Leaf green-white variegation is advantageous under N deprivation in Pelargonium × hortorum

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Fig. S1. Heat map representation of metabolomic data, differentiating the effect of leaf tissue (A) and that of time (B) by a 2-way ANOVA. Metabolites shown are only significant ones ($P<0.05$). Here, sampling times are numbered from 0 (week 0) to 9 (week 9). 63 were differentially abundant in variegated-white/variegated-green/plain tissues (effect of leaf tissue, A) and 30 were significantly affected by N-deprivation/time (effect of time, B). There is no metabolite in interaction. Plain morphs are indicated by P, green and white tissues of variegated morphs by VG and VW, respectively. Numbers after metabolite names (e.g., Gin 1, Gin 2, etc.) stand for distinct derivatives (analytes) observed by GC-MS. The green-black-red color scale stands for relative (mean-centered) metabolite content (green, low; red, high).
Fig. S2. Correlation coefficient ($R = \frac{\text{cov}(m_i, t)}{s_i s_t}$) where $\text{cov}(m_i, t)$ is the covariance between metabolite $i$ and time, and $s_i$ and $s_t$ are the standard deviations of metabolite $i$ and $t$, respectively) between metabolite content and time in plain and variegated morphs. The horizontal dotted line stands for the threshold of 0.8. Colours indicate $R$ values (scale on the right hand side): green (anticorrelated: decrease with time), white (no correlation at all), and red (positively correlated: increase with time). Note that the present correlation analysis allows one to see monotonic trends in metabolite change over the time course of the experiment; in fact most metabolites showed a monotonic variation with time, with the exception of branched amino acids Ile, Leu and Val (Fig. S1B).
Fig. S3. Relationship between nitrate content in leaves in plain (closed symbols) and variegated (green area, semi-filled symbols; white area, open symbols) morphs under control conditions (x-axis) and under N-deprivation (y-axis). The continuous line stands for the 1:1 line. Dotted lines define the ±50% region. Data points correspond to the different sampling times (weeks 0 to 9), with each point being the mean of three determinations.
Fig. S4. Magnified version of Fig. 4.