

# ECO-PLANT POLYBAG (FORMULATION OF BIODEGRADABLE AND COMPOSTABLE POLYBAG FOR SOIL CONDITIONER)

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## Patent

- PI2020006140 (PACKAGING FILM AND METHOD OF MANUFACTURING THEREOF)

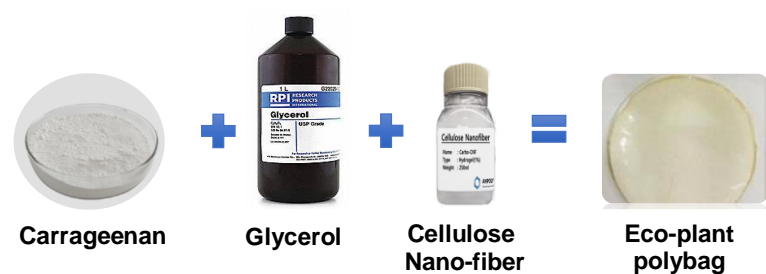
## Product Background

- Eco-friendly polybag has ability to protect agricultural land and maintain soil fertility.
- The objectives are to determine biodegradability of eco-friendly polybag in soil burial degradation and compostability of film in chili plant.
- Eco-friendly polybag were analysed with various formulation consists of refined and semi-refined carrageenan, glycerol, and cellulose nanofiber for their biodegradability and compostability potential

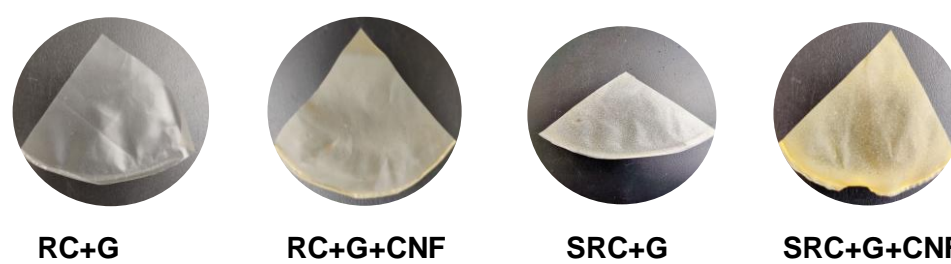
## Novelty/ Originality/ Inventiveness

- The inventiveness of Eco-plant polybag is that the formulation is all natural components that help to maintain soil fertility during compostable process.
- Commercial polybag as single plastic used polybag are harmful to the environment and lead higher costing on the management and accumulation on the waste municipal disposal in the world.
- Eco-plant polybag formulation is the new beginning of alternative of plant polybag for environment benefits by providing natural valued compost fertilizer leaves only natural residues like water, carbon dioxide and biomass behind that are safe for environment.

## State of the Art/ Methods



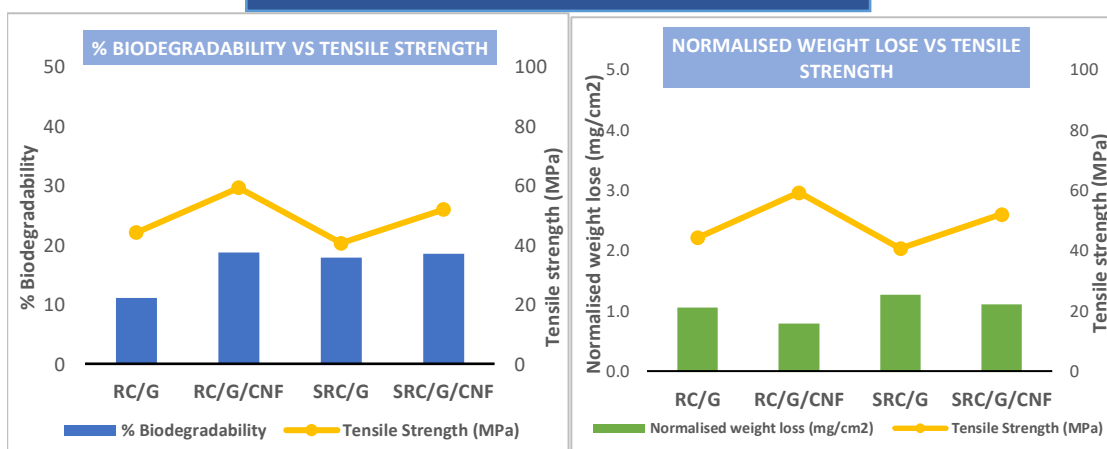
## Product Image



\*RC(refined carrageenan) SRC(semi-refined carrageenan)

## Product Characteristics/Results

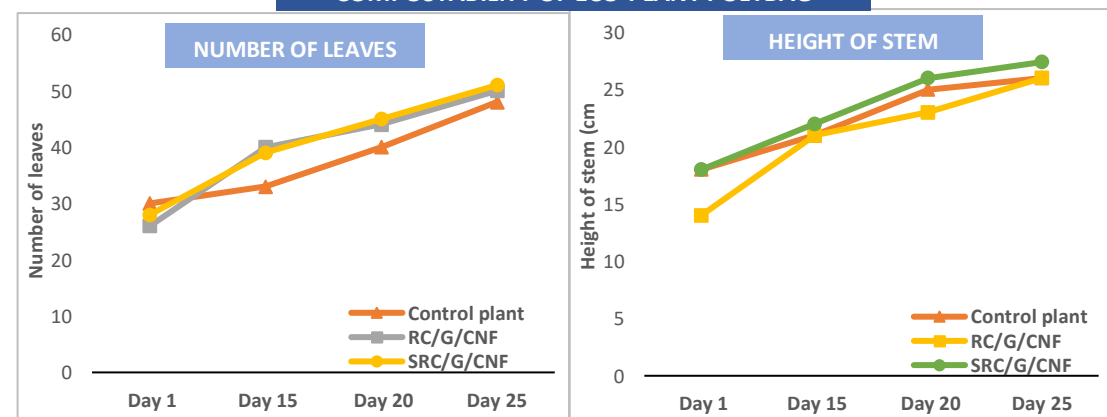
### BIODEGRADABILITY OF ECO-PLANT POLYBAG



### INNOVATIVES FEATURES

	Control plant	RC/G/CNF	SRC/G/CNF
DAY 1			
DAY 25			

### COMPOSTABILITY OF ECO-PLANT POLYBAG



## Marketability & Commercialisation

- Agropreneur
- Farmer
- Nursery business
- Community

## Benefits/Usefulness/ Applicability

- Degradable & Eco-friendly
- Protect Agricultural Land
- Low cost

## Cost Analysis

- RM 0.30/PCS
- Film diameter = 14cm
- Total manufacturing cost = RM 95/day
- (Raw materials, Electricity Labour, Rental)
- Capacity 3000 film produced/day
- Current market price BOPP, CPP, PE : RM 0.50

## Environmental Impact

- Films are compostable and increase soil fertility
- Degradable – reduced cost of waste management
- Safe-all natural formulations, alternative to synthetic preservative
- Minimize use of synthetic polybag

## Status of Innovation

- Lab validation

## Collaboration/Industrial Partner

