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# EFFECT OF BIODEGRADED PLASTIC BLENDS ON THE GROWTH-RATE OF SOY BEAN PLANTS

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## Abstract

The effect of biodegraded low density polyethylene(LDPE) blends on the growth rate of soy bean plants was studied under the agricultural environmental conditions. Corn (*Zea Mayz*) starch which is a bio-filler was extracted, characterized, and incorporated into the synthetic low density polyethylene pellets, to initiate it's decomposition. The starch/plastic compatibility was improved by addition of a coupling agent(maleic anhydride-g-polyethylene), injection molded and extruded as sheets. Microbiological analysis of the soil sample was carried out to ascertain it's inhabitants. Some mechanical, water absorption, percentage weight-loss, and physical tests were carried out on the blended plastic blends for a period of 180 days before the plantation of the soya-bean seeds. The growth rate of the soya bean plants were monitored after germination at 7 days intervals for a period of 120 days. The growth rate of the plants was observed to increase, with the increase in starch contents, extent of decomposition and soil burial periods.



**Keywords**: Polyethylene blends, Soy-beans, Microbiological-tests, Biodegradation.