

2<sup>nd</sup> International Conference on

## NUTRACEUTICALS

&amp;

5<sup>th</sup> International Conference on

## FOOD AND BEVERAGES

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**Risk management: Humidity and temperature control of nutmeg supply chain, to ensure food safety**

Sri Bintang Kusumo Winahyu

Centre of Food Diversification and Food Safety, Indonesia

Nutmeg is an herb product that produces in Indonesia, especially eastern Indonesia such as Banda Island (Maluku region), Fakfak West Papua and Siaw island North Celebes. Most of EU people like very much nutmeg from Indonesia. Till now, Indonesia meets about 80 % of the needs of EU for nutmeg. Nutmeg produce by view country. Another country that produces nutmeg is India and Ceylon. But quality of nutmeg from India and Ceylon origin not as good as Indonesian Nutmeg. EU Community use nutmeg in almost all their food, such as sausage, tea and other kind of their food. There are two requirements of Nutmeg export to EU Country: contain Aflatoxyn B1  $\leq 5$  ppb (EU regulation No.24 / 216 and Ochratoxyn  $\leq 15$  ppb (EU regulation 1881/2006). A long 2016, there are 25 notification of Indonesian Nutmeg, caused are: Aflatoxin contamination ( more than 5 ppb of Aflatoxin B1 or 10 ppb of total aflatoxin) it's about 10 shipment, Ochratoxin contamination (more than 15 ppb Ochratoxin A) 2 shipment, Live insect contamination (requirements is a no live insect), Without Health Certificate from Indonesia Competent Authority. Notification In case of contamination of aflatoxin and ochratoxin, these products has been declared safe, with publication of Health Certificate from Indonesian Competent Authority. Based on this fact, aflatoxin and ochratoxin, may appear during shipment from Indonesia to EU Country. Aflatoxin is an toxin that produced by fungi, *Aspergillus flavus*. Ochratoxin is a toxin produced by *Aspergillus ochraceus*. In Human, consumption of food with aflatoxin contamination can be caused hepato carcinogenic. In the other side, consumption of food with contamination of ochratoxin can be caused hepato toxin. Not only hepato carcinogen but also

hepato toxin, is a long term hazard. According nature of *Aspergillus flavus* and *Aspergillus ochraceus* will be produced mycotoxin if *Aspergillus* sp is threatened with life and in a tense state. To avoid aflatoxin and ochratoxin, we should be avoid mold growth, such as *Aspergillus flavus* and *Aspergillus ochraceus*. When *aspergillus* is detected in nutmeg, environmental conditions must be maintained so as not to threaten life aspergillus but also does not make aspergillus multiply rapidly. Humidity and temperature is the key to growth *Aspergillus flavus* and *Aspergillus ochraceus*. Humidity should be controlled not only raw material but also along the supply chain. In the other side, temperature should be control to ensure hygienic sanitation requirement in place, to avoid another contamination such as microbe contamination.



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## Biography

Sri Bintang Kusumo Winahyu has her expertise in controlling of Mycotoxin contamination of Nutmeg during supply chain. Her controlling model based on Analyse mycotoxin contamination at nutmeg supply chain, consist of harvesting, postharvest treatment, treatment at collecting House, Treatment at Exporter ware house, and Treatment a during transportation to EU Country. She has built this model after years of experience in treatment of Nutmeg notification during the implementation of new regulation in EU Country for Importing Nutmeg from Indonesia. The foundation is based on Mycotoxin is a metabolite of mold, in this case *Aspergillus flavus*. This mold can be growth during cultivation, harvest, post-harvest and also during treatment in collecting House, Exporter ware House and also during transportation to country in this case EU Country as Export destination.

bintang\_31@hotmail.com