

Supplementary Figures

Low red / far-red ratios delay spike and stem growth in wheat

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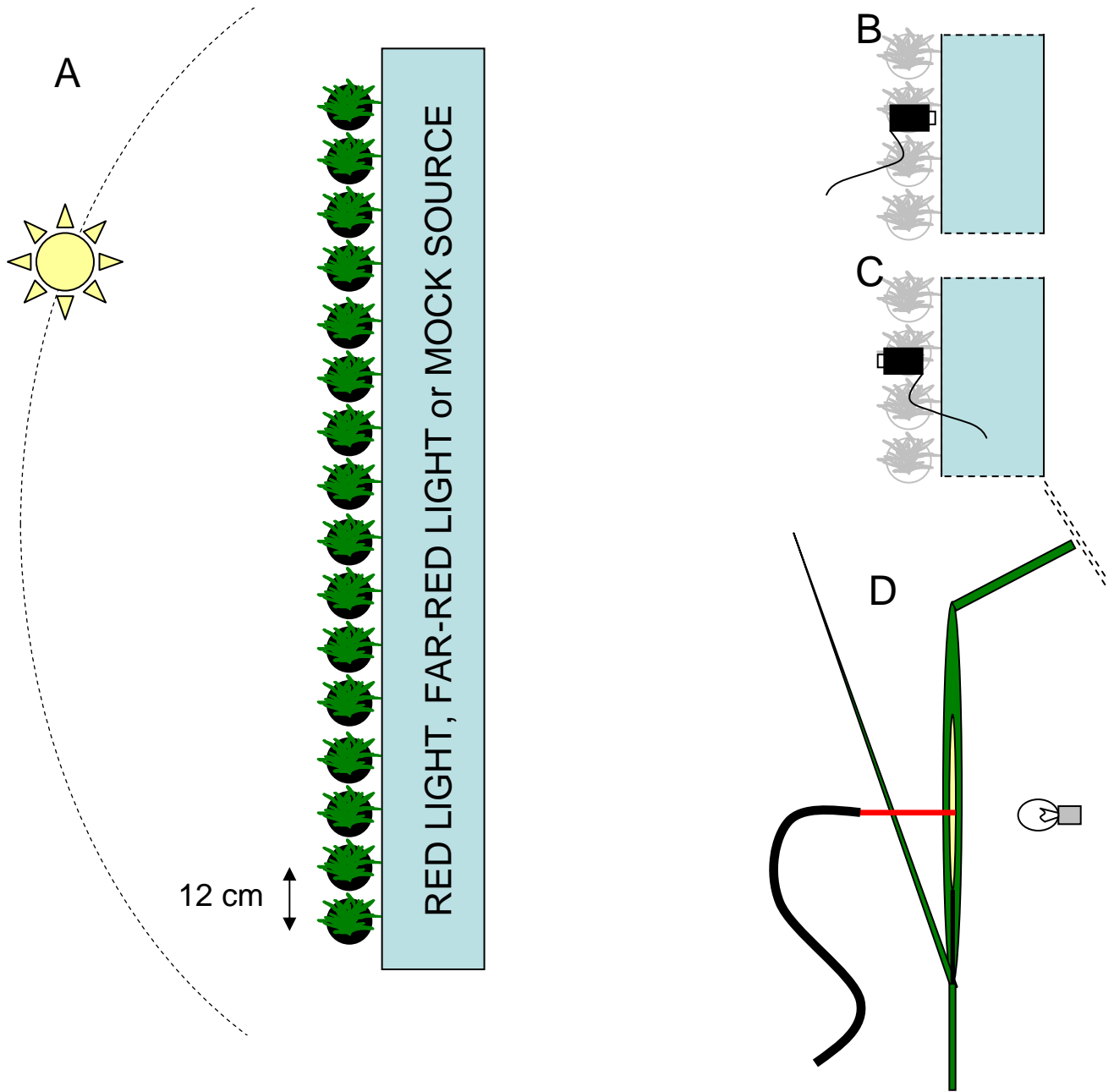


Figure S1. Experimental setting (A). Pots were placed in a single row leaving a distance of 12 cm between neighbour plants. The light sources were East-West oriented, placed at plant height and towards the South side of the plants to avoid shading the plants. Measurement of the light provided by the different sources (B) and calculation of the horizontal integral R/FR ratio received by the plants treated with R or FR only from one side (B, C). The sum of R fluence rates measured with the sensor facing towards (B) and against (C) the light source was divided by the sum of FR fluence rates measured with the sensor facing towards (B) and against the light source (C). Measurement of the PAR and R/FR ratio (relative to the light source) (D). The shoot was taken to the laboratory, pierced with a fibre optics at the position of the developing spike inside the sheath tube and irradiated from one side, facing the tip of the fibre optics. The fibre optics reached the face of the spike opposite to the place of penetration as shown in the longitudinal section of the shoot.

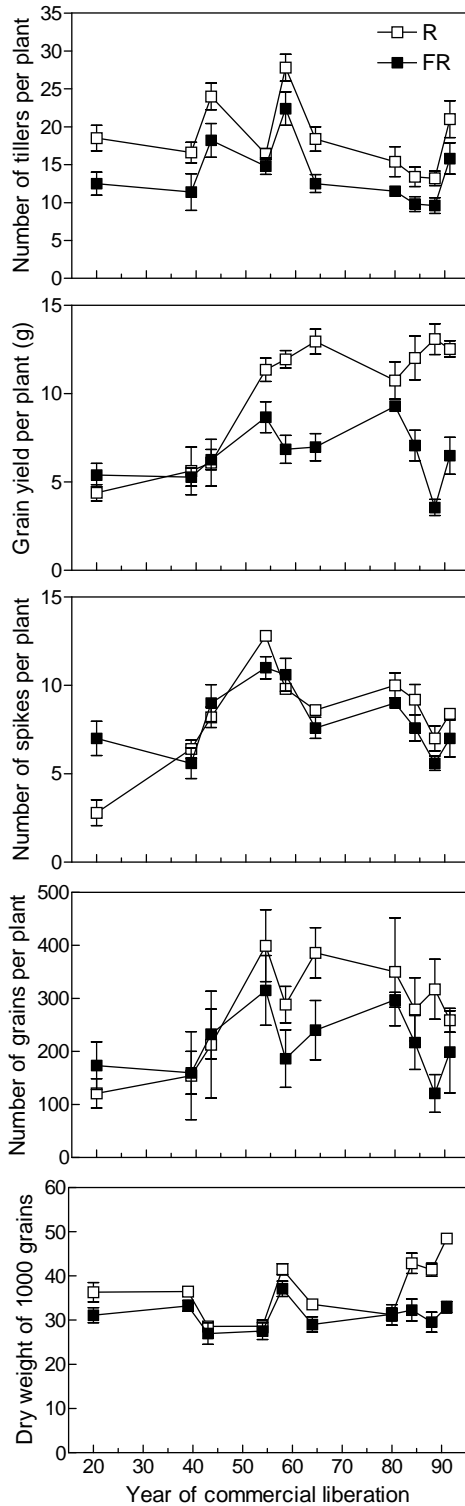


Figure S2. Number of tillers per plant 64 d after sowing, grain yield per plant, number of spikes per plant, number of grains per plant and weight of 1000 grains plotted against the year of release of each cultivar in the 20th century as affected by high R/FR (supplementary R) or low R/FR (supplementary FR). Data (means and SE of 5 replicates) correspond to one of the three years of experimentation included in Figures 1B and 2B.

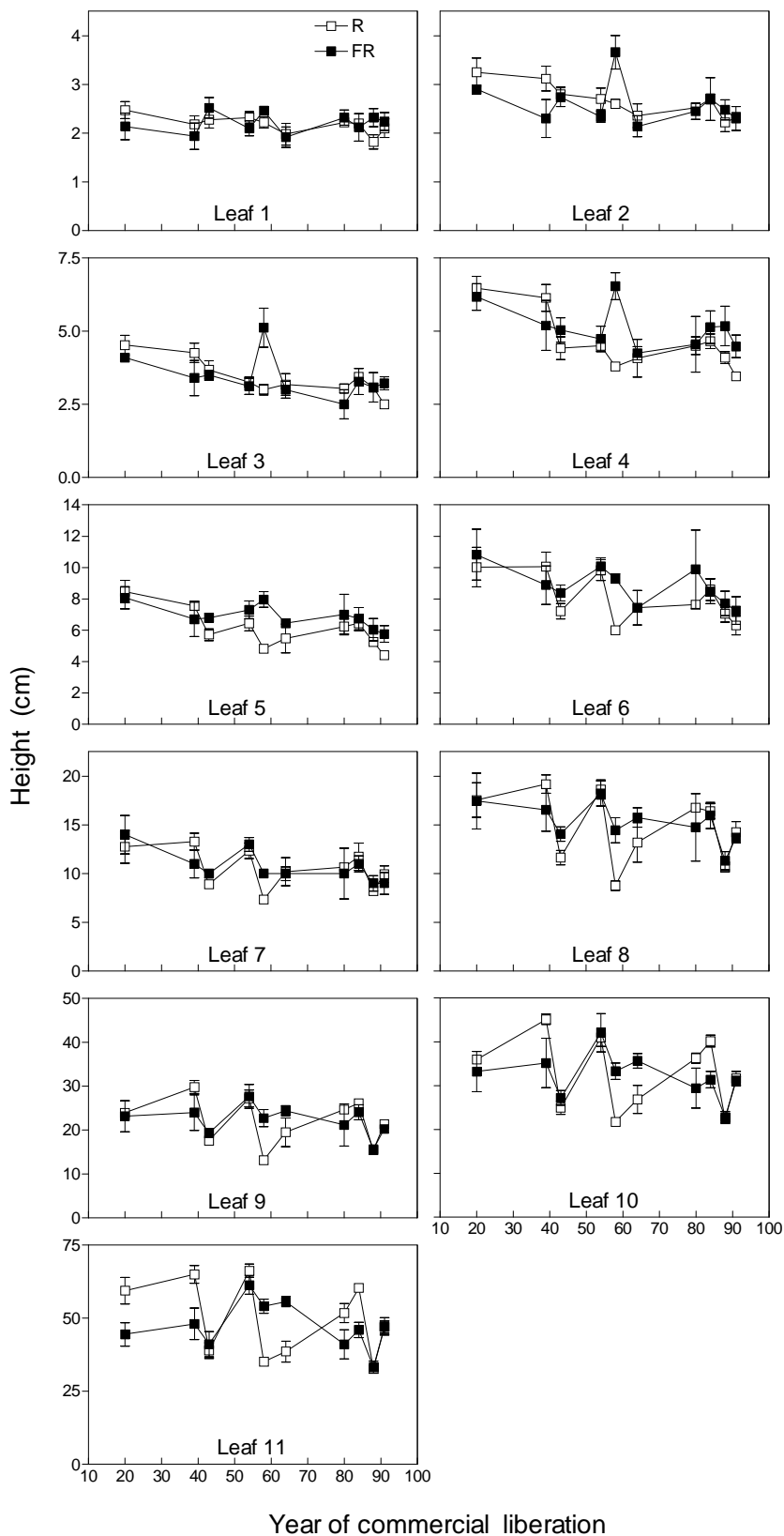


Fig. S3: Final height of the sheath (junction of the leaf-blade and leaf-sheath) of the different leaves plotted against the year of release of each cultivar in the 20th century as affected by high R/FR (supplementary R) or low R/FR (supplementary FR). Data are means and SE of 5 replicates from one year of experimentation.

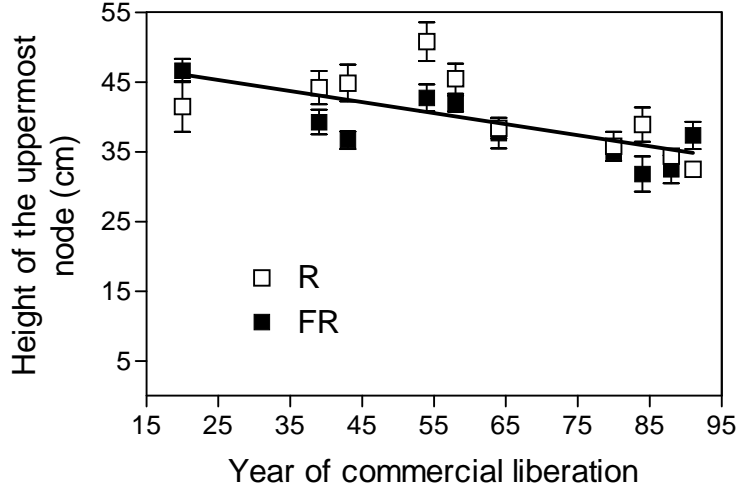


Fig. S4. Final height of the uppermost node plotted against the year of release of each cultivar in the 20th century as affected by high R/FR (supplementary R) or low R/FR (supplementary FR). Data are means and SE of 5 replicates from one year of experimentation. There is a significant relationship between node height and year of cultivar release to the market indicated by the straight line ($y = 49 [\pm 2.53] - 0.16 [\pm 0.04] x$, $P < 0.001$). The slopes and intercepts were unaffected by R/FR.

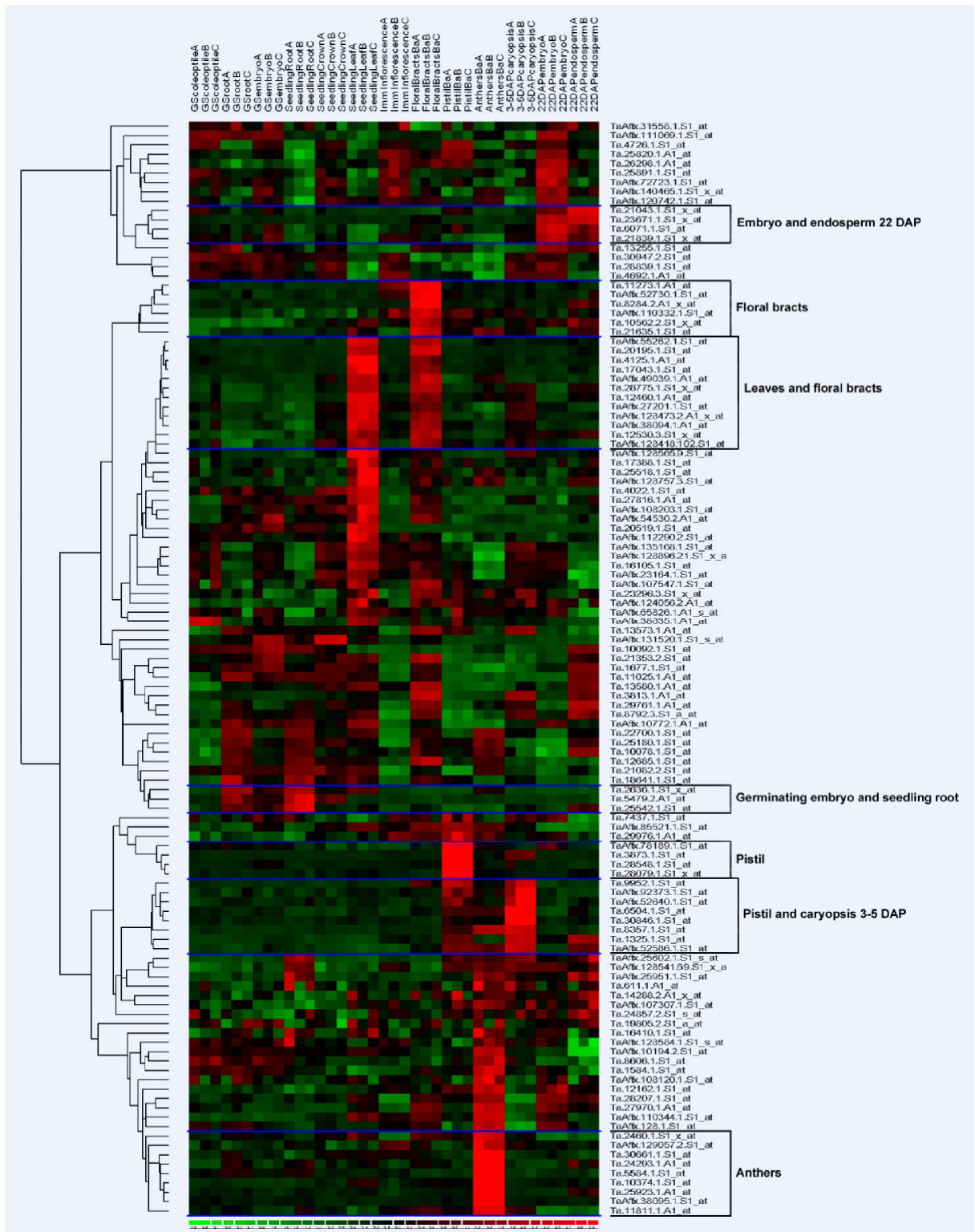


Fig. S5. Genes with expression in the spike affected by the R/FR treatments grouped in clusters according to their expression patterns in different organs.

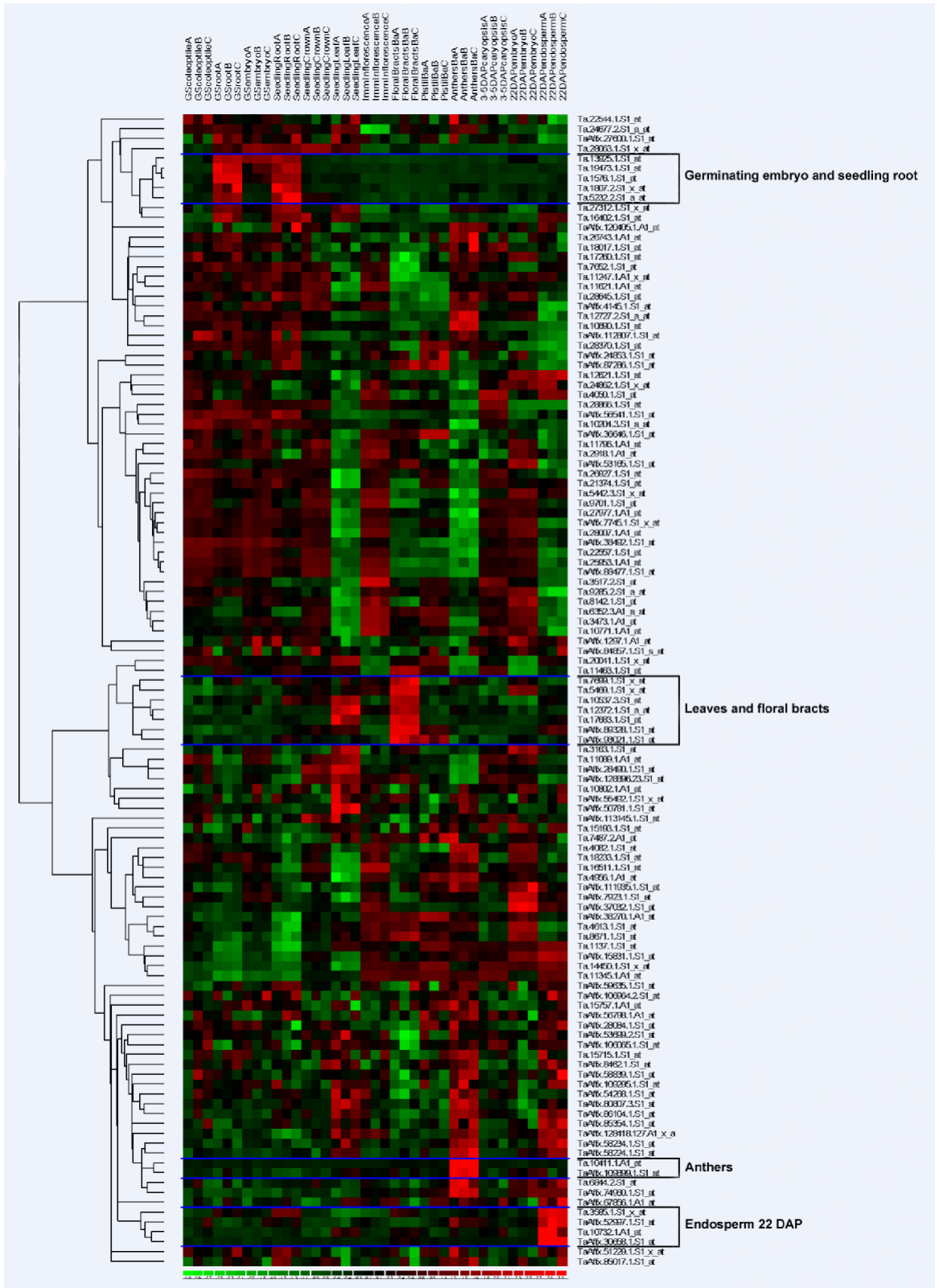


Fig. S6. Randomly selected genes grouped in clusters according to their expression patterns in different organs.