

# SINGAPORE'S FIRST GREEN LABEL FERTILIZER



Capturing the unique technique of converting soybean wastes, Singapore businessman Ronnie L. J. Chew has successfully obtained Singapore's first green label for his organic fertilizer — Eco-Soya Fiber (ID no. 031001) — with the Singapore Environmental Council, meeting the stringent standards by the authority.

Each day, there is 400 tons of soybean waste (e.g. tofu production) being generated in Singapore alone and manufacturers normally have to think of ways to dispose of these wastes (either burnt away or transform into landfill), levying more cost to the manufacturers.

Ronnie spotted the potentials in recycling the soybean wastes and he developed an economical technique of converting these wastes into organic fertilizers. Singapore Environmental Council is very concerned with the product — Eco-Soya Fiber (ESF) — because safety is always the utmost concerns especially when these products are used in agriculture, indirectly influencing public health via food consumption.

A series of laboratory analyses had been performed to determine the safety and quality of ESF. Prof. Wayne Kussow with the Department of Soil Science (University of Wisconsin-Madison, US) conducted three categories of tests for ESF:

- Chemical composition of ESF;
- Performance of growing turf-grass against selected chemical and organic fertilizers (Nutralene and Miloganite, respectively);
- Nitrogen release rate.

It was found that there were no significant differences in terms of ESF's performance compared

to market leaders in organic fertilizer and its composition is comparable to those of selected fertilizers.

**Chemical Composition of Eco-Soya Fiber.**

Minerals	Relative Abundance
P	0.53 %
K	1.97 %
Ca	0.46 %
Mg	0.24 %
S	0.32 %
Zn	66.02 ppm
B	103.31 ppm
Mn	29.46 ppm
Fe	428.46 ppm
Cu	12.58 ppm
Al	196.89 ppm
Na	124.85 ppm
Total N	6 %

According to Ronnie, the cost of running his business has basically been covered by the waste transportation service (comes at a charge of S\$71/ton wet waste) to the providers of soybean waste. He also pointed out that the innovative process of converting soybean waste "okara" into organic fertilizer only requires natural energy such as solar energy, hence, a business model that is highly cost-effective to maintain. Presently, he is partnering with the Business Development Unit of the Singapore Prison for manufacturing the products.

Classified as an organic fertilizer, ESF has several distinctive advantages over chemical fertilizers, these include:

- Safe to apply around kids and pets due to lack of toxin;
- Over application will not burn plan;
- Contain micronutrients not found in chemical fertilizers;
- Capable of constant nitrogen release, thus reduce the frequency of application;
- Minimize environmental contamination.

Currently, there are some clients using ESF for maintaining soccer field and stadium field. Ronnie will not stop at that and he pushes further to encourage city dwellers to grow fresh vegetables at their own backyard or home in a box concept, with demonstration held at Batam Resorts (see following page).

Later this year, Ronnie plans to register ESF in Japan and to seek for stronger tie with his Hawaiian collaborators. He is confident that ESF would eventually reach out to the world. 🌐