

## Effect of Xyloglucan and the Mixture of its Oligosaccharides on Growth of Pea Plantlets.

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Xyloglucans are storage polysaccharides found in some seeds from Leguminosae family, such as *Hymenaea courbaril* (jatobá). Some oligosaccharides derived from xyloglucans are considered oligosaccharins because they regulate cell growth induced by auxin. In this work, xyloglucans from jatobá (XG) were obtained from milled and defatted cotyledons by aqueous extractions at 25 °C for 1 h. The xyloglucan contained Glc, Xyl and Gal in close agreement with the molar ratios usually found for these polysaccharides. HPSEC-MALLS/RI analysis showed that XG was homogeneous, with a  $M_w$  of  $6.432 \times 10^5$  g/mol. The polysaccharide was treated with cellulase (Megazyme) at 40 °C for 24 h. Then, the reaction was stopped, ethanol (3v) was added and the mixture of oligosaccharides was recovered from the ethanolic fraction. The xyloglucan and its oligosaccharides mixture were used to test growth of pea plantlets. For the bioassay, the growth of pea plantlets was monitored for 72 h, with measurements of epicotyl at intervals of 24 h. It was observed that growth was higher in the first 24 h, being 4.2 mm and 2.1 mm for xyloglucan 100nM and control, respectively. The ANOVA test showed that the increase in growth was significant for at least one of the samples. The Tukey test showed that the samples tested with XG and the oligosaccharides 100nM promote a significant increase in the size of the epicotyl related to the control, being the XG 100 nM the best treatment. The present data suggest that the xyloglucan from jatobá and the mixture of its oligosaccharides can have positive effects on the growth of pea plantlets. Supported by Fundação Araucária and PRONEX.