

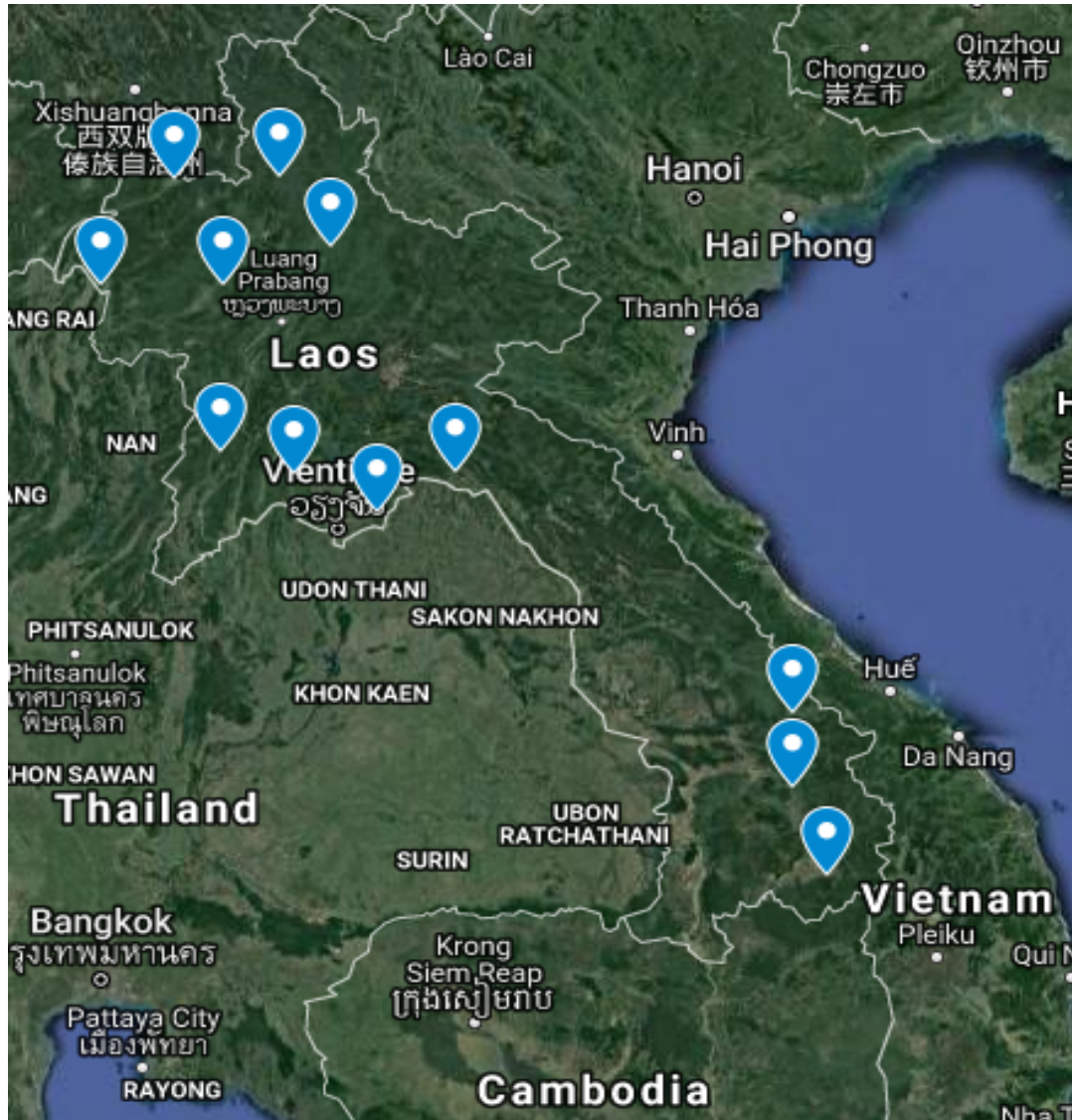
**Panama Disease in Lao PDR, spread and response  
(The ASEAN Diagnosticians Forum which will take place in Bangkok,  
Thailand, 20-21 August 2019)**



Plant Protection Centre,  
Department of Agriculture, MAFF, Laos



# 1. Background



- Banana areas estimate in 2017 was 19,811 ha and estimate production for export 827,177 ton in 2017
- Areas under Cavendish variety is 19,558.18 ha (DOA, November, 2018) that grow in 12 provinces
- Variety planted ranking for popularity are Cavendish, Khai, Num, Hom and Thany varieties
- Source of planting materials are from China, Thailand, Vietnam and Philippine

# 1. Background



- Panama disease caused by *Fusarium oxysporum* f. sp. *cubense* tropical race 4 (VCG 01213/16) is a serious pest of banana and can have a high impact on yield and found in North of Laos in 2016.
- Banana Foc TR4 disease is big problem for banana farm some farmers they lose their framers and some framers change to new crop (Sugar can, maize, mango, been etc.) The export value of bananas is expected to slide down.



# 1. Background

Description of banana Foc TR4 disease in the country and potential incursion



February 2017



# 1. Background

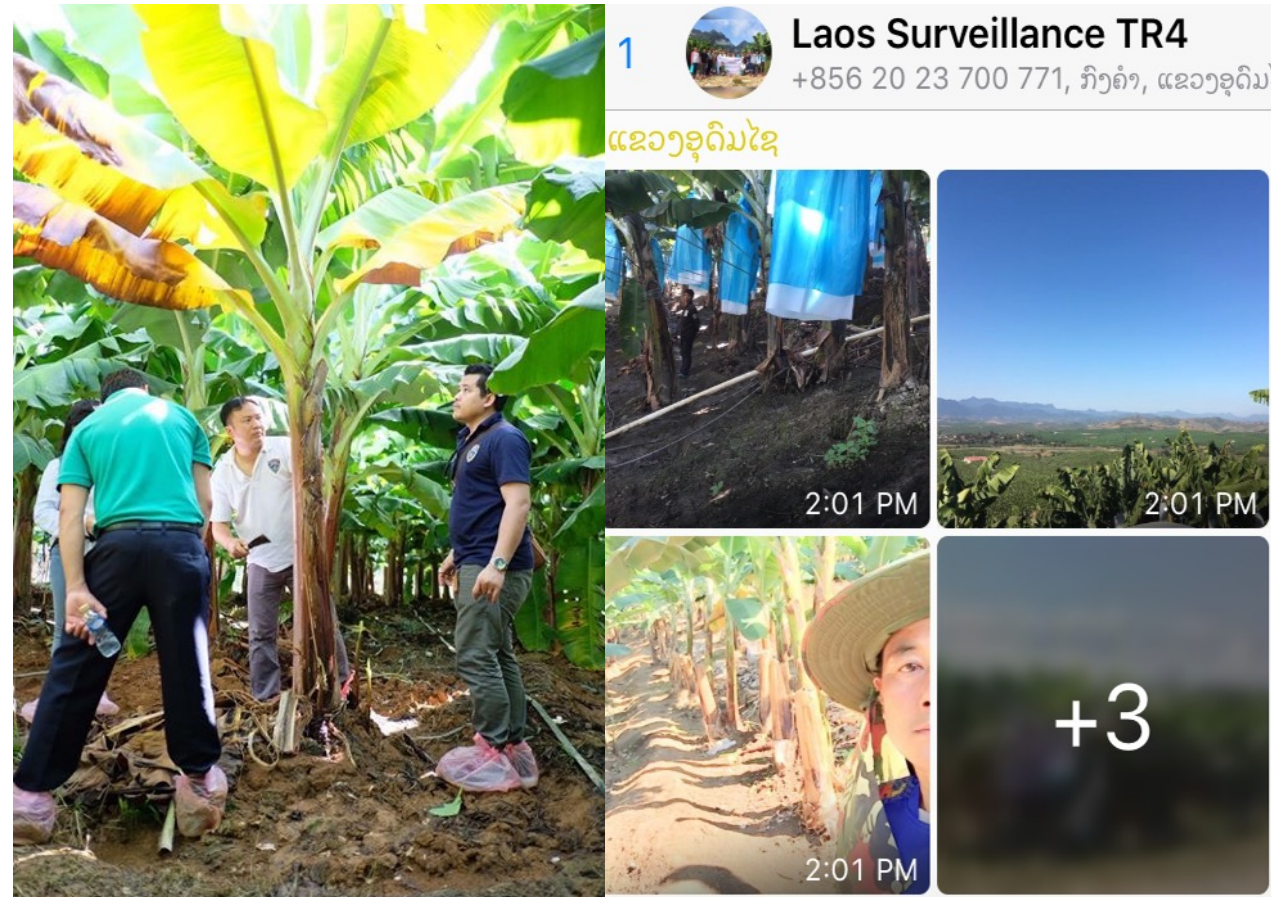
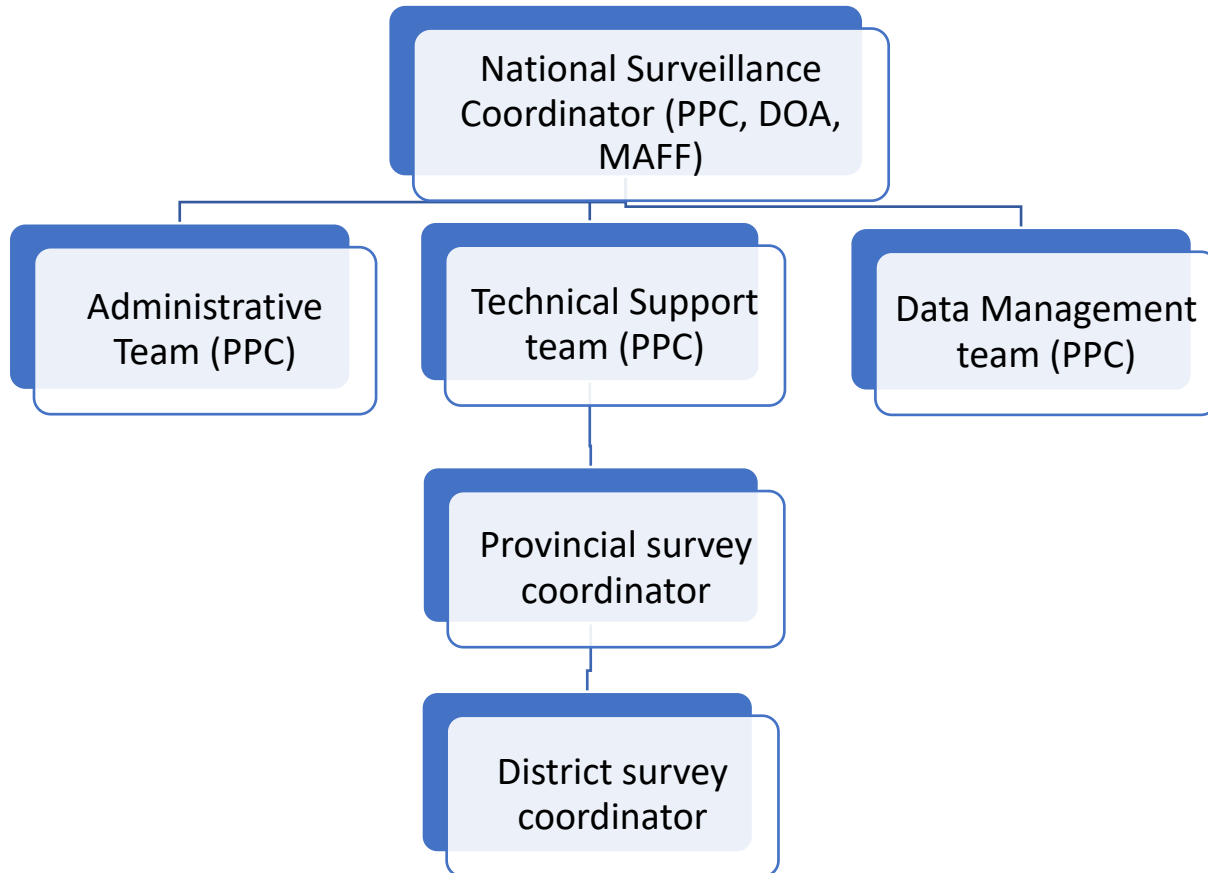
Description of banana Foc TR4 disease in the country and potential incursion



July 2019

## 2. Survey Foc TR4 in Laos

- The workshop on Capacity Development in Surveillance of banana Fusarium Wilt disease by using P'Tracker and We set up team surveillance.





### 3. Identification

- Identification of Foc TR4 by morphology and molecular identification.

Spore of FOC

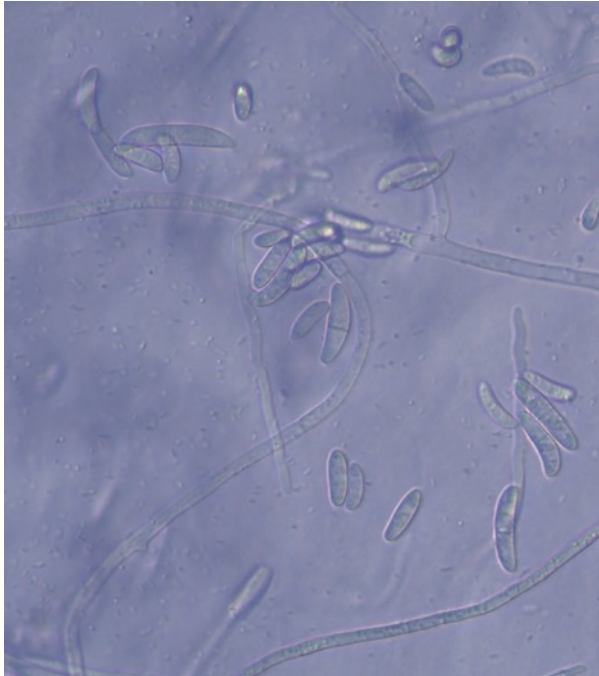
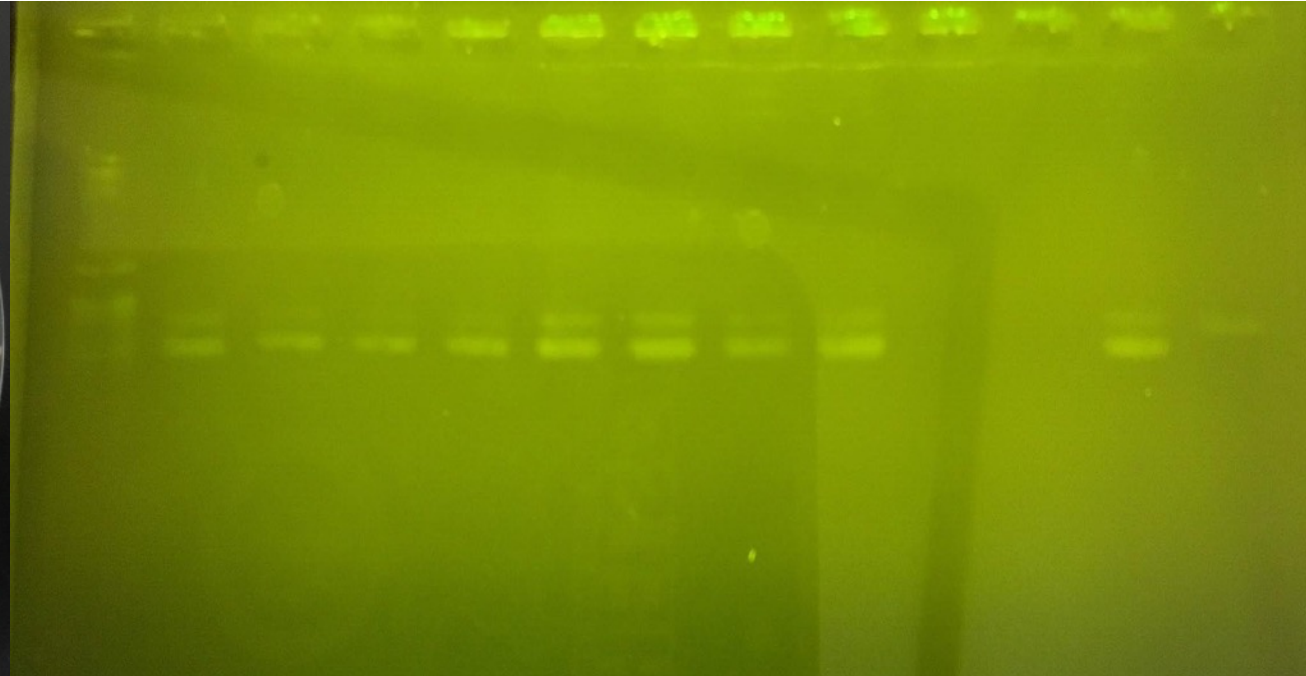
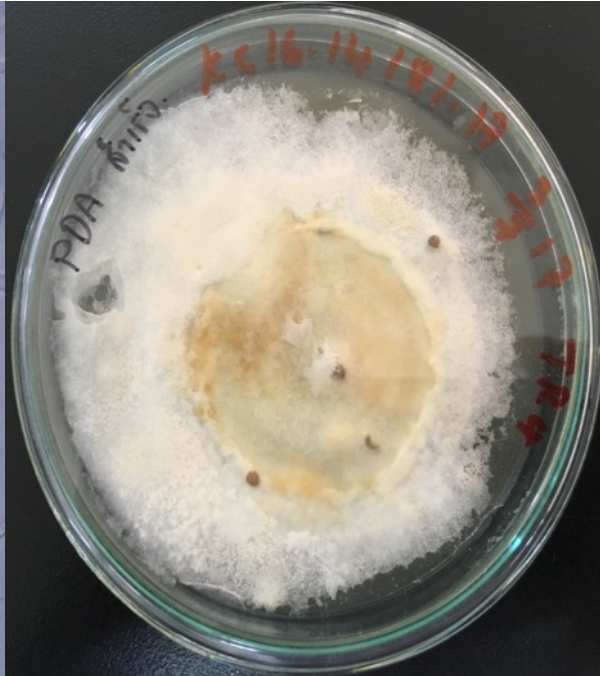
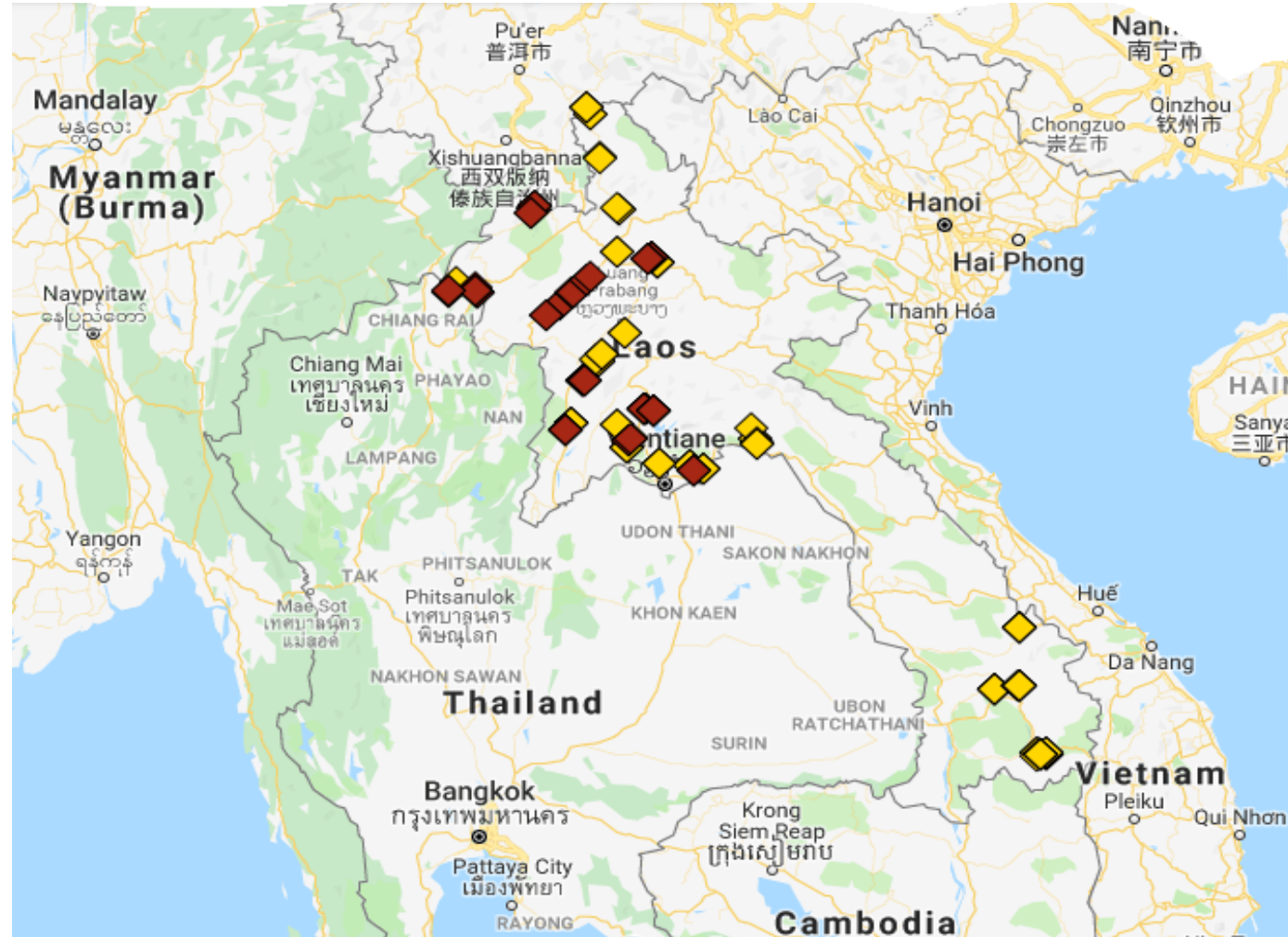


Image from electrophoresis gel to confirm Foc TR4



## 4. Result of survey Foc TR4 in Laos



- ◆ Foc TR4 detected on Cavendish
- ◆ Foc TR4 Not detected on Cavendish



## 5. Development control strategies on managing Foc TR4

- Study of using *Trichoderma hazianum* and *Bacillus sp.* for the control Foc TR4



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Tricho

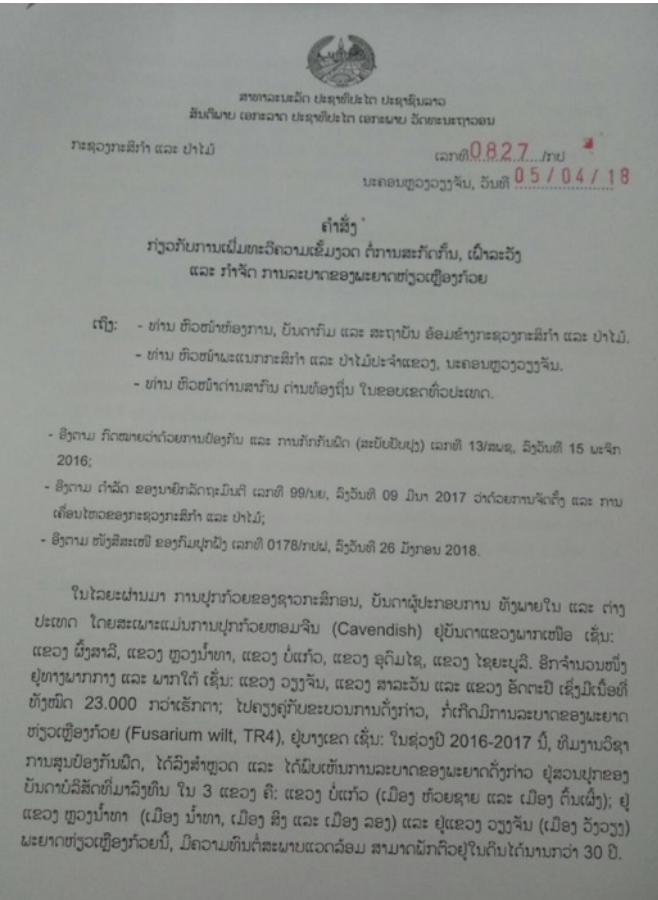
Bacillus sp.

Control





- Legislative, burning and intercropping





- Foc TR4 awareness and technologies
  - Plant Protection Centre develops video for banana Fusarium Wilt disease management, guidelines of banana disease in Laos and poster and disseminating Foc TR4 awareness on television, newspaper and YouTube.





- Foc TR4 management training on management of banana Fusarium Wilt disease.





Thank you very much

