

# Carotenoid biosynthesis in daucus carota

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© Springer International Publishing Switzerland 2016. Carrot (*Daucus carota*) is one of the most important vegetable cultivated worldwide and the main source of dietary provitamin A. Contrary to other plants, almost all carrot varieties accumulate massive amounts of carotenoids in the root, resulting in a wide variety of colors, including those with purple, yellow, white, red and orange roots. During the first weeks of development the root, grown in darkness, is thin and pale and devoid of carotenoids. At the second month, the thickening of the root and the accumulation of carotenoids begins, and it reaches its highest level at 3 months of development. This normal root thickening and carotenoid accumulation can be completely altered when roots are grown in light, in which chromoplasts differentiation is redirected to chloroplasts development in accordance with an altered carotenoid profile. Here we discuss the current evidence on the biosynthesis of carotenoid in carrot roots in respons