ITSF

Indonesia Toray Science Foundation
'RESEARCH PROPOSAL'

1. **Title** : Quality Development of Fresh Agricultural Product through Hydroponics

2. **Research Team Leader**

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3. **Research Field** : Quality of Agro-industrial Technology
4. **Number of Researcher(s)** : 2 (two)
5. **Research Location** : Yogyakarta
6. **Time Allocation** : 1 year
7. **Research Grant** : Rp. 32.500.000,-
8. **Summary of Research Proposal (± 250 words)** :

Hydroponics is a technology for growing plants without soil in a nutrient solution (water and fertilizer) with or without an artificial medium to provide mechanical support, which include some types such as Nutrient Film Technique (NFT), Deep Flow Technique (DFT), Ebb-Flow Technique (EFT) and others. In the food production using hydroponics, fruit quality that produced is often better than that from conventional method (soil culture). This system was frequently used as model experimental system, because it is possible to provide a very nearly homogenous root environment parameter and it can be controlled. Furthermore, food production through soilless culture method is one of the objective medium policy of the Indonesian government in the national research policy 2006-2009.

Management of environmental stresses on hydroponics food production can be used for producing high quality of fresh agricultural product. In this study, first, establishing hydroponics food production system, where through this system we shall applied some environmental stresses to produce high quality food, and then we will evaluate quality of fresh food production that produce through hydroponics during storage condition. Furthermore, we will evaluate several parameter for quality evaluation of fresh food product such as fruit firmness, soluble solid content, nutritional content and sugar contents and then sensory analysis will be done. Third, we will evaluate the shelf life of the product. In this study, food production from hydroponics with environmental stresses will be compared with the conventional food production in the market.