

## Dynamism in Reserve Carbohydrates until the Following Growth Season in Japanese Apricot 'Nanko' Tree

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### Abstract

The changes in the volume of carbohydrates assimilated each month from summer (Aug.; 2 months after harvest) to late fall (Nov.; just before defoliation) in each organ of the Japanese apricot (*Prunus mume* Siebold & Zucc.) 'Nanko' tree were determined until May the following season.

The <sup>13</sup>C concentrations in the young fruits and new leaves were significantly low at the beginning of May. This phenomenon indicates that their growth depends on current instead of reserve carbohydrates. In May, carbohydrates assimilated in Aug., Sep., and Oct. were mainly transported to 2-year-old twigs (current twigs at <sup>13</sup>C feeding time), roots, and trunk, respectively. Carbohydrates assimilated in Nov. were mainly transported to the flower buds with subsequent flowering at a significantly greater level, and barely transported to the perennial organs. These findings show that carbohydrates that are assimilated each month contribute to different organs and, particularly, that those assimilated in Nov. are important for the growth of flower buds and subsequent flowers; therefore, healthy leaves should be maintained until defoliation for stable production of the fruit of the Japanese apricot tree.

ウメ '南高' 樹体について、安定同位体 <sup>13</sup>C を用いて収穫後の夏季(8月)から落葉期直前の秋季(11月)までの毎月に同化された炭水化物含量の各器官中における変化を、翌年5月の生育期まで調査した。幼果と新葉の <sup>13</sup>C 含有率は5月上旬に著しく低下した。このことから、以降のこれらの器官の生育は、貯蔵養分への依存から当年の同化養分への依存に転換することを示唆している。8, 9, 10月の同化養分は、翌年5月にそれぞれ2年生枝、根および幹に多くの量が転流していた。11月の同化養分は、花芽や花に著しく多くの量が転流した反面、越年器官への転流量は少なかった。以上のことから同化養分の各器官への貢献度は同化された月によって異なることが明らかとなった。11月の同化養分は花芽や花の生育に重要な役割を担っていると考えられることから、ウメ果実の安定生産のためには、落葉期まで葉を健全に保つことが重要であることが示唆された。