

CHAPTER V

SUMMARY

The most important factor which affect on discoloration of rubber is polyphenols. This result is contrast to the previous belief that carotenoids and polyphenol oxidase have profounding effect on discoloration. Polyphenols can react with amino acid by non-enzymatic reaction to give the color products, and the color index of raw rubber can be increased by reaction with compounding ingredients and high temperature during vulcanization. Besides polyphenols, other non-rubber ingredients such PPO and other proteins also have an effect on discoloration. So, in the production of light color rubber, high PPO and protein contents should be avoid. Removal of proteins from the latex before processing decreased the color index of raw rubber (Wonnop Visessanguan personal communication). In case of Mooney viscosity, this result clearly demonstrates that total lipids should have an effect on Mooney viscosity, however these viscosity-reducing factors are not tocotrienols, carotenoids, polyphenols and polyphenol oxidase as shown by addition experiment, and these verifying indicators did not have a significant effect on cure characteristics of the compound rubber and some important physical properties of vulcanized rubber.