLS) Zaria attended the training with two resource persons from IITA Ibadan.

'This training is particularly important as part of the COMPROII intervention to strengthen the Practical Soil Microbiology curriculum in ABU' explains Dr. Ado Yusuf, who leads the research activities under objective 2 of the project COMPROII project in Nigeria.

Topics Covered:-

- Potential of Arbuscular Mycorrhiza Fungi (AMF) in Agriculture;
- Demonstration of soil and plant sampling procedures for mycorrhizal studies and Laboratory practical.
- Root staining, estimation of root colonization by AMF.
- AMF spore extraction, AMF spore classification and identification, spore isolation and
- Inoculum production, maintenance and storage.

Arrangements have been concluded to provide similar equipment that were used for the training to IAR/ABU so that the training modules will be taught to all subsequent set of students that will register for the Practical Soil Microbiology course. In addition, the training was used to create awareness among the participants on the role COMPRO II is playing to ensure that only effective bio fertilizer products are used by farmers in Nigeria and other project countries such as Ghana, Kenya, Tanzania, Uganda and Ethiopia. During the training several commercial products were put on display and the discussion focused on critical aspects such as product origin, content, mode of action and target crop(s).

ETHIOPIA

SAC members, keenly follow presentation at the meeting.

Scientific Advisory Committee 2015 urges innovation in Student research

PhD students working on various research topics, in the COMPROII project, have been encouraged to be innovative and seek to contribute new knowledge in their areas of interest. Speaking at the 2015 SAC meeting, Late Prof. Seth Danso, one of the Advisory Committee members, said "when working through your research questions, actively seek to answer the question; why am I conducting this research?. Only then will you be able to refine your work to contribute new knowledge".

Prof. Roel Merckx, the chairperson of the Advisory committee, echoed the sentiments and noted that overall, stakeholders expect that COMPROII students both at MSc. And PhD levels are supported to conduct high quality research, especially because the students have the advantage of interacting with experienced researchers and teachers within the project. "Let us engage our supervisors a lot more, and take full advantage of the many years of research experience that is available among the project teams' he urged. 2014 saw the project supporting upto, fourteen students pursuing Msc. and PhD courses across a range of topics. Read the student topics below:

Name	Degree	Country	Topic
Marciale Chrian	PhD	Tanzania	Efficacy of selected microbial pesticides in management of tomato fusarium wilt and root knot nematode in Tanzania
Mutegi Edwin Mwiti	PhD.	Kenya	Microbial dynamics as influenced by inoculation, cropping systems and soil fertility in western Kenya
I.A. Aliyu	PhD.	Nigeria	Effect of Mycorrhizal Inoculants and Phosphorus Fertilizer on the Productivity of Cassava in Moist
Jacob Ulzen	PhD.	Ghana	Mode of action and residual effect of some selected commercial microbial inoculants.
Ruth Wilhem Mukhongo	PhD.	Uganda	Integrating Arbuscular Mycorrhizal fungi into soil phosphorus management for sweet potato production in Uganda
Stella Simiyu Wafukho	PhD.		Complexities of Harmonization of Regulatory Frameworks for Bio-inputs in selected countries of SSA

ETHIOPIA

Yifru Abera	PhD.	Ethiopia	Studies on Characterization and Evaluation of Indigenous and Commercial Soybean Nodulating Rhizobia in Ethiopia
Bello Suleiman Kehinde	Msc.	Nigeria	Evaluation Of Commercial Microbial And Organic Products On The Growth And Biomass Yield Of Maize And Selected Legumes On An Alfisol
Deodatus Stanley Kiriba	MSc.	Tanzania	Effects of commercial chemical and microbiological products on maize growth and yields
Omuron Geoffrey	Msc.	Uganda	Efficacy of rhizobia inoculants for improved groundnut production in Uganda
Gideon Asamoah	Msc.	Ghana	Evaluation of the quality and Effectiveness of some commercial Inoculants in enhancing the growth And yield of soybean and maize
Grace Kariuki	Msc.	Kenya	Determination of the effectiveness of Trianum-P (Trichoderma harzianum) and Trichotech (Trichoderma asperellum) in the control of late blight of tomatoes
Hezekiah Korir	Msc.	Kenya	Effectiveness of native Rhizobia strains and selected commercial inoculants on soybean (Glycine max) and common bean(Phaseolus vulgaris) yield parameters
Johari Mohamed	Msc.	Tanzania	Effectiveness of Rhizobium Inoculant Commercial products on yields of soybeans and common beans grown on an Ultisol in Morogoro, Tanzania

A Section of the Participants at SAC 2015

Country Radar 2015

Nigeria

Despite typical challenges including insecurity in some areas, we are seeing progress with NOTORE's work with partners to mainstream inoculum technology for legumes including developing commercial models to enable anticipated commercial availability of Legumefix® and Nodumax® rhizobium products in the market. Deployment of video dissemination approaches is helping overcome the challenge of raising awareness among small holder farmers including youth farmers with cost-effective approaches that complement the more expensive demos. A renewed emphasis on gender equity in training of extension teams is a priority for 2015. Mycorrizal skills strengthening continues facilities by ABU-ZARIA.

Ghana

Although the dissemination model has experienced challenges in the last one year, a number of activities have been undertaken that have increased farmer interest in technologies . These included farmer mobilization, training of staff of the dissemination partners (Antika Seed), conducting early season training, and installation of soybean and maize demonstrations and conducting farmer field/open days. Soybean and maize were the priority crops with Legumefix® as one of the target products. A key issue is the supply chain for the commercial products in the country.

Tanzania

Milestone achievement in development and launching of registration guidelines for bio fertilizers by TFRA in 2014 likely to expedite progress in this area. Good support received from MEA fertilizer in supplying farmer education materials to support AFAPs dissemination work in Tanzania as discussions continue to strengthen a commercial model for availability of commercial products including Biofix® from MEA and Legumefix® to be supplied by ETG. Emergence of alternative product such as NitroSUA® by Sokoine university show promise for an expanding potential for rhizobium products.

Uganda

Set up of testing capacity continuing with N2Africa-supported greenhouse nearing completion. However key constraints in product roll-out include current requirements for product registration by regulators that require multiple seasons to test new products before final approval for commercialization. Lab accreditation needs expediting as well. Dissemination activities can achieve better results if provision of legume seed for smallholder farmers is streamlined and farmer groups better organized to interact with private sector.

Kenya

Development of private sector interest in commercial products is key to support farmer's adoption as well as communication the economic benefits. FIPs reports that Kenyan scene is promising with a number of products already in the market like Biofix ®, and other in the pipeline such as Legumefix® now registered by a commercial agent Lachlan in Kenya, and a new rhizobium product lined up for commercialization by Bayer East Africa. FIPs early experiment with use of Minjingu rock phosphate now replaced with Groplus® a seed coating phosphorous fertilizer. Lab capacity at Egerton University increased with purchase of new equipment and completion of a greenhouse to support objective 2 activities. Ongoing product testing with two commercial products Symbion P® and Di-grow® show positive effect on early plant growth but more work needed to establish effect on sustained grain yield in the trail sites of Chuka and Egerton. A key challenge is obtaining products that have gone through approval as most did not have local distribution networks. Significant achievement with six University courses identified for revision to incorporate components of COMPRO-II at Egerton University.

Ethiopia

Evaluation of new rhizobial strains and integration of strains evaluation with legume blend chemical fertilizers are key and emerging themes for Ethiopia. COMPRO-II support in procuring lab equipment will strengthen screening work at Holetta Research Centre once finalized to address such needs as molecular characterization of strains. Dissemination activities have featured super-imposing bio-fertilizer technologies with other adaptation packages for smallholder farmers.

Give enough attention to quality and regulation COMPROII urges regional stakeholders

Harmonization of registration processes and guidelines will play an important role in facilitating cross-border availability and trade for commercial products.

Speaking at a recent consultative meeting convened by AGRA titled "Increasing grain legume and Rhizobium inoculum usage by smallholder farmers", Dr. Cargele Masso, the COMPROII project leader reiterated to the stakeholders at the meeting the need for sustained attention to quality monitoring with a view to ensure that good products do not compete unfairly with products whose quality has not been established.

Participants at the AGRA-convened Rhizobium producers meeting – 20th March 2015, Orchid Hotel, Nairobi.

"I think we have an opportunity to exploit some of the ongoing regional dialogues to support harmonization in this area especially within the East Africa region" he explained. As part of the process of ensuring quality, he urged stakeholders to take advantage of the growing agro-dealer strengthening programmes in the region as an avenue to equip agro-dealers with necessarily skills to stock compliant products, but also be able to pass on information to farmers.

The stakeholder consultation, organized by AGRA took place on 20 March 2015, in Nairobi. It brought together more than forty delegates from the region representing universities, private sector companies involved in production of rhizobium inoculant, international agencies involved in research, and senior government officials from Kenya.

Stakeholder ate the meeting, jointly noted the need for a value-chain approach to addressing scale up of such technologies as Rhizobium inoculant. They specifically pointed out the need for all actors including Researchers, Government, Private sector and other product proponents to work together to ensure that good quality products identified through research, can eventually become commercially available to the small holder farmer with up to date information on their correct usage, availability, as well as economic benefits.

Other speakers at the consultative meeting included, Dr. Bashir Jama (AGRA), Dr. Rebbie Harawa (AGRA), Mr. Moses Kamau (ministry of Agriculture-Kenya) among others. Private sector was represented by MEA fertilizer, and Export trading group (ETG).

The meeting had been convened to share experiences and solutions to challenges associated with scaling up the production of grain legumes and identify strategies for increasing the supply and use of Rhizobium inoculum as well as identify policy constraints and practical solutions that could be deployed at national and regional levels.

KENYA

Why do we need Standard Operating Procedures?

Quality & Yield Opinion

The Standard Operation Procedure (SOP) is intended to guide laboratories appointed by regulatory agencies in screening of Rhizobial products for quality. Based on the information on the product label, the screening is to confirm the strains, populations and ability to produce effective nodules. This is to guarantee customers a quality product devoid of contaminants that can reduce the efficacy of the product or are harmful to plants, human, animals and the environment. The final expected outcome from the SOPs is that the regulatory agency is properly guided on the quality of the product and its suitability for use by farmers. The SOP outlines the procedures provided by the regulatory agency to generate quality data as stipulated on the label and of acceptable standards. The SOP makes it easy to find out what policies and procedures are in place to handle repetitive situations/tasks

Why Would I Want SOPs and What Will They Do For Me?

To develop and implement effective SOPs, below are some of the ways SOPs can have a direct or indirect positive impact on the COMPRO-II activities:

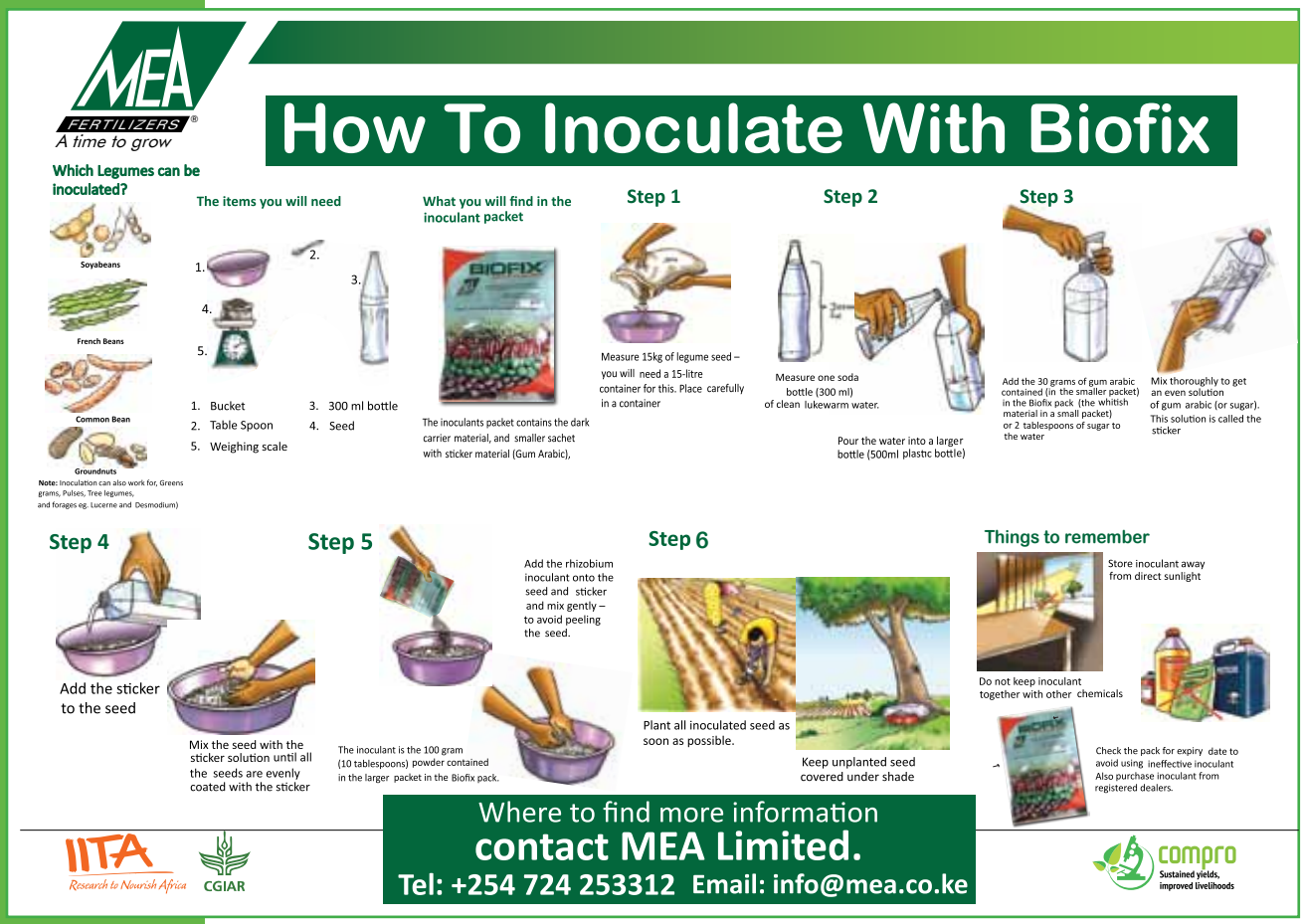
1. People need consistency to achieve top performance. The participating laboratories will be able to undertake the required jobs the same way every time rather than wondering, "How should it be undertaken this time round?" This therefore improves productivity, consistency in routines, etc.

2. Well-written SOPs facilitate training. Having complete step-by-step instructions helps trainers ensure that nothing is missed and provides a reference resource for trainees

3. Well-written SOPs facilitate cross training. A SOP can be an excellent reference document on how a task is done for Partners filling in on jobs they do not perform on a regular basis.

4. SOPs can help in conducting performance evaluations. They provide a common understanding for what needs to be done and shared expectations for how tasks are completed.

5. Having SOPs can encourage regular evaluation of work activity and continuous improvement in how things are done.



Teresah Wafullah, the manager for the Biofix rhizobium product by MEA, was apprehensive about how best to convey the inoculation message to the farmers in western Kenya where a lot of promotional work has been ongoing.

"We have a lot of text-based leaflets and pamphlets at MEA, and now we also have the prototype manual that COMPROII has helped produce for adoption" She explains, referring to the prototype that has now been adopted for Ethiopia and Uganda, with ongoing adaptation work for Nigeria and Tanzania.

"I want to see something slightly more farmer-friendly. Something that recognizes the literacy limitations of some of our farmers, but also takes advantage of visual illustration. This can be truly useful for us in the field".

This conversation, took place about 3 months ago between Teresah and James Watiti, the Objective 4 lead for COMPROII. Based on a in-depth discussion on the advantages of a visual illustration-based approach to teach farmers how to inoculate, a new initiative was launched to repackage the key messages form the prototype manual into an extension flipchart and a poster. The materials will then easily serve, both extension agents but also be good enough to leave with Agro-dealers who wish to educate their customers on the technology especially e when they have some of the products in stock.

The resulting products (see picture on this page), is the effort to condense the 'how-to' of inoculation messages into catchy and simple design that has higher utility for field-based teams.

For more information on the Process contact James watiti

KENYA

COMPROII invited to Kenya Standing Technical Committee on Imports and Exports awareness meeting

Participants at a past KSTCIE sensitization meeting in Nairobi in 2014.

On 17th February 2015, a team from COMPROII was part of the stakeholders attending a one-day sensitization workshop on the Kenya Standing Committee on Imports and Exports (KSTCIE) at the Kenya Plant Health Inspectorate Headquarters in Karen, Nairobi.

During the meeting, Dr. Cargele Masso presented a statement titled "Regulation of bio-products: increasing consumer protection, while facilitating trans-boundary movement".

'We need to take advantage of crucial forums such this one to share messages on regulatory aspects that we are learning with the COMPROII project' he later explained.

The KSTCIE assesses human, plant, animal and environmental risks that would present during introduction biological agents, bio-fertilizers and related products. KSTCIE convened the forums to inform and empower the key players on the purpose and operation of the committee.

The meeting was attended by various senior ministry official including the Director of Policy in the Ministry of Agriculture, Livestock and Fisheries, Kenya, Ms. Ann Onyango.

Kenya Plant Health Inspectorate Service (KEPHIS), as the secretariat to The Kenya Standing Technical Committee on Imports and Exports (KSTCIE), facilitates the process of risk assessment before introduction of regulated articles including live biological controls, bio- fertilizers, bio-stimulants, organic fertilizers ,their products among others. Once risk assessment is complete, products approved for introduction are referred to relevant research and mandated institutions for processing, clearance, efficacy, registration among other actions.

For more details, please log on to the following website:
http://www.kephis.org/index.php/import-requirements/2014-04-14-06-21-45

UGANDA

Unpacking the content of the Rhizobium Manual for Uganda extension teams

Practical session during the awareness worship

More than forty participants consisting of African 2000 Network Community Based Facilitators, small scale Agro dealer's and A2N staff converged in Tororo, Uganda for an awareness workshop on 16 April 2015. The workshop was aimed at raising awareness on the newly completed manual for Rhizobium Inoculation was produced by Africa 2000 Network as part of the COMPROII information dissemination effort.

"This is a crucial step in the journey towards making rhizobium technology available to our small holder farmers" explained Dr. Christopher Kyeswa, A2Ns Executive Director in his workshop opening remarks. He explained that A2Ns role in disseminating technologies in the COMPROII project depends heavily on availability of high quality, accurate and validated information on commercial products.

"People can't buy what they don't know"

"In Uganda, rhizobium technology has been in development for close to two decades under the leadership of Makerere University and other partners, but the sharing of information on this technology remained very weak. The COMPROII project came in and has helped refocus attention on the role of information in scaling up commercial product use by smallholder farmers. He explained.

Other speakers at the workshop included, Mr. Brian Niyitegeka, from the Ministry of Agriculture, who reemphasized government's regulatory role on commercial products. He noted that quality control will remain an important part of helping drive demand for commercial products in Uganda.

Ruth Mukhongo a PhD, student with the COMPROII project helped participants understand the product testing and screening work including ongoing testing work on other non-rhizobia products in Uganda.

Participants at the awareness workshop on Rhizobium manual for Uganda

Mr. Lauren Musika, who is in charge of the A2N field office in Tororo, took time to explain the key content and message areas in the manual.

The production of the Rhizobium manual was a collaborative effort with the Communications lead in the project in conjunction the Africa Soil Health Consortium (ASHC), a project dedicated to promoting increased sharing of Integrated Soil fertility Management information to smallholder farmers. ASHC is a managed by CABI.

COMPRO-II team grateful for Dr. Vasey Mwaja's contribution to project strategy
Dr. Vasey Mwaja, who joined the COMPRO-II team in 2013, has now moved.

We recall his words of advice as he took over as our focal point at the Bill & Melinda Gates Foundation, "We need to make progress in supporting countries to strengthen their regulatory environments for commercial products as a critical mission of this project". He noted at the time. He kept his word and over the next few months, we began to refocus project strategy with greater emphasis on ensuring country-level improvements in regulatory infrastructure for commercial products.

"Our work in product screening, testing, capacity building and dissemination will be made a lot easier if we progressively move the countries along the regulatory path" Dr. Vasey Mwaja.

Dr. Mwaja's vast experience that strategically covered both, regulation of commercial products as well as private sector skills helped the project take a keener interest in learning lessons across the region on the building blocks for effective regulatory environments in Kenya, Uganda, Tanzania, Nigeria, Ghana and Ethiopia.

His timely guidance has been a good opportunity to carefully consider our dissemination objectives so far and bring them closer to some of the key milestones including greater emphasis on strengthening our regulatory environment"

The project team wishes him all success in his new endovaeur.

'Quality & Yield' is the newsletter of the COMPRO II project. It is a quarterly publication that highlights key activities and experiences of the project. 'Quality & Yield' is produced and designed by CABI. We welcome
short and medium length articles by project partners. Send your comments and articles to C.Masso@cgiar.org and J.Watiti@cabi.org
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