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Functional Plant Biology

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Cover illustration: *Brachypodium distachyon* treated with Lucifer Yellow CH (LYCH) and HPTSA for 16 h (see Zhivotovsky Castello *et al*. pp. 598–608). (*Top left*) A three channel confocal micrograph showing cell wall autofluorescence (white, excited by a 405 laser line), LYCH fluorescence (yellow), and chlorophyll autofluorescence (red). (*Top right*) Same field of view as (*Top left*), but without the autofluorescence channel so that any signal in the LYCH channel can be seen. (*Bottom left*) *B. distachyon* crease region after uptake of HPTSA, demonstrating the movement of phloem-mobile compound into the caryopsis. Similar to what was observed in *Triticum aestivum*, the dark region in the centre of the image is likely xylem cells. (*Bottom right*) A cross-section of the palea surrounding the caryopsis shown in (*Top left*) and (*Top right*), demonstrating LYCH has reached the height of the caryopsis after the 16 h treatment. Crease region (arrowheads), crease vascular bundle (vb). Scale bars = 50 μm. Images by Andrew J. Bowling.