Supplementary material Methods S2. Plant measurements performed

2.5.1 Non-invasive evaluation of leaf coloration in growth stages

(i) Leaf SPAD value, approximating chlorophyll content, was determined by using a SPAD-502 (Konica Minolta Corp., Solna, Sweden).

(ii) The index of absorbance difference (I_{AD}) was computed as the difference between the absorbance values at 670 and 720 nm, near the chlorophyll absorbance peak (Costa et al., 2009) by using the DA meter (tr DA Meter, T.R. Turoni, Italy).

(iii) Leaf colour was quantified by using a Chroma Meter (Model CR-400, Minolta Corp., Japan). CIE L*a*b* coordinates were recorded using D65 illuminants and a 10° Standard Observer as a reference system. L* [a measure of lightness, ranging from 0 (black) to 100 (white)], a* (a measure of intensity in the green to red range, where negative values refer to green and positive to red), and b* (a measure of representing intensity in the blue to yellow range, where negative values refer to blue and positive to yellow) were obtained.

2.5.2 Non-invasive evaluation of photosynthetic performance in growth stages

Measurements were performed by using a chlorophyll fluorometer (OS-30P, Op-tiSciences, Hudson, NH, USA). Prior to evaluation, leaves were dark adapted (≥ 20 min) by employing leaf clips. F_v/F_m was assessed by applying a saturated photosynthetic photon flux density of 3000 μmol m^{-2} s^{-1}.

2.5.3 Leaf shape indicators

Leaf shape traits were derived from images acquired by a digital camera (Sony DSC-W830, Sony Corporation, Tokyo, Japan) under non-reflective glass from 0.5 m, employing a copy stand. Using specialized software (ImageJ; Wayne Rasband/NIH, Bethesda, MD, USA), leaf lamina outlines were processed to estimate the following four (dimensionless) metrics of leaf form: (a) aspect ratio [(major axis) / (minor axis); axes of the best-fitted ellipse]; (b) circularity [$(4\pi \times \text{area}) / (\text{perimeter})^2$]; (c) roundness [$(4 \times \text{area}) / [4\pi \times (\text{major axis})^2]$], and (d) solidity [(area) / (convex area)] [6]. Each metric quantifies a distinct feature of leaf shape. Aspect ratio and roundness are affected by the length to width ratio, while circularity and solidity are sensitive to serration and lobing. Aspect ratio ranges from 1 (circle) to value without upper bound (infinitely narrow). Roundness ranges

from 0 (infinitely narrow) to 1 (circle). Circularity ranges from 0 (infinitely narrow) to 1 (circle). Solidity ranges from 0 to 1, being inversely related to boundary irregularities. Solidity is sensitive to leaves with deep lobes or a distinct petiole and can be employed to detect leaves lacking such structures. Solidity, unlike circularity, is not greatly influenced by serrations and minor lobing.

2.5.4 Plant growth and biomass partitioning to generative organs

As given in the original article.

2.5.5 Leaf chlorophyll and carotenoid contents

Following fine chopping, portions (0.5 g) were homogenized with the addition of 10 mL of 80% acetone. This primary acetone extract was then filtered, and the filtered extract was diluted by adding 2 mL of 80% acetone per mL of extract. Since chlorophyll is light sensitive, extraction took place in a dark room. The obtained extract was subjected to reading on a spectrophotometer (Mapada UV-1800, Mapada Instruments Co., Ltd., Shanghai, China). Total chlorophyll and carotenoid contents were calculated.

2.5.6 Leaf total phenolic and total flavonoid contents

Samples (0.1 g) were extracted with 1 mL of 80% aqueous methanol in an ultrasonic bath (10 min) and were then centrifuged (15000 g for 10 min). The absorbance against prepared reagent blank was determined using a microplate reader (Infinite 200 PRO, TECAN, Switzerland). For total phenolic content, gallic acid was used as the standard reference and gallic acid equivalent (GAE) was expressed as mg per g fresh mass. For total flavonoid content, Rutin was used as the standard reference and rutin equivalent (RUE) was expressed as mg per g fresh mass.

2.5.7 Leaf soluble sugar content

Samples (0.1 g) were incubated with 1 mL deionized water in a water bath (100 ^{o}C for 30 min). The homogenate was centrifuged (15000 g for 15 min) at room temperature (25 ^{o}C). Then, 0.1 mL of the solution was mixed with anthranone ethyl acetate and sulphuric acid. Soluble sugar content was assayed in the supernatant by measuring the absorbance at 630 nm, using a spectrophotometer (Mapada UV-1800, Mapada Instruments Co., Ltd., Shanghai, China).

2.5.8 Leaf and inflorescence nutrient analysis

Samples were washed with distilled water and then dried. The biomass was dried at 70 °C, weighed, ground, and then analyzed for total N by the Kjeldahl method (Bremner, 1996). In addition, sub-samples were ashed at 500 °C for at least 4 h (Mills and Benton-Jones, 1996), the ash was dissolved in 2 M HCl, filtered, and P, K, Ca, Mg, Na, Cu, Zn, Fe, Mn, and B were determined in the filtrate, employing the methods of analytical determinations reported previously. Nutrient content was expressed on a per dry weight basis.

More information is provided by Paschalidis et al. (2021) and Fanourakis et al. (2021)