

Tumaini: application to help diagnose banana diseases in Colombia.

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Scientists from the International Center of Tropical Agriculture (CIAT) in Colombia, Imaam Institute of Agriculture and Technology (IIAT) of India, and the Texas A&M University of the United States, jointly created the application called “Tumaini”, using artificial intelligence (AI) technology, to enable banana farmers to check the symptoms of banana plants from their mobile phones. The application

can detect five different types of diseases in bananas, such as Panama disease and the withered state from Fusarium infection, which is very dangerous for banana plants. The outbreak of Fusarium fungus has been detected recently in Colombia, causing the country to declare as a national emergency in August.

In early August 2019, the Colombian Institute of Agriculture and Livestock (Instituto Colombiano Agropecuario - ICA) declared a national emergency after the outbreak of Fusarium fungus TR4 was detected in the country. Colombia is the first country in the Latin American region that was affected by this disease. For this reason, scientists from the abovementioned three institutes have collaborated to design the application that can identify the symptoms of different diseases at the initial stage. This will help farmers to be able to stop the epidemic in time.

The application called “Tumaini”, which means hope in the Swahili language, is created with the artificial intelligence technology, so that it can be installed on mobile phones. By collecting over 20,000 pictures of banana plants that have become withered from infection of Xanthomonas bacteria, Fusarium fungus, Black and Yellow Sigatoka, virus, and banana weevil, in the software, it can identify the symptoms of each type of disease with accuracy up to 90%.

Currently, the application is being used in Colombia. Democratic Republic of Congo, India, Benin, China and Uganda, where users can download free of charge on Android devices. It now supports 5 languages, including Spanish, English, French, Swahili and Tamil.

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