

ผลผลิต (Output) จากงานวิจัย

- Prodpran, T., Benjakul, S. and Rattaya, S. 2011. Properties of Curdlan Film as Influenced by Preparation Conditions. The 12th ASEAN Food Conference 2011: Food Innovation: Key to creative Economy, BITEC Bangna, Bangkok, Thailand: 16th – 18th June, 2011.
- Prodpran, T., Benjakul, S. and Rattaya, S. 2012. Preparation and characterization of curdlan film (*In preparation for submission to International Journal of Food Science and Technology*)



The 12th ASEAN FOOD CONFERENCE

16th -18th June 2011, BITEC Bangna,

March 1, 2011

Dear Thummanoon Prodpran,

We are pleased to inform you that your paper titled "Properties of Curdlan Film as Influenced by Preparation Conditions" has been accepted for **poster presentation** at ASEAN Food Conference 2011, Food innovation: Key to Creative Economy, held together with ProPak Asia 2011, at BITEC, Bangkok, Thailand during June 16-18, 2011.

Please kindly send the full paper of 3-4 pages (A guideline for full paper preparation is attached with this letter together) as 2003-97 word file to aseanfc2011@gmail.com **with in 31st March 2011** and keep in mind that the full paper should be carefully checked by the presenter before the submission.

For your presentation, a 90 X 120 cm² partition board for poster exhibition will be provided. You must bring the GLUE TAPE to hang your poster. Setting the poster will allow on 16-18 June 2011, at 2nd floor BITEC Bang-Na, BKK, Thailand depending on which session you are. Please send your pay in slip with your name and address by Fax. to +662 644 8122 or asean.sec@gmail.com. We would like to remind you that the early bird registration is within 31st March 2011.

For more information, please visit <http://aseanfoodconference.com/afc/2011/en/index.asp> regarding accommodation and location.

We are looking forward to seeing you and wishing you a nice trip to Thailand.

Sincerely yours,

K. Nantachai

Kasem Nantachai, Ph.D.

Dean of Faculty of Technology,

Khon Kaen University, THAILAND

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Properties of Curdlan Film as Influenced by Preparation Conditions

Thummanoon Prodpran^{1,}, Soottawat Benjakul², Saowapa Rattaya²*

¹ Department of Material Product Technology, Faculty of Agro-Industry, Prince of Songkla University, Hat Yai, Songkhla, 90112 Thailand; ² Department of Food Technology, Faculty of Agro-Industry, Prince of Songkla University, Hat Yai, Songkhla, 90112 Thailand

* Corresponding author: thummanoon.p@psu.ac.th

Abstract

Curdlan is a microbial hydrocolloid polysaccharide consisting of β -1,3-glucan. It is insoluble in water but soluble in alkaline solution. Curdlan is known to form gels induced by heat and calcium ions. Curdlan has been used as a thickener and a stabilizer in food engineering and construction engineering, and as an anti-cancer drug in pharmaceuticals and clinics. To date, however, very limited information is available on film formation and the properties of film from curdlan. This study was aimed at the preliminary studying on preparation and properties of curdlan film. The effects of curdlan concentration, alkaline-solution concentration and film-forming solution temperature on properties of resulting films were investigated. Tensile strength (TS) and water-vapor permeability (WVP) of the films increased with increasing curdlan concentration. The use of sodium hydroxide solution in the range of 0.05-0.3 M as solubilizing medium had slightly effect on the mechanical properties of the films. Curdlan films prepared from alkaline aqueous solution had better mechanical properties than those prepared from heat-solubilized neutral aqueous solution. However, films prepared from the later condition were smoother and more transparent than those prepared from the former condition, plausibly due to the differences in crystalline or ordered structure. Moreover, an increase in film-forming solution temperature used seemed to increase the TS of the resulting films. Therefore, curdlan could be potentially used to prepare biodegradable film and appearance and properties of curdlan films was influenced by the preparation condition.

Keywords: Curdlan, film, preparation condition, properties, microbial polysaccharide



