

## ISOFLAVONES HYDROLISIS AND EXTRACTION<sup>1</sup>

### HIDRÓLISE E EXTRAÇÃO DE ISOFLAVONAS

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Isoflavones are found in leguminous species and are used as phytoestrogens widely used by industry for its beneficial effects as estrogens mimicked, antioxidant action and anti-cancer activity. The identification and quantification of isoflavones in plants is a need due to the high demand of industry. Several methods are used for its extraction, using organic solvents (methanol, ethanol and acetonitrile). Samples from five legumes species from Instituto de Zootecnia (IZ), Forage Gene Bank were tested. All seeds received a hydrothermic treatment immersed in pure water at 50°C for 12 hours. Seeds were then oven-dried. In this work we tested the extraction using only the hydrothermic treatment and hydrothermic treatment allied to methanol extraction protocol. Seeds were grinded and half of the samples were resuspended in PBS (phosphate Buffer) and the other half were submitted to 4 mL of methanol and 1% of acetic acid, soaked for 5 hours, shaken every 15 minutes, at room temperature. The five legume species that we quantify isoflavones by enzyme immunoassay (EIA) were: *Calopogonium mucunoides*, *Bauhinia* sp., *Cajanus cajan*, *Galactia martii*, *Leucaena leucocephala*. The extraction procedure is a recommendation of AOAC (Association of Official Analytical Chemists) for isoflavone quantification. Ours results show an increase of extraction using methanol 80% plus acetic acid 1% and was obtained using solvent extraction in comparison to hydrothermic procedure alone (figure 1).

Key words: isoflavones, extraction, methanol, leguminous.

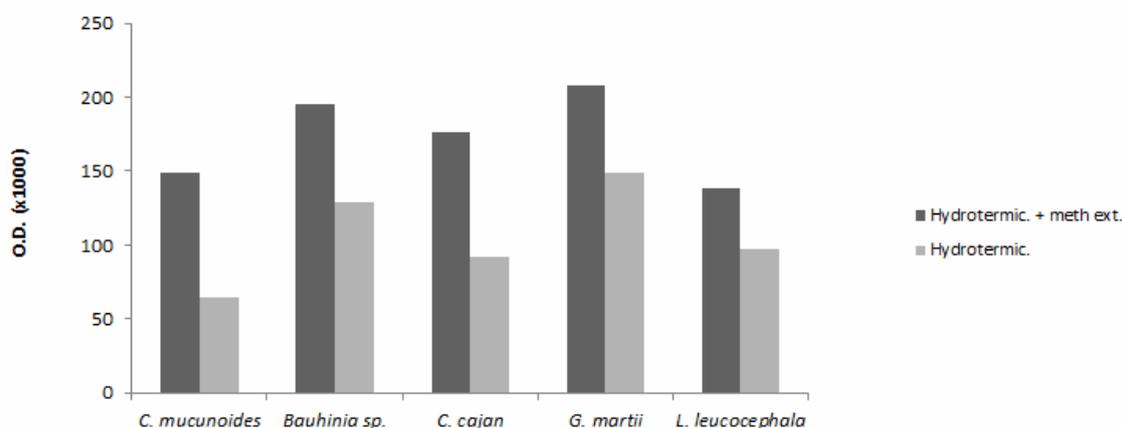


Figure 1. Isoflavone amounts using two extraction methods in optical density (O.D.). Titration by EIA at 492 nm