

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

A series of potential additives, i.e. plasticizer, nucleating agent, compatibilizer, were explored. Polyethylene glycol with molecular weight 6,000 performed as effective plasticizer and nucleating agent. The addition of PEG 6,000 for 10% in 50%PLA/40%tapioca starch initiated the reduction of  $T_g$  of PLA from 61°C to 25.8°C and the growth of crystal phase as classified by DSC and optical microscope. Although tapioca is a good candidate additive for cost reduction and biodegradability, the incompatibility related to the percent of addition was the point to be further considered. 3-Glycidoxypropyltrimethoxysilane improved the interfacial adhesion between PLA and tapioca starch, hence, we conclude as a good compatibilizer.

