

TECHNOLOGIES FOR MANAGING FALL ARMYWORM: LESSONS FROM BRAZIL

CHAT TRANSCRIPT

AUGUST 22, 2018

PRESENTERS

Antônio Álvaro Corsetti Purcino, Embrapa Maize and Sorghum

Joseph Huesing, USAID Bureau for Food Security

Brian Conklin, USAID Bureau for Food Security

MODERATOR

Julie MacCartee, USAID Bureau for Food Security

Mantaoleng Tlali 2: Hi, I am Mantaoleng Tlali from Lesotho. I am a senior Crop Production Officer in the Ministry of Agriculture, Department of Crops Services. One of My responsibilities is to train Extension workers and farmers on plant protection issues, as a result, I have been introduced by SADC through the consultant who was sent to Lesotho to train us on Fall Armyworm, but have not get the privilege to see live Fall Armyworm because it has not so far been reported in my country (Lesotho)

Mantaoleng Tlali 2: My Ministry in Full is called Ministry of Agriculture and Food Security.

Garmonyou A. Sam: My name is Garmonyou A. Sam from Liberia. I serve as Crops Resource Officer and function mainly as a Crop Protectionist (particularly in the area of Entomology) in the Department of Technical Services at the Ministry of Agriculture. I am responsible to advise farmers and the public on crop protection issues as well as training and engaging in a profitable management exercises. In 2017, I was appointed as the Focal Point on Fall Armyworm and was trained in Lagos, Nigeria on a Regional Training organization by FAO. The Fall armyworm was identified in Liberia in 2017 on maize and rice (staple). A training was organized by FAO in along with the Ministry of Agriculture in 2017 for extension workers and farmers.

Magdaleno Bargamento 3: Hi everyone!

Miriam Alonso Camarero: Hello, I am Natural Resources Advisor in VSO Malawi.

Adam Ahmed - USAID Agrilinks: Greetings! Thank you all for joining us today!

Adam Ahmed - USAID Agrilinks: The webinar will begin at 9 am. We look forward to hearing all of your questions.

Vo vo Htwe: hello

Aline Rendall Monteiro: Hello I am from the Agricultural Research and Development Institute of Cape Verde

Johnnie Van den Berg: HI All, Johnnie van den Berg from IPM program at North-West University in South Africa. We have a research team with eager post grad students doing FAW research.

USAID Agrilinks: Hi everyone, please do introduce yourself via the chat box here and answer our polls, including the trivia questions!

Chandler Levinson: Hello everyone, we are a group with Dr. Ozias-Akins joining from North America. We are testing wild Arachis species for resistance to FAW. We are so excited to learn more!

Catherine Wangu : hello all, Catherine Wangu from Kenya, working in private sector

Vo vo Htwe: Hello everyone

Vo vo Htwe: My name is Dr Vo Vo Htwe from Myanmar

Grace Tino: Hi everyone, Grace from Uganda,, working with small scale rural farmers.

Ademola Adebowale: hi I'm Adebowale Ademola, Program Director for Kowafresh, a private sector service provider on GAP and GHP Consulting. We have 345,342 farmers our database.

Dickson Kazembe: Hi! I am Dickson Kazembe M&E Specialist local consultant under Malawi MELS

April Thompson - Agrilinks: Welcome everyone! Great to have you on the line!

Regina Eddy, FAW Coordinator: Welcome, everyone! We are so glad that you are able to join us today.

Julie MacCartee (USAID/BFS): Good morning! Please excuse our audio tests as we get set up today.

Evans Saah 2: Hi Everyone

Evans Saah 2: Evans from Ghana

Babikene Rasi: hello Dr. Samuel from DR of Congo

April Thompson - Agrilinks: Welcome, Babikene and Evans! It's great to see such a great turnout from Africa.

Babikene Rasi: hi Dr. Samuel from DR of Congo

J. Camacho: Good morning, afternoon or evening to all.

April Thompson - Agrilinks: Same to you - great morning here in Washington DC.

Sibusiso Msibi: Greetings, Sibusiso from Swaziland

Emilie Aubert: hello! Emilie from Mali

Meshack Panga: Hi I am Meshack Panga, Agric offer

April Thompson - Agrilinks: Salut Emilie!

April Thompson - Agrilinks: Sibusiso and Meshack, welcome!

April Thompson - Agrilinks: We are getting started in five minutes. Do fill out the polls if you haven't already.

Silvanus Mruma 2: Hi Silvanus Mruma from Tanzania

Meshack Panga: Thank you Thom

Vamsidhar Reddy TS: Hi. This is Vamsidhar Reddy from USAID/ India

Dick Tinsley: Dick Tinsley signing in from Colorado

April Thompson - Agrilinks: Welcome Silvanus, Vamsidhar and Dick! All the time zones covered today.

Abraham Muzulu: Hello everyone. I am with World Vision Zimbabwe, implementing a USAID Development Food Security Activity

Regina Eddy, FAW Coordinator: Hi Vamsi, so glad you could join.

April Thompson - Agrilinks: Please do feel free to share your own experiences here managing fall armyworm.

James Woolley: Hello all: I am James Woolley, an agronomist working for USAID Haiti.

Vamsidhar Reddy TS: Hi Regina. Glad to be joining the webinar

Seydou Samake: Hi everyone, joining from USAID West Africa.

Owen OKOKO 2: Hello, Owen from Pointe-Noire, Congo-Brazzaville and there's no USAID agency in my country

Owen OKOKO 2: my audio is good

Kristin DAVIS: Good day from South Africa. I work for IFPRI.

Owen OKOKO 2: Hope we will be emailed the presentation later

ALINE TOLOSA: got audio

Dick Tinsley: Tony is clear

Adam Ahmed - USAID Agrilinks: Thanks Dick

Meshack Panga: Thompson my experience on this pest very little and the pest was serious in this year here in Tanzania and we struggled to control the pest by using range of insecticides but it does not work properly hence causes a lot of losses

Sean McCartney: Sean McCartney - audio is good.

April Thompson - Agrilinks: Hi James! What is the FAW situation in Haiti right now?

Silvanus Mruma 2: There is so much ECHO in the audio!

April Thompson - Agrilinks: Meshack, very challenging situation. I hope you learn some things today that will help in controlling this in Tanzania. Have you signed up for the other two webinars in the series?

Marjatta Eilitta: Hello from Lusaka, Zambia! I am with the Farmer-to-Farmer program for Southern Africa.

Robert Matengula: I am Robert Matengula, Mission Environmental Officer-USAID/Malawi

April Thompson - Agrilinks: Are other people having issues with an echo?

Bob Rabatsky: Hi, Bob Rabatsky in WDC with FTF Partnering for Innovation

Marjatta Eilitta: I have no problem with echo.

Catherine Wangu: I am fine with the sound

JOSH HABIB: Josh Habib, Cadmus Group, Boston and DC

AV Tech: Good morning all. Please hover your mouse over my name if you're having issues and I will attempt to help you

Evans Saah 2: The audio is clear

Christophe Charbon: hearing you very well from Yemen

Claude Nankam: Claude Nankam, Food For The Hungry Washington DC

Meshack Panga: Thompson this is the first time to join you and am expecting to learn more from you guys..

Odreck Mukorera: Odreck Mukorera DFID Zimbabwe

AV Tech: Thanks to those for confirming that things are working from your end!

AV Tech: We'll be starting shortly

Alhassan Abdul Rashid: ok

Harris Ayuk: Greetings from Monrovia, Liberia.. This is CNFA - Cultivating New Frontiers in Agriculture.

April Thompson - Agrilinks: You can call me April, Meschack :)

JULIE ABISGOLD: Hi, my name is Julie Abisgold, IPM specialist with AgDevCo in Africa

Mary Adungosi: clear but breaking

Christophe Charbon: Christophe Charbon FAO Yemen

Carla Tavares: Greetings from Cape Verde

April Thompson - Agrilinks: Hello, Claude, Christophe! Bemvindo, Carla!

Meshack Panga: how do I call you easily pls- Thompson

Isaac Conduah: Hi all, the audio is clear

Charles Davis: Joining from USAID/FFP Washington

Alhassan Abdul Rashid: I can hear clearly

April Thompson - Agrilinks: Oh, I just meant you can use my first name, which is April. :)

Harry Ngoma: Audio has gone off here

Mary Adungosi: Clear now from Kenya

April Thompson - Agrilinks: Welcome, Charles! Thanks for letting us know, Mary.

Meshack Panga: ok, sorry- April

April Thompson - Agrilinks: Do download the files to the left, including the slides for today's presentation.

Mary Beggs: Hello everyone! Mary from Cardno here. I am looking forward to the discussion.

Lewis Kamiri: Lewis Kamiri, USA.

HASSAN ISHAQ IBRAHIM : all clear from Nigeria

Harry Ngoma: Loud and clear from Lusaka

April Thompson - Agrilinks: The first two links are to the next webinars in the series. Hope you will join for the entire series, as they will build on one another.

Regina Eddy, FAW Coordinator: Welcome, Hassan

Aline Rendall Monteiro: Clear from Cabo Verde

Jodi Scheffler: Jodi Scheffler USDA USA

Amer Fayad: Amer Fayad, IPM Innovation Lab, Virginia Tech

Allan Pineda: HI. Allan Pineda joining from Albania.

April Thompson - Agrilinks: Otimo, Aline!

Nic Dexter: Nic Dexter from Land o Lakes, Mozambique

Onehireba Udah: I am Udah and I'm joining from Nigeria.

Clinton Lee: Clinton Lee with myAgro, Bamako, Mali

Keith Metzner: USAID/Malawi

Emily Zobel: Emily Zobel from UME, Maryland, USA

Rangaswamy Muniappan: Muni Muniappan, IPM Innovation Lab

Halima Ouattara-Ayanou: Greetings from the West Africa Mission in Accra - Halima & Catherine

Olivier Allongue: Olivier Allongue with Trees for the Future, USA

Hannalene Du Plessis: Hannalene du Plessis South Africa

Linda Veldhuizen: Hi everyone, this is Linda from Wageningen University in the Netherlands

Michael Budde: Mike Budde USGS FEWS NET

Kristin DAVIS: April, where are the links to the next webinars?

Alhassan Abdul Rashid: Abdul Rashid from ADVANCE project, Ghana

Isaac Conduah: Hi all, My Name is Isaac Conduah, USAID ADVANCE Project

Emmanuel Dormon: my name is Emmanuel, COP for the ADVANCE project in Ghana

April Thompson - Agrilinks: Ah, great to see ADVANCE here! I used to work for TechnoServe and we were a partner on that project. Say hello to my old colleagues there!

john bowman: John Bowman: USAID/BFS; USAID IPM Innovation Lab

April Thompson - Agrilinks: Hey John! Thanks for joining.

Audace Mpoziriniga: Audace Mpoziriniga- the sound is cut momentarily

FREJUS SODEDJI: Hello everyone! I am FREJUS SODEDJI a research associate in plant breeding at the University of Abomey-calavi (Benin republic). I do research on maize, cowpea and some underutilized crops. I am joining this webinar from Ivory Coast.

Julie MacCartee (USAID/BFS): Thanks so much for joining! This is a great crowd. Please share your questions about FAW technologies at any time.

Maurice Ogutu: Maurice Ogutu: USAID/Liberia

April Thompson - Agrilinks: Ah, super! Frejus, je connais bien votre universite ... j'adore le Benin :)

AV Tech: Currently, everything is working. If you are having issues, don't worry, we are recording everything and we will share out recordings (screencast and audio file) in about a week.

April Thompson - Agrilinks: Welcome, Maurice!

AV Tech: You can also hover your mouse over my name (AV Tech) and I will try to troubleshoot any issues you may be having

Jorge Oliveira: orge Oliveira is on line

Stephen Justin Ecaat: Ecaat Stephen- Farm radio International -Uganda. Happy to be here

April Thompson - Agrilinks: You can click on the box with the four arrows at the top to make the presentation full screen.

Regina Eddy, FAW Coordinator: Welcome, Jorge and Stephen. Thanks for joining

April Thompson - Agrilinks: Great, Stephen! Are you all using rural radio to spread the word on FAW?

FREJUS SODEDJI: @ Thompson, J' en suis ravi

Stephen Justin Ecaat: Yes April. We are using Radio to exactly that

April Thompson - Agrilinks: That's great - there is also a video tool in the links below. It would be great to find ways to disseminate this as well!

Stephen Justin Ecaat: Great thanks -April

Faith Tarr: Faith Tarr, USAID Ethiopia STIP advisor joining now, hello to all

April Thompson - Agrilinks: Good to see you here, Faith!

Bun Saborn : Interested with IPM

April Thompson - Agrilinks: Feel free to type any questions or comments for the presenters here, everyone. We will collect questions to address at the end.

Regina Eddy, FAW Coordinator: Bun, we will share a link to our IPM Guide for FAW Management at the end. It is stored in our Agrilinks Library

JULIE ABISGOLD: Unlike the Americas, there are very few natural enemies to FAW in Africa yet as it is a new pest. It takes time for the ecosystem to respond to a new pest and exert some control

AV Tech: Click on the four arrows at the top of the presentation window to expand the graphic

Rangaswamy Muniappan: How about crops other than maize attacked by FAW

April Thompson - Agrilinks: Very true, Julie... it's similar to how invasive plant species can quickly disrupt an ecosystem. Unfortunately FAW has also come to Asia...

April Thompson - Agrilinks: Good question, Rangaswamy - we will address that later.

Regina Eddy, FAW Coordinator: Hi Muni, Given FAW has a strong preference for maize, we are socializing approaches for control on maize first. Of course, there is a great deal of nuance that is vital to understand over time

Claude Nankam: SO still not yet very good resistant non-GM varieties?

April Thompson - Agrilinks: Do download the files to the left and go to the link at the bottom left with tools that will go into far more depth than we're able to today.

JULIE ABISGOLD: I am seeing increases in natural predation and parasitism of FAW in Africa but not enough to exert significant levels of control

Keegan Kautzky: Keegan Kautzky, World Food Prize Foundation

April Thompson - Agrilinks: Keegan, so great to have you here!

JOSH HABIB: Can we use information from this presentation in reports as long as we credit USAID FTF and Agrilinks?

Regina Eddy, FAW Coordinator: Claude, CIMMYT is conducting trials to determine whether non-GM varieties offer resistance. Stay tuned for outcomes.

April Thompson - Agrilinks: Absolutely, Josh! We would love you to share the information.

Mantaoleng Tlali: Mantaoleng Tlali Lesotho.

April Thompson - Agrilinks: Pesticides will be the focus of the third webinar in this series, two weeks from today, so sign up for that as well!

JULIE ABISGOLD: the issue of registration in African countries is an important consideration

April Thompson - Agrilinks: Are people using some of these approaches in their countries?

April Thompson - Agrilinks: Link to IPM guide: <https://www.agrilinks.org/post/fall-armyworm-africa-guide-integrated-pest-management>

Bob Rabatsky: How do you plan to promote and distribute the 6-10 efficacious and low risk pesticides to smallholders in Africa?

Rangaswamy Muniappan: Do you follow the PERSUAP approved by BFS, USAID?

April Thompson - Agrilinks: The table is also in the file downloads.

Mantaoleng Tlali: Thanks for the summary.

April Thompson - Agrilinks: Thanks for questions Bob and Rangaswamy. We will address questions at the end.

Evans Saah 2: Which measures have been taken to manage the most hazardous means of controlling FAW?

Rangaswamy Muniappan: FAW has been recently reported from India.

April Thompson - Agrilinks: Rangaswamy, I did read this - very sorry to hear this! At least you can benefit from early detection.

April Thompson - Agrilinks: And build on what has been learned elsewhere.

Claude Nankam: Thanks Regina. Any idea of how far they are with the research? When will the first promising varieties be available for test at farmer's fields?

Nicolas UWITONZE: Good morning and good afternoon everybody, depending in the location. I am Nicolas from Rwanda, working with Feed the Future Rwanda Hinga Weze Activity

Owen OKOKO 2: How might we work to spread the word to rural farmers who technology penetration is still low?

April Thompson - Agrilinks: Welcome Nicolas!

Claude Nankam: We lost Dr. Antonio

Garmonyou A. Sam: How do we as Countries in Sub-Sahara Africa domesticate these approaches for an effective management of the FAW?

April Thompson - Agrilinks: He is still on the line - it might be your connection.

Claude Nankam: ok checking thanks

Mantaoleng Tlali: Lesotho has not experience FAW, but because of its presence in RSA, we are sure to experience it due to our similar climatic conditions. Another reason is that, we have experienced African Armyworm in 2013/2014 cropping season, hence a possibility of FAW.

Patrice Hakizimana: Hello! Patrice Hakizimana, FAW POC, USAID/Rwanda

debby adebowale: Is there any existing step-down training tools, capacity experts like us can use to effectively communicate to small holder farmers who constitutes major population of West African Farmers?

April Thompson - Agrilinks: Mantaoleng - yes, the pest knows no borders. Important to be collaborating in the region to stem the spread!

April Thompson - Agrilinks: Bienvenue Patrice!

April Thompson - Agrilinks: Thanks for the question, Debby. Keep the questions coming!

Phil Steffen: Does Dr. Corsetti Purcino have any second thoughts about the impact of large-scale monoculture on the environment, especially water use? (I could ask the same question of center-pivot irrigated crops in the Plains States in the US.)

Nicolas UWITONZE: Interesting point @ Dr Antonio, Maize production has increased despite the presence of FAW, during the last few decades!" # farmers in Brazil have known how to control FAW and technologies have been developed.

Mark Doyle: Has anyone looked at how the Brazilian system of crop intensification might translate into regions with similar climates in Africa and elsewhere?

Stella Siegel: what does it do to the soil when you intensify like that? What's the need for fertilizer and what is environmental impact? the sound is continuously cut. Audace/Burundi

Paul Allertz: Question would be if the introduction of a second corn season is not increasing the possibilities of pests and diseases?

April Thompson - Agrilinks: Desole Audace. You will be able to access the recording in a few weeks as well as a transcript.

Halima Ouattara-Ayanou: Do the examples given by Dr Purcino regarding the safrinha 2nd crop and having fields in production 95% of the year applicable to smallholder farmers?

Nicolas UWITONZE: Good point @ Dr Antonio: # no single solution to control FAW, as the pests usually creates resistance

Harry Ngoma: Does the second crop planted after the rainy season crop depend on irrigation? Or does Brazil have two rainfall seasons per year?

Linda Veldhuizen: Does crop rotation in combination with maize reduce risk of FAW infestation? N2Africa project might be relevant in SSA context: <http://www.n2africa.org/>

Mantaoleng Tlali: in Lesotho, having fields in production 95% of the year may work, if our research can develop sort season varieties to have harvest within 3-4 months.

Linda Veldhuizen: soybean-maize crop rotation I mean

Dickson Kazembe: It appears that this is capital intensive so for the resource poor countries whose agriculture depends on small holder farmer (over 90%) could adopt this? Secondly sub Saharan Africa mostly use the rainy season for crop production, how could the soy and maize rotating within a season can be achieved?

JULIE ABISGOLD: yes it does as it lowers the number of FAW coming from the soil

Patrice Hakizimana: Has the second season enough rain to meet maize water requirements or you avail supplementary irrigation to the crop?

April Thompson - Agrilinks: FYI Claude, Regina said she has consulted our lead scientist and breeding specialist, Joe Huesing. We should have results, improved varieties, in two years - perhaps sooner.

Regina Eddy, FAW Coordinator: Evans, managing risk related to use of hazardous pesticides is an important investment area. Under Feed the Future, we aim to contribute to this outcome. Webinar #3 will share some of our strategies to build capacity to understand pesticide risk. However, a truly impactful response will require coordinated effort by many partners.

Charles Davis: What is the effect on soil fertility and how much does this rely on government subsidies for research or inputs?

Lewis Kamiri: African countries working on innovations in agriculture. Will take time.

Carla Tavares: thank you Mr. Antonio

Bronwyn Irwin: I'm curious to know of successful examples of introducing the Brazilian approach to FAW in a smallholder context in Africa.

Mantaoleng Tlali: thanks Thomson for the promise of improved varieties, I am looking forward to that.

April Thompson - Agrilinks: Yes, they can't come soon enough!

Carla Tavares: thank you Mr. Antonio for your presentation, very interesting

Owen OKOKO 2: More examples have been given for macro farmers and majorities of crops and legume son the continent are held by microfarmers. How might we help to better the danger of FAW and how might we specifically help to address the issues. Greetings from Pointe-Noire

Sean McCartney: The example from Brazil deals with economies of scale (i.e. large tracks of land) while a lot of subsistence farmers in sub-Saharan Africa don't have the luxury of large areas with monocropping. How effective are these approaches for smallholder farmers?

Halima Ouattara-Ayanou: Will these webinars be made available in French?

Johnnie Van deen Berg: We discovered the egg parasitoid (*Telenomus remus*) in South Africa. It could have been here before FAW arrived. It is well known in the Americas as important Biocontrol agent.

Patrice Hakizimana: Have you been successful to combine early maturing, FAW resistance and high-yield traits in those maize varieties grown in Brazil?

Harris Ayuk: Question from CNFA Liberia: Can the most improved and pest resistant corn feed grow under tropical weather (for example in Liberia)?

Miriam Alonso Camarero: There are biocontrol management like the Push-Pull System developed by the ICIPE with very good results in Kenya.

April Thompson - Agrilinks: Halima, malheureusement c'est pas possible mais il y aura une transcription en anglais, c'est possible d'essayer de le traduire a travers Google Translate

Nicolas UWITONZE: Good point by Joseph concerning the FAW PERSUAP. A question, though: Has this been updated recently?

Garmonyou A. Sam: A couple of Months ago, there was another Spodoptera species that was reported on Cassava, could you say a little about that, most especially about the feeding and reproduction habits. Cassava is the second staple food in Liberia. We are now experiencing the effects of the FAW on rice and maize. How do we approach this on?

Owen OKOKO 2: Please drop contacts from USAID Agrilinks to follow up with questions

Mantaoleng Tlali: Cordial thanks to all presenters, moderators and the whole team that has made this discussion possible. keep up the good work. and

Yeneneh Belayneh: Tp Dr. Antonio: Was there any sort of direct assistance or subsidy that the GoB provided to small-holder farmers at the start of the technology adaption?

Paul Allertz: There are ICT4D tools available; like videos from access agriculture (see their website)

Onehireba Udah: I'm concerned that without deliberate and consistent implementation of policies, these ideas may be very difficult to achieve. Is there a way smallholder farmers can be helped?

Merrill Anne Jordan: You can use ICTs to promote these new technologies. And the New Alliance ICT Extension Challenge Fund has been engaging smallholder farmers through these tools in 6 countries, the definitely mobile penetration and technology literacy are challenging in this context.

Onehireba Udah: seems like my question has just been asked.

April Thompson - Agrilinks: Hi all, moving to some end polls now - we have about 10 minutes left

Paul Allertz: Why is there no mention of a early warning system that can be organized at the community level?

Carla Tavares: How is effective need control

Garmonyou A. Sam: The proposed topics to be presented later in August and September are very important and welcome. Thanks

Harris Ayuk: April/Julie, What growth stage is most appropriate/efficient to control FAW?

April Thompson - Agrilinks: Thanks, Garmony! Please do stay tuned.

Linda Veldhuizen: If you want to contribute your knowledge or solutions to FAW in Africa, then please sign up for the e-conference 'Responding to FAW in Africa'- <http://bitly.com/2018FAW>

April Thompson - Agrilinks: September will be a focus on ag extension on Agrilinks - very relevant to the management of FAW. I encourage everyone to share their experiences on Agrilinks!

April Thompson - Agrilinks: Thanks, Linda! Please post that as an event on Agrilinks

Linda Veldhuizen: Great April, I'll do that tomorrow

Johnnie Van den Berg: Bt maize suppresses FAW numbers in South Africa.

JULIE ABISGOLD: what is the mechanism of FAW maize resistance in the Americas?

April Thompson - Agrilinks: You'll just need to create an Agrilinks account if you don't already have one, but only takes a minute. You can reach out to me at agrilinks@agrilinks.org you have any issues.

April Thompson - Agrilinks: Register for next week's webinar here: <https://www.agrilinks.org/event/fall-armyworm-dissemination-tools-usaid>

Harris Ayuk: Thank you Joe!

Mantaoleng Tlali: thanks Proff. Van den Berg for the information.

Owen OKOKO 2: Where can we access the recording ?

Yeneneh Belayneh: Dr. Antonio: What do you think are the most important lessons that policy makers and technicians in developing countries may need learn from EMBRAPA regarding the challenges EMPRAPA may have faced during the introduction of the new technologies and their adaption by small-holder farmers?

April Thompson - Agrilinks: Owen, you will get an email within a few weeks with link to the recording, transcript, etc.

April Thompson - Agrilinks: It will also be available on the event page.

Owen OKOKO 2: Thanks April

Aline Rendall Monteiro: Thanks for the answer

Mantaoleng Tlali: good bye everyone, I am still at work. I cannot miss the next webinar.

April Thompson - Agrilinks: Thanks for coming, Mantaoleng!

FREJUS SODEDJI: How sustainable is the source of resistance among the maize germplasm to rely on? Do you have any successful stories of use of the resistant FAW maize varieties in Brazil?

Johnbosco Birenge: For how long can I use crop rotation especially engaging legumes rather than cereal crops to control the fall army worm? I work with close to 10,000 smallholders and need practical solutions

Harris Ayuk: Thank you April.

Adam Ahmed - USAID Agrilinks: Thank you all for joining us for this webinar!

Stephen Justin Ecaat: Thank you April

April Thompson - Agrilinks: Thanks for all the great engagement on this important topic!

AV Tech: <https://www.agrilinks.org/event/fall-armyworm-dissemination-tools-usaid>

Adam Ahmed - USAID Agrilinks: Come back and see us next week.

Harris Ayuk: Thank you Adam.

J. Camacho: Thank you speakers, hosts and all. Have a wonderful morning, afternoon or evening to everyone

Stephen Justin Ecaat: see you next week

Owen OKOKO 2: Thanks and campaigning to bring USAID back in Congo-Brazzaville

Nicolas UWITONZE: Thank you, It was pleasure

April Thompson - Agrilinks: Same time, next week!

Owen OKOKO 2: Thanks

Yeneneh Belayneh: Great presentations by Joe and Antonil

Mary Beggs: Thank you!

Bronwyn Irwin: Thank you

Yeneneh Belayneh: Great presentations, thx

Elizabeth Tavares: Very good

Carla Tavares: Thank you!

Aline Rendall Monteiro: Thanks

Julie MacCartee (USAID/BFS): Thank you for attending!