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# Control by light intensity of bud outgrowth along the axis in whole plants of *Rosa hybrida* "Radrazz"

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In ornamentals, particularly in rose, the visual aspect of a plant is an important element of its quality. In rose bush, the visual quality depends on many objective criteria, including plant shape and compactness that vary with branching (Boumaza et al. 2009). Bud outgrowth, which is at the origin of branching, is controlled by a network of interacting hormones. The three main families are auxin and strigolactones, which inhibit bud outgrowth, and cytokinins, which promote it; the hormonal signal varies along the shoot and is responsible for various branching patterns (Domagalska et Leyser 2011). Light environment strongly impacts branching (Leduc et al. 2014; Demotes-Mainard et al. 2015; Huché-Thélier et al. 2015), notably low light intensity decreases bud outgrowth in many species, including rose (Furet et al. 2014). Decreasing light intensity can reduce photosynthesis and thus sugar availability. A natural hypothesis that emerges is that decreasing light intensity limits bud outgrowth via a shortage of sugars necessary for bud growth (Girault et al. 2010). Recent studies also suggest that sugars can act as a signal that triggers bud outgrowth through modulation of hormonal signals (Barbier et al. 2015). However, the mechanisms by which light environment affects bud outgrowth, especially the mediating role of hormones and nutrients in this regulation, is still poorly understood. This poster presents preliminary results on the mechanisms involved in the inhibition of bud outgrowth by a decrease in light intensity in rose. The study is conducted on whole plants and attention is paid to the location of bud outgrowth along the shoot.

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