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# Physical and barrier properties of flexible films based on arrowroot obtained by thermoplastic extrusion

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The arrowroot is a plant from Latin America and is natively in Venezuelan forests. The size of the rhizomes is between 10 and 25cm are fusiform shape, elongate and have small segments, separated by light provided bottlenecks scales. The arrowroot can get to have 20% of starch and fibers remaining. Therefore the aim of this was to use trablho starch and arrowroot fiber for the production of biodegradable films by thermoplastic extrusion process. It was used glycerol, 30% relative to the weight of starch as platificante. Four samples were prepared, as follows: i) pure starch, ii) Starch + 0.5% fiber, iii) Starch + 1% fiber and iv) Starch + 1.5% fiber. Utilizing the BGM brand extruder (Model EL-25, SaoPaulo, Brazil) used and the processing conditions Fakhouri (2009). After extrusion the films were conditioned for 48 hours at 25°C and 50% RH, so that it was characterized for thickness, permeability to water vapor (PWV) and for its solubility in water and acid. The films with the naked eye showed a whitish and when colocaração greater the fiber concentration in the sample, the more resistance to the touch. The esperssuras were 0.2440; 0.3018; 0.6063 and 0.2760 mm respectively for sample i, ii, iii and iv. The PVA showed an increase with the increase in the fiber sample. Little difference was observed when 0.5% of fiber was added to amosta (range 12 to 13 g.mm/m2.d.kPa), when most fiber was incorporated into the film, a considerable increase in the vapor permeability water was observed, possibly due to possible rupture zones in the filmogenic matrix. The arrowroot starch films made arrowroot fiber were 100% soluble in acid and showed a 30% solubidade in water for pure starch film and 26.6266% for film with 1.5% fiber.

## Biography

Amanda Dambros Pereira is currently graduate in Food Engineering at the Federal University of Grande Dourados (UFGD), project director at Enterprise Junior UFGD of Food Engineering (EJIPTA), scholarship of scientific initiation by CNPq / UFGD and participant of the research group MFBIOPACK (UFGD). She has three completed scientific initiations (PIBIC and PIVIC). She has experience in the field of Food Science and Technology, with an emphasis on food technology, especially in Technology vegetables and edible packaging products and / or Biodegradable drawn from different sources of starch. She has training in Thermoplastic Extrusion.

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