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Responses of Lotus corniculatus to environmental change 4

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Responses of *Lotus corniculatus* to environmental change. 4.

Root carbohydrate levels at defoliation and regrowth climatic conditions are important drivers of variation in phenolic content and forage quality.

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SUPPORTING INFORMATION

Fig. S1 Kinetics of non-structural carbohydrate (NSC) accumulation in leaves of plants regrown for 6 weeks at 350ppm CO₂-100% water (**a,e**), 350ppm CO₂ - 60% water (**b, f**), 700ppm CO₂ -100% water (**c,g**), and 700ppm CO₂ - 60% water (**d,h**) following pre-treatment of plants grown for 8 weeks at either 25°C (**a-d**) or 10°C (**e-h**) (see Table 1). TNC – total non-structural carbohydrates Suc-sucrose, G+F – glucose+fructose.

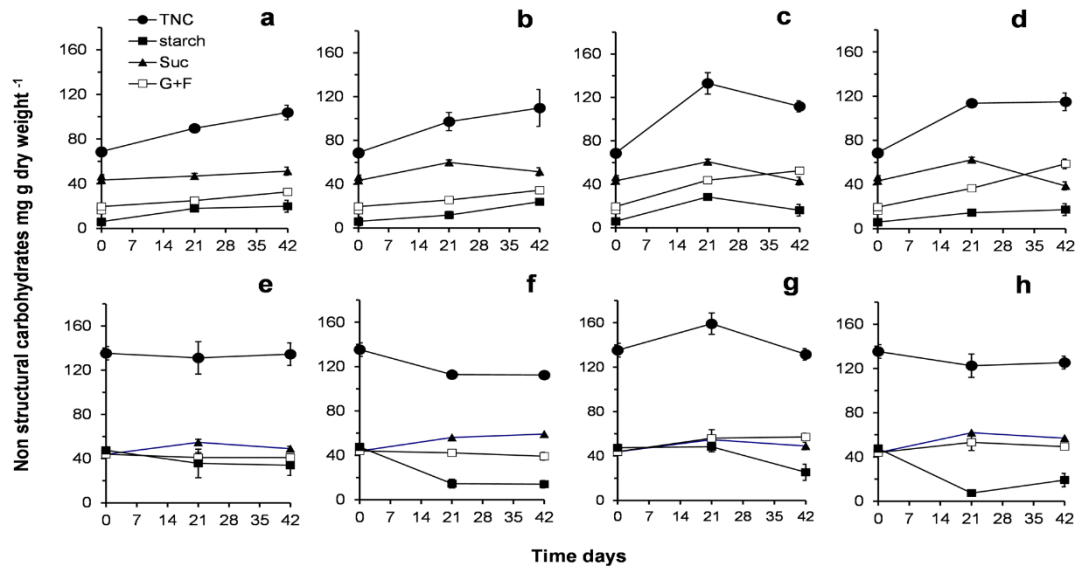


Fig. S2 Kinetics of NSC accumulation in stems of plants regrown for 6 weeks at 350ppm CO₂ -100% water (**a e**), 350ppm CO₂ - 60% water (**b,f**), 700ppm CO₂ - 100% water (**c,g**), 700ppm CO₂ - 60% water (**d,h**) following pre-treatment of plants grown for 8 weeks at either 25°C (**a-d**) or 10°C (**e-h**) or (see Table1). TNC–total non-structural carbohydrates Suc- sucrose, G+F– glucose+fructose.

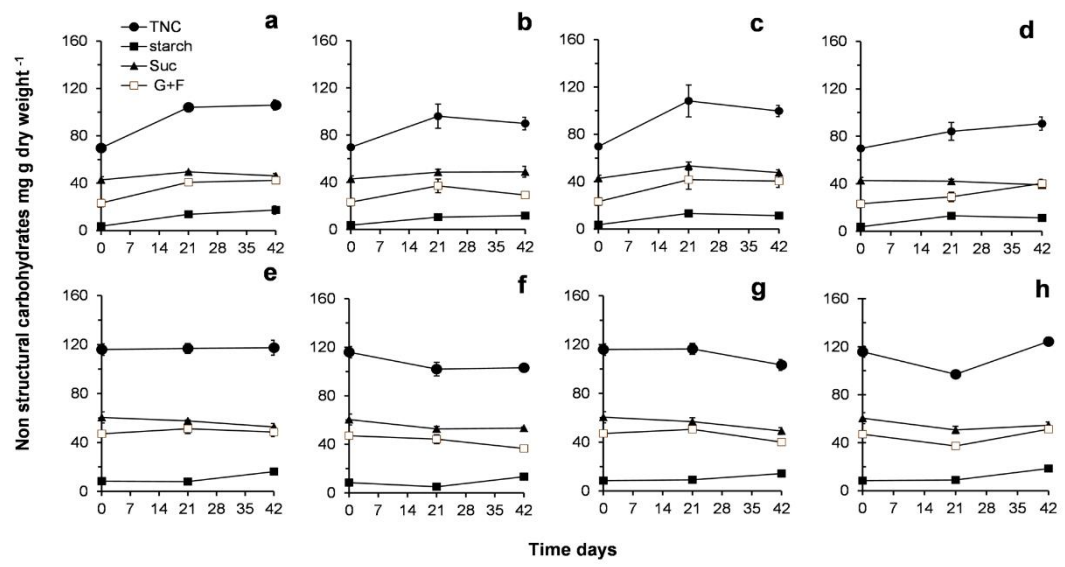


Fig. S3 Kinetics of NSC accumulation in roots of plants regrown for 6 weeks at 350ppm CO₂-100% water (**a,e**), 350ppm CO₂ -60% water (**b,f**), 700ppm CO₂ - 100% water (**c,g**), 700ppm CO₂- 60% water (**d, h**) following pre-treatment of plants grown for 8 weeks at either 25°C (**a-d**) or 10°C (**e-h**) (see Table1).TNC – total non-structural carbohydrates, Suc- sucrose, G+F– glucose+fructose.

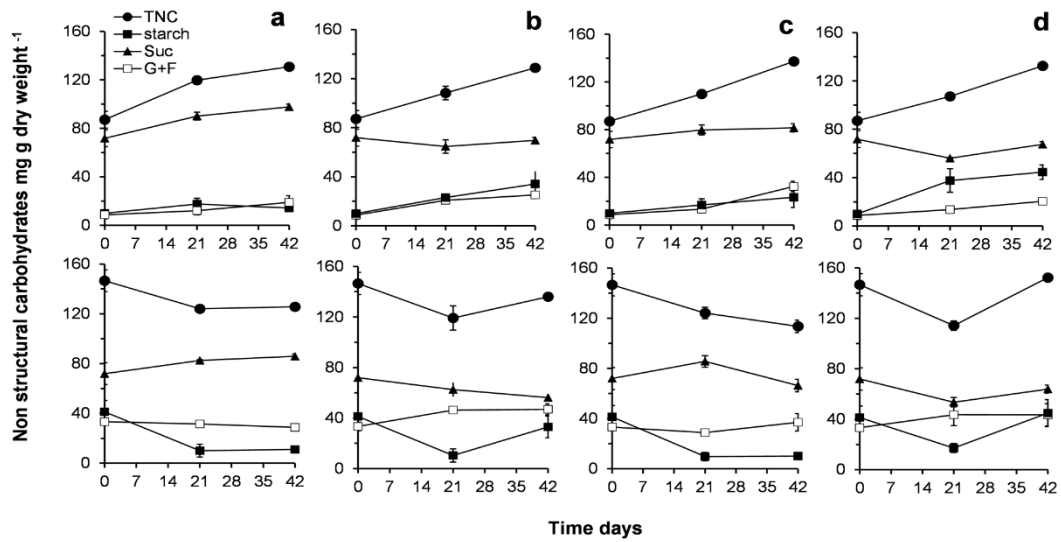


Fig. S4 Kinetics of soluble and insoluble condensed tannin accumulation in leaves of plants regrown for 6 weeks at 350ppm CO₂-100% water (**a,e**), 350ppm CO₂-60% water (**b,f**), 700ppm CO₂-100% water (**c,g**), 700ppm CO₂-60% water (**d,h**) following pre-treatment of plants grown for 8 weeks at either 25°C (**a-d**) or 10°C (**e-h**) (see Table1). Zero-time values represent the tannin content of leaves prior to defoliation.

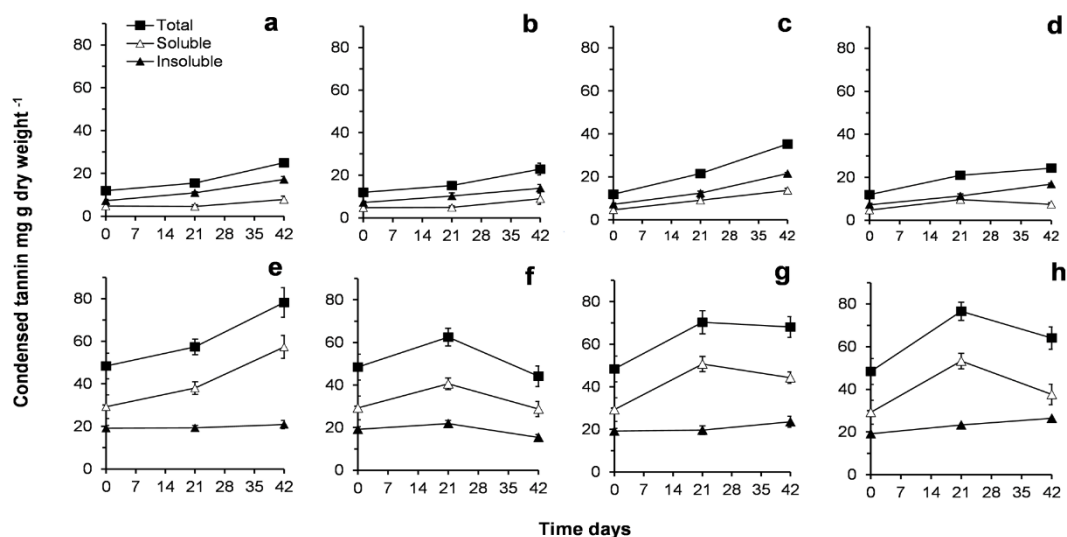


Fig. S5 Kinetics of soluble and insoluble condensed tannin accumulation in stems of plants regrown for 6 weeks at 350ppm CO₂-100% water (**a,e**), 350ppm CO₂ - 60% water (**b,f**), 700ppm CO₂ - 100% water (**c,g**), 700ppm CO₂ - 60% water (**d,h**) following pre-treatment of plants grown for 8 weeks at either 25°C (**a-d**) or 10°C (**e-h**) (see Table1).

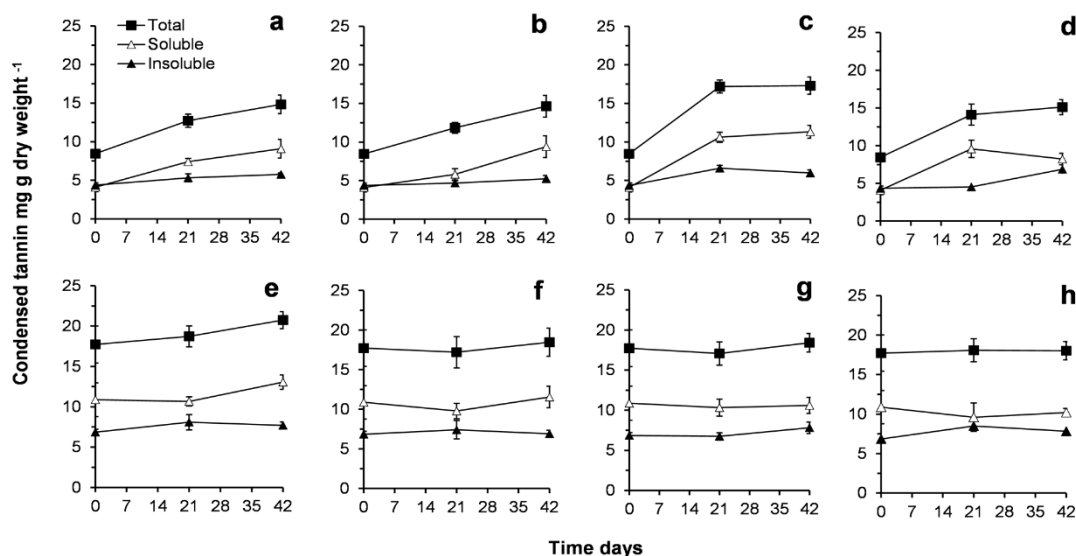


Fig. S6 Kinetics of total condensed tannin (bound) accumulation in roots of plants regrown for 6 weeks at 350ppm CO₂-100% water (350/100), 350ppm CO₂ -60% water (350/60), 700ppm CO₂ -100% water (700/100), 700ppm CO₂-60% water (700/60)) following pre-treatment of plants grown for 8 weeks at either 25°C (**a**) or 10°C (**b**).

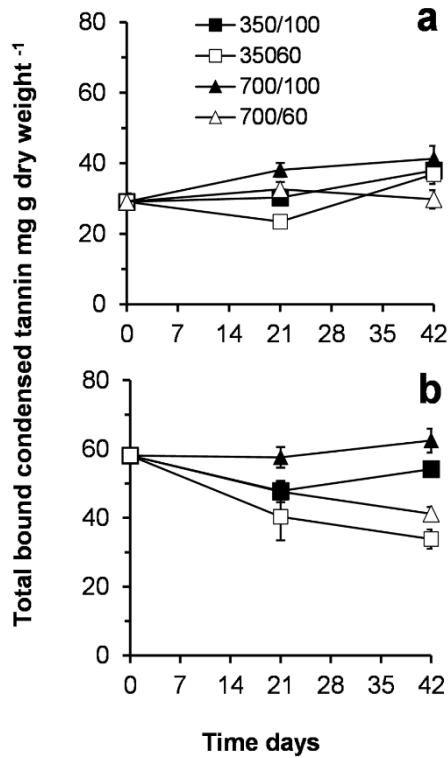


Fig. S7 HPLC profiles and UV/Visible spectra of MeOH extract of *L. corniculatus* S41 leaves (a) and after hydrolysed with 1 NaOH at 100 °C for 1 h (b) and flavonol standard kaempferol (c). Spectra of peaks in panel a (d), spectra of peaks in panel b (e) and spectra of kaempferol standard in panel c (f). Peaks 1-4 in panel (b) show characteristic spectra of hydroxycinnamic acids (e) and peaks 6 and 7 are unknown flavonoids.

