Quake tomato: strange electrical signals from a tomato plant in Taiwan five days before the 2008 Sichuan M8.0 Earthquake

Dyson Lin
Taiwan Quake Forecast Institute
dysonlin@gmail.com

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Abstract

I observed strange electrical signals from a tomato plant in Taiwan five days before the 2008 Sichuan M8.0 Earthquake. That opened my door to quake forecast. Since then, I observed electrical signals of plants, tofu, soil, water or air to predict earthquakes. I successfully predicted a lot of quakes. Now I have about 30 quake forecast stations all over the world. I will publish a series of papers to describe my discoveries in the past 10 years. This paper is the start of the series. I am Founder and CEO of Taiwan Quake Forecast Institute.

Introduction

The tomato plant generates electrical signals in response to flame, ice or mechanical wounding [Fromm and Lautner, 2007]. Typical electrical signals of the tomato plant are with frequencies of 0 to 0.02Hz, with amplitudes of 5 to 50mV and last for half an hour to one hour.

My strange tomato electrical signals were with frequencies of 0 to 12Hz, with amplitudes of 3 to 80mV and lasted for five days.

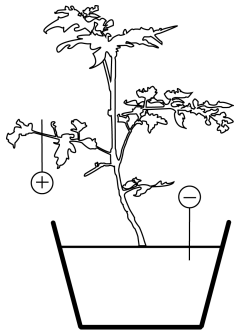

Figure 1: The tomato plant

Materials and methods

I used piercing electrodes to measure the tomato plant's electrical signals. My experimental method was similar to what Dziubińska el. al. used [Dziubińska et al., 2001] but with some differences.

I used a tomato plant which was 75 cm high and about three months old. I used 0.2 mm silver-coated copper wire as piercing electrodes. I used the XctionView II data acquisition system from Singa Company, with 10M ohms input resistance for each electrode. My Faraday cage was open and unshielded in the front(southern) side. I used only one or two channels, measuring the potential difference between the tomato plant and the soil. My sampling rate was 100Hz, with a 0 to 20Hz band pass filter. Figure 1 shows the tomato plant.

After the experiment, I filtered out the low-frequency (less than 0.1Hz) signals by Matlab to make the high-frequency characteristics of the signals more clear.

Results and discussions

Five days before the 2008 Sichuan M8.0 Earthquake, the tomato plant underwent a leaf-burning experiment and generated typical one-hour electrical signals for leaf-burning. The burning possibly made the tomato plant more sensitive to the earthquake.

Figure 2 shows the electrical signals from the tomato plant five days before the Sichuan M8.0 Earthquake on May 12, 2008. They were different from all the known electrical signals of plants.

Later, I got similar signals for two local earthquakes in Yilan, Taiwan from other two tomato plants.

Figure 3 shows the electrical signals from another tomato plant for the Yilan M6.0 earthquake on June 2, 2008.

Figure 4 shows the electrical signals from yet another tomato plant for the Yilan M4.5 earthquake on July 12, 2008.

So it is clear that the tomato plant signals are precursors of earthquakes.

Conclusions

The mechanism for the tomato plant to generate electrical signals for a big earthquake is unknown. Possibly it sensed the ionosphere concentration drop or something else. Ikeya's research suggests there is a strong electrical field before a big earthquake that animals and plants can feel and respond to [Ikeya et al., 1998].

I suggest to monitor the tomato plant's electrical signals to predict big earthquakes. This could be life-saving in the future. I need further experiments to verify that.

Acknowledgments

Thanks to my parents and sisters for their support.

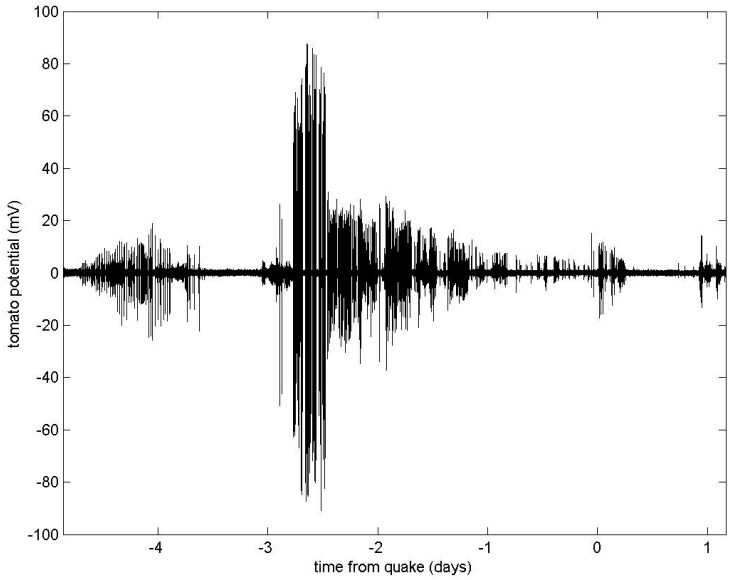

Figure 2: Electrical signals from the tomato plant before the 2008 Sichuan M8.0 Earthquake, with low-frequency (less than 0.1 Hz) signals filtered out

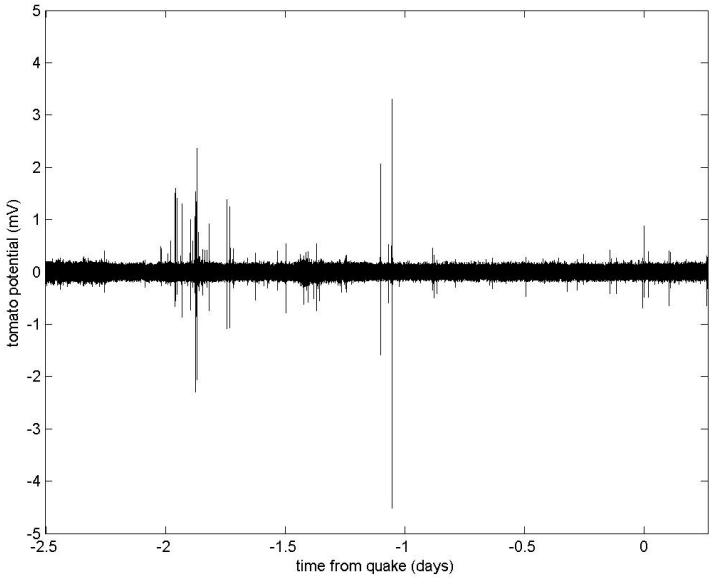

Figure 3: Electrical signals from another tomato plant for the Yilan M6.0 earthquake on June 2, 2008, with low-frequency (less than 0.1 Hz) signals filtered out

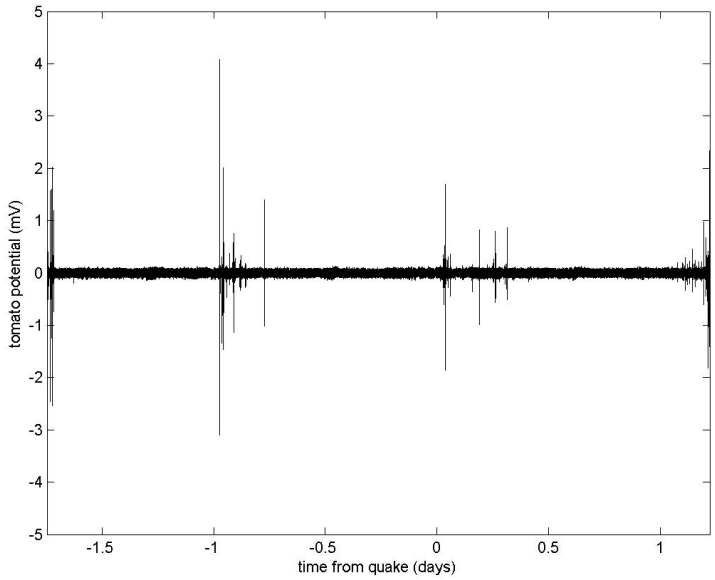

Figure 4: Electrical signals from yet another tomato plant for the Yilan M4.5 earthquake on July 12, 2008, with low-frequency (less than 0.1 Hz) signals filtered out

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