

Contribution of the carbon sources involved in latex regeneration in rubber trees (*Hevea brasiliensis*): an *in situ* $^{13}\text{CO}_2$ labelling experiment

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- Rubber trees (*Hevea brasiliensis*) are the main source of natural rubber, extracted from latex, which exudes from the trunk after tapping.
- Tapped trees require large amounts of carbon (C) to regenerate the latex after its collection. Knowing the contribution of C sources involved in latex biosynthesis will help understand how rubber trees face this additional C demand.
- Whole crown $^{13}\text{CO}_2$ pulse labelling was performed on 4-year-old rubber trees in June when latex production was low and in October, when it was high. ^{13}C contents were quantified in the foliage, phloem sap, wood and latex.
- In both labelling periods, ^{13}C was recovered in latex just after labelling, indicating that part of the carbohydrates was directly allocated to latex. However, significant ^{13}C amounts were still recovered in latex after 100 days and the peak was reached significantly later than in phloem sap, demonstrating the contribution of a reserve pool as a source of latex C.
- The contribution of new photosynthates to latex regeneration was faster and higher when latex metabolism was well established, in October than in June.







RESEARCH PAPER

***In situ* $^{13}\text{CO}_2$ labelling of rubber trees reveals a seasonal shift in the contribution of the carbon sources involved in latex regeneration**

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