

**Title** Change of carbohydrate in branches and its relation to flowering in *Averrhoa carambola*  
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#### **Abstract**

Changes of Carbohydrate contents in different branches of 8-year-old *Averrhoa carambola* cv. 'BIO' during the two flowering stages and the later fruit development were studied. The results showed that at the first flowering stage, flower bud formation rate and the amount of flower in one panicle in thick branches ( $2\pm 0.2$ cm in diameter) were more than those in thin ones ( $1\pm 0.1$ cm). Two peaks of total soluble sugar, sucrose and fructose contents were found at the stages of the two flower bud emergence, and two valleys were found at the two later fruit development stages. Sucrose contents in xylem were higher than those in phloem in thick branches. Glucose contents in thin branches were higher than those in thick ones. Starch contents in phloem of thick branches were mere than those in xylem of the thick and thin ones. Starch contents in phloem in thin branches were low and had few changes. Two valleys of starch contents in thick branches and in xylem of thin branches were found at the two stages of flower bud emergence, and two peaks of those were found at the stage of the later fruit development. These trends were opposite to those of soluble sugar contents. It is suggested that high starch contents in branches before flower formation and high soluble sugar contents during flower bud formation may be benefit to flower formation.