



CHAPTER V CONCLUSIONS

The factors that most limit the use of starch in foamed materials applications are brittleness, loss of strength at low humidity and poor resistance to water. Addition of the synthetic biodegradable polymers (PVA, PLA, and PCL) could improve the ultimate strength, the elongation at break, and water resistance of starch-based composite foams. It was found that starch-PVA composite foam gave the best properties as compared to starch-PVA and starch-PCL composite foams. Moreover, addition of plasticizers (glycerol, urea, and ammonium chloride) improved the flexibility of the foams.

The mechanical properties and moisture content of starch-based composite foams are highly dependent on the relative humidity and storage time. From the results, the suitable storage conditions of the foams is 42% RH at 25°C for 2 days.