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journal or publication title	Report of National Food Research Institute
volume	75
page range	64-64
year	2011-03-01
URL	http://doi.org/10.24514/00002877

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Renewable bio-products are biodegradable products developed keeping environmental concerns in mind. An integrated research and scientific on renewable bio-products / materials with insect attack protection property is an urgent need as agro/cereal grain based bio-products are usually attacked on shelf by insect pests making them defective. The aim of the study was to develop and understand the properties of biodegradable material with spice (turmeric) inclusion for protection against attack from harmful insect pests. Keeping the above objectives processing, properties and development of agro-resource and spice-based renewable eco-bio-product (eco-pots) was carried out using twin extrusion technology for pelleting and injection molding for bio-product casting. This followed studies on pellets and pots (RP 820/RPT 821) from rice, potato pulp waste with and without turmeric. Maize weevil (*Sitophilus zeamais Motschulsky*) was used as the stored product insect pest and its food preference was studied in prepared pellets and eco-pots. It was RP 820 pots which were highly preferred as food by maize weevil, as absence of turmeric resulted in cracks and crevices in pots making easy access for insect attack. Whereas pots from RPT 821 (with turmeric inclusion) were not at all preferred as food by the insect pest as the pots were free from cracks and crevices and pots had enough integrity to allow any bite. Turmeric inclusion afforded the compatibility effect on pots making it inaccessible to insect attack besides natural color.