



**MINUTES OF THE FIRST MEETING OF THE IMPLEMENTATION AND
CAPACITY DEVELOPMENT COMMITTEE (IC) TEAM ON
*FUSARIUM OXYSPORUM F. SP. CUBENSE TROPICAL RACE 4 (FOC
TR4)***

30 September 2021 at 11:00 a.m. to 02:00 p.m. (Central European Summer Time, UTC+2)

1. Opening of the meeting

1.1. Opening remarks by IPPC Secretariat

- [1] Brent LARSON, Unit lead of the Implementation and Facilitation Unit, presented opening remarks that introduced the background of the establishment of the IC Team on Foc TR4 and the anticipated contribution of each expert.

1.2. Welcoming remarks by the IC Lead

- [2] Magda GONZALEZ ARROYO, Lead of the Implementation and Capacity Development Committee (IC) welcomed experts and encouraged active discussion to prevent the spread of Foc TR4.

1.3. Introduction of the TR4 IC Team members: experts background and what they expect from the group

- [3] The IC Team members on Foc TR4 introduced themselves, including their positions and expertise.

2. Meeting Arrangements and administrative matters

2.1. Selection of the Chair

- [4] Magda GONZALEZ ARROYO was selected as Chair for this meeting. The Chair will rotate in each meeting.

2.2. Selection of the Rapporteur

- [5] Monica GALLO was selected as rapporteur.

2.3. List of participants

- [6] The participant's list is available in Appendix 2 of this report.

2.4. Adoption of the Agenda

- [7] The IC Team on Foc TR4 adopted the agenda attached to this report as Appendix 1.

3. Implementation and Capacity Development Committee (IC)

3.1. Overview of the IC and questions

- [8] The IC Lead explained the roles, membership, and meetings of the IC as well as primary Implementation and Capacity Development activities such as developing Guides and Training Materials, National Reporting Obligations, the Phytosanitary Capacity Evaluation, the Sea Container Task Force, e-Commerce, the Implementation Review & Support System and the Global plant health surveillance programme.

3.2. Specific tasks of the IC Team on Foc TR4

- [9] The Secretariat went through the ToR of the IC Team on Foc TR4. The team's main tasks are developing a brief project plan, compiling, and assessing existing resources on Foc TR4 and developing relevant global prevention, preparedness, and response materials. The Secretariat highlighted the importance of developing global prevention resources without duplication with existing resources.

4. IC Team on Foc TR4 updates

- [10] Each Team member presented their updates on the activities their institution performs on Foc TR4. Presentations are available in the IPP1.
- [11] The representative from the Queensland Department of Agriculture and Fisheries presented the Foc TR4 Program in Queensland, Australia. She explained the current situation, control, and containment in Queensland. She also mentioned the relationship with the industry to manage Foc TR4. She explained that Australian authorities need to regulate Foc TR4, but pest management roles will have to be transitioned to the industry as surveillance requires resources.
- [12] The representative from the Australian Department of Agriculture, Water, and Environment presented the International Plant Health Program of Pacific countries. He introduced surveillance activities programs in the Pacific countries and his involvement in the Regional Plant Protection activities in Asia and the Pacific. He also provided information on the FAO/IPPC Fall Armyworm Technical Working Group (FAW TWG) activities. The experience gained on FAW TWG can help international prevention control for Foc TR4, such as early detection and pest risk alert and response system.
- [13] The representative from Alliance Bioversity International and CIAT presented information on Foc TR4, including symptoms, sampling, diagnostic process, contingency plans, networking, training, and risk communication. He explained the connection with the field and laboratory to implement diagnostic and routine diagnostic and emergency diagnostic. He presented contingency plans implemented in Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA) countries. He highlighted the importance of the connection between RPPOs in Latin America and other organizations.
- [14] The representative from COLEACP presented the Capacity development activities of COLEACP in Foc TR4 in Africa, funded by EU. She explained that COLEACP is conducting raising awareness activities and training of Foc TR4 in African countries. She highlighted the importance of this training to prevent the spread of Foc TR4 because of some African countries export bananas to Latin American countries.
- [15] The representative from the Agencia Ecuatoriana de Control y Regulación Fito y Zoosanitaria (AGROCALIDAD) presented the TR4 situation in Ecuador, including information on banana production and export as well as potential economic impacts of TR4. She explained the regulatory framework, contingency plan, and TR4 prevention activities set in the countries in cooperation with FAO and OIRSA. She was concerned about the difficulty of communication with the private sector in Ecuador, as Ecuador has 16,000 banana producers.
- [16] The representative from the Kenya Plant Health Inspectorate Service (KEPHIS) presented the situation of Fusarium wilt in Kenya. He explained TR4 had not been detected in Kenya, but TR4 is a high alert pest as it was detected in Mozambique. He mentioned the high-risk areas to prevent the introduction of TR4, especially border areas.
- [17] The representative from the Lebanese Agricultural Research Institute (LARI) presented the situation of TR4 in Lebanon. The first report was made in 2013, but there were no contingency

¹ <https://www.ippc.int/en/core-activities/capacity-development/capacity-development-committee/ic-sub-group/ic-team-on-tropical-race-4-tr4/>

plans and containment measures to prevent the spread of TR4. He highlighted the banana production sector gap, including lack of awareness, appropriate phytosanitary measures, absence of periodic surveys, and bad agricultural practices. He also introduced the FAO project in Lebanon to manage TR4.

- [18] The representative from the Wageningen University presented considerations on the TR4 molecular diagnostics (PCR, LAMP, LFD) and the phylogenetic relationship of banana-associated Fusarium species. He mentioned the engagement of industries and stakeholders for surveillance. He explained that molecular analysis allows identifying the origin of the strain. He emphasized the importance of sharing data for sequencing.

5. IPPC Secretariat updates

5.1. IPPC Phytosanitary tools

- [19] The Secretariat presented current existing phytosanitary guides and training materials developed under the auspices of the IPPC Secretariat that can be used for TR4 capacity development activities.

5.2. Compilation of technical resources on TR4 and IPP component pages and discussion on missing global materials

- [20] The Secretariat introduced the submitted resources under the call for TR4 technical phytosanitary resources and explained the IC criteria and procedures² to review contributed resources. The IPPC Secretariat received twelve resources from Australia, Costa Rica, Mexico, the Netherlands, and Turkey.

- [21] The IC Team on TR4 *agreed*:

- (1) *Review* the contributed resources³ and include the FAO and global resources compiled by the Secretariat. The list of resources is available in Appendix 3
- (2) Each member will identify the resources they want to review and include their name in the dedicated table (Deadline October 7, 2021).
- (3) The Secretariat will provide a template to assess the technical resources.
- (4) The deadline to provide the review is October 29, 2021.

- [22] The team also confirmed that they would consider developing any technical resources to fill the area gap once reviewing the contributed resources.

- [23] The IC Lead agreed that a report of review results would be submitted to the IC Team on Contributed Resources for their confirmation.

5.3. Questionnaire to assess preparedness for COMESA countries

- [24] The Secretariat introduced the questionnaire developed for COMESA countries to assess preparedness for pest outbreak response. This activity is conducted in the framework of the COMESA project⁴.

² [Criteria and procedures for reviewing and approving contributed phytosanitary resources for posting on the IPP](#)

³ Each resource should be reviewed by at least 2 persons, preferably 3

⁴ <https://www.ippc.int/en/core-activities/capacity-development/projects-on-implementation-and-capacity-development/comesa-trade-facilitation-programme/>

- [25] The IC Team on TR4 agreed to provide feedback on the questionnaire through the document available in MS Team by October 29, 2021.

6. Any Other Business

- [26] No other business was discussed.

7. Date for the next meeting

- [27] The IC Team on TR4 will hold its next meeting on November 8, 2021. The group agreed to meet Mondays of the second week of every month.

8. Concluding Remarks

- [28] The Chairperson and the Secretariat thanked all the experts for their participation, and the meeting was closed.

Appendix 1

Meeting Agenda

The First Meeting of the Implementation and Capacity Development Committee (IC) Team on *Fusarium oxysporum* f. sp. cubense Tropical Race 4 (TR4)

30 September 2021 (11:00 am – 2:00 pm), Rome Time
Teleconference

<https://fao.zoom.us/j/92766591864?from=addon>

Passcode: 06296820

PROVISIONAL Agenda

Updated 2021-09-06

AGENDA ITEM	Duration (minutes)	DOCUMENT NO.	PRESENTER
1	Opening of the Meeting	--	
1.1	Opening remarks	-	Brent LARSON/Sarah BRUNEL
1.2	Welcoming remarks by the IC Lead	-	Magda GONZALEZ ARROYO
1.3	Introduction of the TR4 IC Team members: experts background and what they expect from the group (2' each)	-	All members
2	Meeting Arrangements		
2.1	Selection of the Chair of the meeting	-	All members
2.2	Selection of rapporteur of the meeting	-	All members
2.4	Participant's list	VM01_05_TR4_2021 Participant list	IPPC Secretariat
2.5	Adoption of the Agenda	VM01_01_TR4_2021_ Sept_Agenda_2021- 08-12	All members
3	Implementation and Capacity Development Committee (IC)		
3.1	Overview of the IC and questions	Oral presentation	Magda GONZALEZ ARROYO
3.2	Specific tasks of the IC Team on TR4	VM01_02_TR4_2021_ Sept_Terms_of_Refere nce_for_an_IC_Team_ on_Fusarium_2021-05- 14	Camilo BELTRAN MONTOYA
4	IC team on TR4 updates		
4.1	Update on the activities performed on TR4 by each team member (7' minutes each with a PowerPoint presentation) ⁵	Oral presentations	All members
5	IPPC Secretariat updates		
5.1	IPPC Phytosanitary tools	Oral presentation	Camilo BELTRAN MONTOYA

⁵ Please provide a max of 5 slides presentation including your activities can contribute to the IC Team

AGENDA ITEM		Duration (minutes)	DOCUMENT NO.	PRESENTER
5.2	Compilation of technical resources on TR4 and IPP component pages and discussion on missing global materials	20'	VM01_03_TR4_2021_ Sept_resources	Camilo BELTRAN MONTOYA
5.3	Questionnaire to assess preparedness for COMESA countries	10'	VM01_04_TR4_2021_ Sept_questionnaire	Camilo BELTRAN MONTOYA
4	Workplan for the IC Team on TR4			
4.1	Workplan agreement and assignation of responsibilities.	20'		All members
5	Any Other Business	5'		
6	Date for the Next Meeting			
7	Closure of the meeting			

Appendix 2

PARTICIPANTS LIST

Region/ Role	Name, mailing, address, telephone	Email address	Attending
Member (IC Representative)	Mr Chris DALE	chris.dale@agriculture.gov.au ;	+
Member (RPPO and International Organization)	Mr Miguel Angel DITA RODRIGUEZ	m.dita@cgiar.org	+
Member (Asia and pacific)	Ms Rhiannon EVANS	rhiannonevans19@gmail.com Rhiannon.Evans@daf.qld.gov.au	+
Member (Africa)	Mr Sospeter Gachuhi GACHAMBA	sgachamba@kephis.org ; gachuhisos@gmail.com	+
Member (Latin America and the Caribbean)	Ms Monica GALLO LARA	magallolara@gmail.com ; monica.gallo@agrocalidad.gob.ec ;	+
Member (IC Lead)	Ms Magda GONZALEZ ARROYO	mgonzalez@sfe.go.cr ;	+
Member (Near-East and North Africa)	Mr WASSIM HABIB	wassim.f.habib@gmail.com ; whabib@lari.gov.lb ;	+
Member (Academia)	Mr Gert KEMA	gert.kema@wur.nl ;	+
Member (Academia)	Mr Luis Fernando PÉREZ VICENTE	luis.perezvicente@live.com ; perezvicente@inisav.cu ;	-
Member (International Organization)	Ms Morag WEBB DE GONZALES	morag.webb@coleacp.org ;	+
IPPC Secretariat	Natsumi YAMADA	Natsumi.Yamada@fao.org	+
IPPC Secretariat	Mr Camilo BELTRAN MONTOYA	Camilo.BeltranMontoya@fao.org	+
IPPC Secretariat	Ms Sarah BRUNEL	sarah.Brunel@fao.org	+
IPPC Secretariat	Mr Brent LARSON	Brent.Larson@fao.org	+

Appendix 3

Call of phytosanitary resources on TR4 - contributed resources

Name of tool	Brief Description	Country/Region	Source
Poster: Let's prevent the worst enemy of bananas from reaching the country	General warning and some information about the pest.	Costa Rica	http://www.sfe.go.cr/DocsFocR4TSFE/artefiche1.pdf
Poster: Description of symptoms	Description of symptoms (Including photographs)	Costa Rica	http://www.sfe.go.cr/DocsFocR4TSFE/artefiche%20afiche%202.pdf
Poster: Biosafety measures	Biosafety measures	Costa Rica	http://www.sfe.go.cr/DocsFocR4TSFE/artefiche3.pdf
Brochure: Do not bring any seeds, plants, leaves, or plant fiber staples	Recommendations for travelers	Costa Rica	http://www.sfe.go.cr/DocsFocR4TSFE/artefichebrochure1.pdf
Video: <i>Fusarium oxysporum</i> f sp c cubense TR4	A detailed description of the pest	Costa Rica	https://www.youtube.com/watch?v=JGXQx512QIE&t=61s
Video: Biosafety Measures for the prevention of Foc TR4	Biosafety measures	Costa Rica	https://www.youtube.com/watch?v=FCISKK51n6M
Field data system for biosecurity operations (private company in Australia)	Customizable, map-driven data systems for biosecurity. Used for many applications, including biosecurity operations in Australian plant industries – bananas, sugarcane, mangoes, avocados	Australia	https://youtu.be/kkAdiwiP8fs
Surveillance field guide v1.0	TR4 Surveillance field guide	Australia	Access clicking here
Phytosanitary resources	Excel document containing a list of phytosanitary technical resources on TR4	Australia	Access clicking here
Diagnostic of Foc TR4 with Real-Time PCR, a complete overview from sample collection to results interpretation	This document presents an overview of the diagnostic of <i>Fusarium oxysporum</i> f. sp. <i>Cubense</i> tropical race 4 (Foc TR4) pathogenic agents responsible for Panama Disease via Real-Time PCR using ClearDetections diagnostic products for Panama Disease	Netherlands	https://www.cleardetections.com/diagnosticof-tr4-via-real-time-pcr-with-results-interpretation/
Protocolo de Diagnóstico: <i>Fusarium oxysporum</i> f. sp. <i>cubense</i> Raza 4 Tropical (Marchitez por Foc R4T)	The document compiles the methods for detection and diagnosis of <i>Fusarium</i> wilt of banana <i>Fusarium oxysporum</i> f. sp. <i>cubense</i> R4T (Foc R4T).	Mexico	Access clicking here

Name of tool	Brief Description	Country/Region	Source
First Report of <i>Fusarium oxysporum</i> f. sp. <i>cubense</i> Race 4 Causing Fusarium Wilt Disease of Banana in Turkey	During a survey of banana greenhouses in Alanya, Anamur, and Gazipasa cities along the Mediterranean coast, plants showing severe wilt symptoms and collapse were detected in March 2018.	Turkey	https://doi.org/10.1094/PDIS-09-19-1881-PDN
Technical guidelines for the safe movement of Musa germplasm	Procedures for minimizing the risk of pest introductions due to the movement of germplasm for research, crop improvement, plant breeding, exploration, or conservation.	Global	https://agritrop.cirad.fr/579127/1/Technical_guidelines_SafeMovement_web%28Published_Version%29.pdf
TR4 Global Network	Tool box	Global	http://www.fao.org/tr4gn/resources/en/
Preventing the spread and introduction of banana fusarium wilt disease Tropical race 4 (TR4)	Prevention – Guide for travelers	Global	http://www.fao.org/documents/card/en/c/CA7590EN/
Technical Manual Prevention and diagnostic of Fusarium Wilt (Panama disease) of banana caused by <i>Fusarium oxysporum</i> f. sp. <i>cubense</i> Tropical Race 4 (TR4)	Prevention and diagnostic	Global	http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/caribbeantr4/13ManualFusarium.pdf