

## Accepted Manuscript

Scale-up of the production of cassava starch based films USING TAPE-CASTING

Jaqueline Oliveira de Moraes, Ana Silvia Scheibe, Alberto Sereno, João Borges Laurindo

PII: S0260-8774(13)00366-X

DOI: <http://dx.doi.org/10.1016/j.jfoodeng.2013.07.009>

Reference: JFOE 7477

To appear in: *Journal of Food Engineering*

Received Date: 28 February 2013

Revised Date: 20 June 2013

Accepted Date: 15 July 2013

Please cite this article as: Moraes, J.O.d., Scheibe, A.S., Sereno, A., Laurindo, J.B., Scale-up of the production of cassava starch based films USING TAPE-CASTING, *Journal of Food Engineering* (2013), doi: <http://dx.doi.org/10.1016/j.jfoodeng.2013.07.009>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## SCALE-UP OF THE PRODUCTION OF CASSAVA STARCH BASED FILMS USING TAPE-CASTING

Jaqueline Oliveira de Moraes<sup>a</sup>, Ana Silvia Scheibe<sup>a</sup>, Alberto Sereno<sup>b</sup> and João Borges  
Laurindo<sup>a\*</sup>

<sup>a</sup> Department of Chemical and Food Engineering, Federal University of Santa Catarina,  
Florianópolis, SC 88040-900, Brazil. Tel.:+55 48 37215229

<sup>b</sup> Faculty of Engineering of the University of Porto - FEUP - Portugal  
[jaquelinemoraes111@gmail.com](mailto:jaquelinemoraes111@gmail.com), [ana\\_scheibe@yahoo.com.br](mailto:ana_scheibe@yahoo.com.br), [sereno@fe.up.pt](mailto:sereno@fe.up.pt),  
[joao@enq.ufsc.br](mailto:joao@enq.ufsc.br)(\*)

### ABSTRACT

Most research on biodegradable and edible films uses the well-known casting technique, which allows the preparation of films of small dimensions. Besides, cassava starch films prepared by extrusion processes do not have good properties, because of the high shear rates applied. The tape-casting technique allows the spreading of a suspension on large supports, with the control of the thickness by an adjustable blade at the bottom of the spreading device. The drying of the film can be carried-out on the support itself, under controlled conditions. Film-forming suspensions with different formulations were prepared, varying the concentrations of starch (3 and 5 g / 100 g of suspension), glycerol (0.20 and 0.25 g / g of starch) and cellulose fibers (0 and 0.30 g / g of starch) and used to produce films by tape-casting. The results showed that tape-casting is a suitable technology to scale-up the production of starch based films.

**Keywords:** starch; cellulose fibers; suspensions; films; tape-casting, scale-up.

Download English Version:

<https://daneshyari.com/en/article/10277509>

Download Persian Version:

<https://daneshyari.com/article/10277509>

[Daneshyari.com](https://daneshyari.com)