CARRAGEENAN INDUSTRY REPORT 2012

CyberColloids Ltd.

INTRODUCTION

The following report provides a "snap shot" of the carrageenan market for the period 2006 to 2011. The report is intended to supplement the previous "Report on the Carrageenan Industry" that was produced by CyberColloids in 2006. The 2006 report provided a technical introduction to carrageenan, a general market overview, a detailed analysis of the *Eucheuma* supply chain and an overview of Chinese producers and markets.

This current report is divided into 4 key sections:

1. Current situation - provides a summary of the key industry headlines; the current situation with regard to sales and end use; new product development and current health issues.
2. Capacities and key players – which outlines current estimates of the industry capacity and information on the key players.
3. Analysis of raw material supply - details the status of the raw material supply during the period 2006 – 2011 and is based on available production and export data. Information is presented on the following raw materials:
   - Cottonii production in Indonesia and the Philippines
   - Spinosum production in Indonesia and the Philippines
   - Spinosum exports from Zanzibar
   - Skottsbergii, Nama, Broadleaf, Narrow leaf & Chamissoi exports from Chile
   - Chondrus production from Prince Edward Island, Canada
4. Chinese carrageenan industry - which outlines the current situation and a directory of key players. Based on information obtained from interview with industry contacts.

Information contained in the report has been obtained via interview with carrageenan industry contacts, "industry gossip" and review of activities as reported in the relevant industry media.

Since 2006 a number of things have changed:

- Carrageenan market worldwide sales are estimated to be around $640M, up 36% in value but only 6% in volume. This reflects the collapse of pet food and an increase in prices since the 2008 shortage in raw material.
- Refined carrageenan hasn't collapsed as much as we and others predicted.
- A strong growth is reported in dairy over the last 5 years and this is expected to continue, especially for products based on S American seaweeds.
- SRC has done well in meat but not so good in dairy due limited functionality in it's current form.
- There are concerns that the demand for seaweeds ex Chile will bring possible supply issues going forward.
- Imports into EU/USA from China have increased to nearly 6000t up 107% since 2006, this is mostly in EU where Spain and Germany are key markets. Compare this with imports from the Philippines which have grown only slightly from 5000t/yr in 2006 to 5800t/yr in 2011.
- Very few new products were launched with E407a on the label (< 2%). Companies are either mislabelling or are using refined carrageenan.
- Tobacman is back with research focussing on a potential link between carrageenan and diabetes.

LIST OF ABBREVIATIONS: Please not that the following abbreviations are used:

*t = met*ric tonne	CAD = Cash against Documents	SRC = Semi refined carrageenan
FOB = Free on board	US$ = United States Dollar	RC = Refined carrageenan

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