



The role of branch architecture in assimilate production and partitioning: the example of apple (*Malus domestica*).

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Résumé en anglais

Understanding the role of branch architecture in carbon production and allocation is essential to gain more insight into the complex process of assimilate partitioning in fruit trees. This mini review reports on the current knowledge of the role of branch architecture in carbohydrate production and partitioning in apple. The first-order carrier branch of apple illustrates the complexity of branch structure emerging from bud activity events and encountered in many fruit trees. Branch architecture influences carbon production by determining leaf exposure to light and by affecting leaf internal characteristics related to leaf photosynthetic capacity. The dynamics of assimilate partitioning between branch organs depends on the stage of development of sources and sinks. The sink strength of various branch organs and their relative positioning on the branch also affect partitioning. Vascular connections between branch organs determine major pathways for branch assimilate transport. We propose directions for employing a modeling approach to further elucidate the role of branch architecture on assimilate partitioning.

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