

Juladit Chayaniyayodhin 2010: Uses of Konjac Gel and a Mixture of Konjac and Basil Seed Gel as Fire Retardant Coating Materials, Kasetsart University. Master of Engineering (Fire Protection Engineering), Major Field: Fire Protection Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Apinya Duangchan, Ph.D. 76 pages.

This research studies on using konjac gel (*Amorphophallus konjac*) and a mixture of konjac gel and basil seed (*Ocimum basilicum*) natural water absorbed materials, as fire retardants. Ignition delay time of each material coated on 10x10 square centimeter. of substrates which are made of teak plywood, hevea plywood and medium density fiber board is compared with those of “Class A” synthetic fire fighting foam and commercial fire retardant gel. The water content in all fire retardant mixtures is 50 cubic centimeter. The tests were performed using Cone Calorimeter at heat fluxes of 50 and 60 kilowatt per square meter. The results from this research showed that konjac gel and the mixture of konjac and basil seed gel showed about the same ignition delay time. Their ignition time was 252 seconds or 120 and 20 seconds longer than that of the “Class A” synthetic fire fighting foam and that of the commercial fire retardant gel, respectively at 50 kilowatt per square meter of heat flux.

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