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Quinoa crop: Opportunities and challenges for a rapidly changing world

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The United Nations Food and Agriculture Organization (FAO) declared in 2013 that quinoa (*Chenopodium quinoa*) was one of the most important plant genetic resources for the future of the humanity. This nomination was due to its outstanding tolerance to abiotic stress like drought, freezing temperatures, poor soils, due to its great richness in varieties growing from Colombia in northern South America to near the austral regions of Patagonia by the southern lowlands of Chile. FAO also pointed out, its extremely rich nutritional/functional values and the opportunity for improving healthcare in poorly fed people. Its food quality helps those at lack of nutritional foods as well as those having excess of bad quality foods (under overweight and obesity). Although the interest in cultivating quinoa has grown in many countries out of its original sources in South America, the number of hectares where this crop is cultivated is still low -less than 130,000 when compared to cereals having millions of hectares. This is particularly striking, when we consider the increasing international demand for this crop. Then, there is a great scope for opportunities of developing it under a sustainable growth. Here, we describe the functional value of its grains and leaves and how ecological practices of soil management can be important to increase crop yields. I also give hints to consider for its sustainable transformation and for its fair trade and healthy market development.

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Production and peak harvest tropical fruits in respond to El-Nino Southern Oscillations (ENSO)

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One of the factors influenced Indonesian rainfall is El-Nino Southern Oscillations (ENSO). It also influenced agriculture productions. The study about ENSO and agriculture production is more concerned on food crop than horticultural crops. This paper aimed to study influences of ENSO on horticulture production and alteration of peak season especially on tropical fruits, mangosteen and durian, in Sumatera Island. The time series data from 1990 until 2010 was used to analysis. The analysis revealed that La-Nina caused the decrease in the production of mangosteen and durian roughly 20-70% while El-Nino 2.5-40%. When El-Nino and La-Nina occurred, the peak season of durian and mangosteen changed. The alteration of peak season vary within provinces in Sumatera Island.

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