

Figure S1. Layout plan for application of different pre- and post-emergence herbicides on *Dactyloctenium aegyptium*.

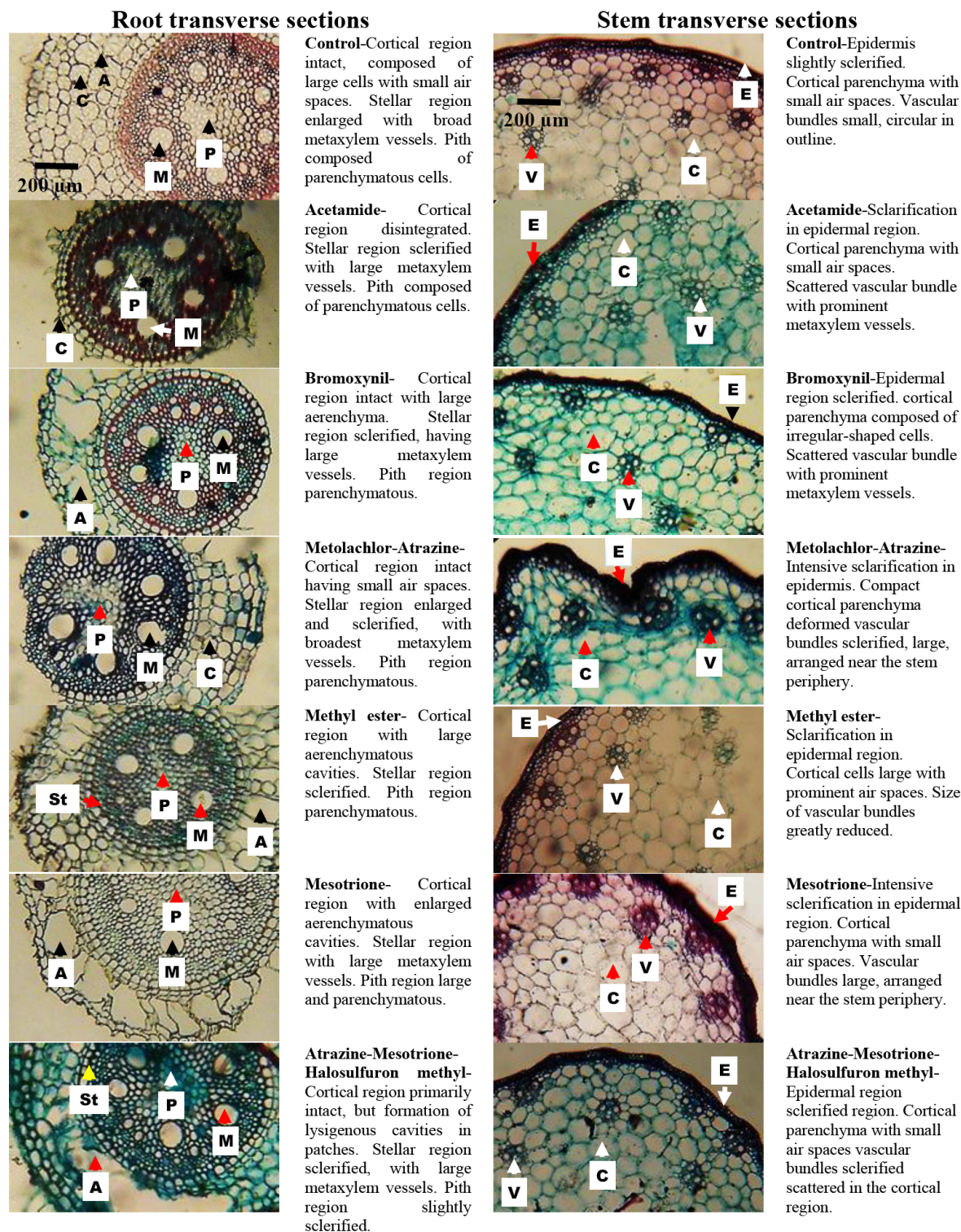
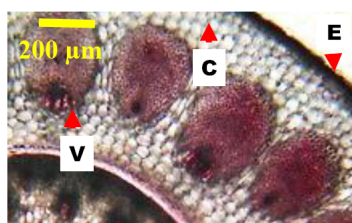


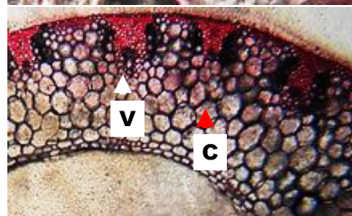
Figure S2. Response of root and stem anatomical characteristics of *Dactyloctenium aegyptium* to pre- and post-emergence herbicides. All figures are captured at 40X. Scales are given in the topmost figures.

A: Aerenchyma, C: Cortex, E: Epidermis, M: Metaxylem, P: Pith, St: Stellar region, V: Vascular bundle.

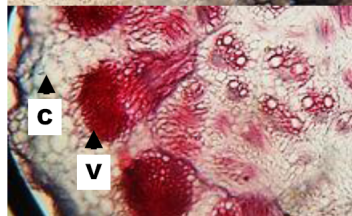
Leaf sheath transverse sections



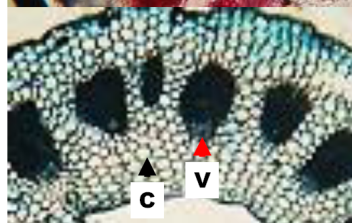
Control- Cortical cell compactly arranged. Vascular bundles large and obovate. Epidermis intensively sclerified.



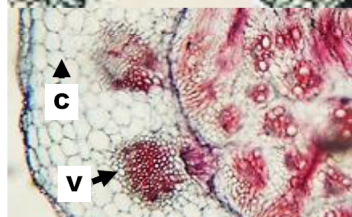
Acetamide- Cortical cells large, compactly arranged. Vascular bundles small. Intensive sclerification outside vascular bundles.



Bromoxynil- Cortical region comprised of irregular-shaped parenchymatous cells. Vascular bundles intensively sclerified.



Metolachlor-Atrazine- Cortical cells consist of small, compact parenchymatous cells. Vascular bundles intensively sclerified.



Methyl ester- Cortical cells large, parenchymatous and arranged in an irregular pattern. Vascular bundles slightly sclerified.

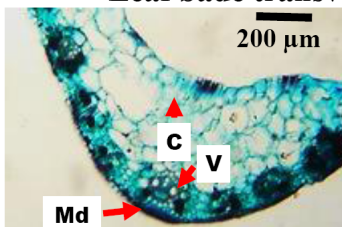


Mesotrione- Cortical parenchyma thick, composed of large, irregular-shaped parenchymatous cells. Vascular bundles small, slightly sclerified.

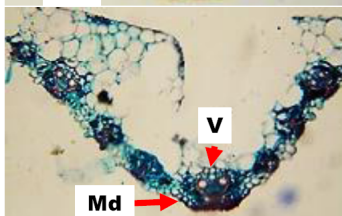


Atrazine-Mesotrione-Halosulfuron methyl- Thick leaf sheath, mainly having high proportion of cortical parenchyma and large vascular bundles.

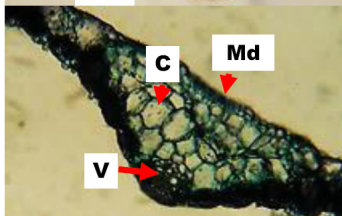
Leaf blade transverse sections



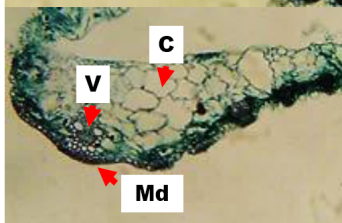
Control- Vascular bundles large. Cortical cell large. Midrib thick.



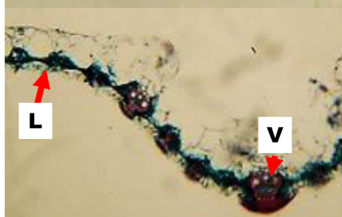
Acetamide- Midrib thick, central vascular bundle sclerified.



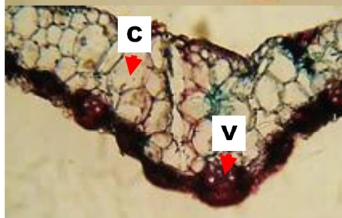
Bromoxynil- Midrib thin, vascular bundles small. Reduced and intensively sclerified cortical region.



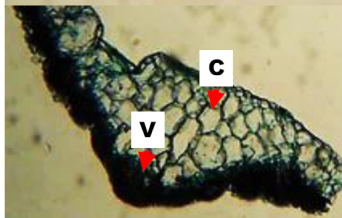
Metolachlor-Atrazine- Midrib thin, vascular bundles extremely reduced. Cortical parenchyma irregular-shaped.



Methyl ester- Lamina thickness greatly reduced. Central vascular bundle large and extensively sclerified.



Mesotrione- Leaf shape deformed. Cortical cells large and irregular-shaped.



Atrazine-Mesotrione-Halosulfuron methyl- Vascular bundles small and extensively sclerified. Cortical cells large and irregular-shaped.

Figure S3. Response of leaf sheath and leaf blade anatomical characteristics of *Dactyloctenium aegyptium* to pre- and post-emergence herbicides. All figures are captured at 40X. Scales are given in the topmost figures. C: Cortex, E: Epidermis, L: Lamina, Md: Midrib, V: Vascular bundle

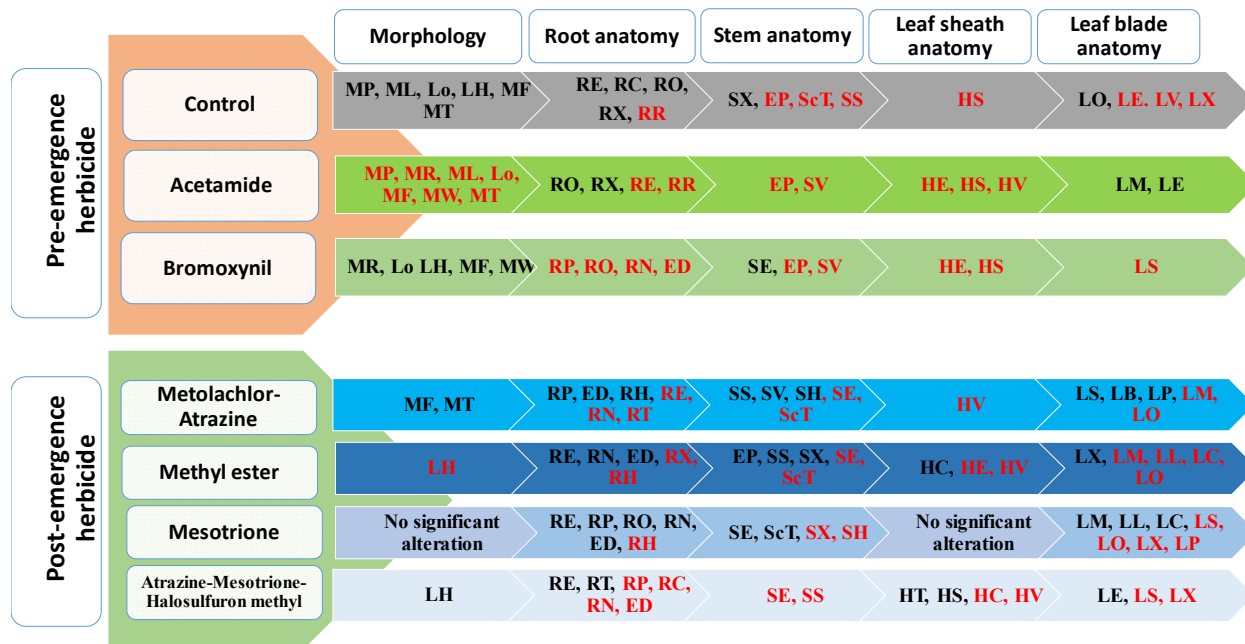


Figure S4. Proposed model of the overall impact of pre- and post-emergence herbicides on morpho-anatomical attributes of *Dactyloctenium aegyptium*

Color of attributes: Black font color indicates an increase over control, while red font color indicates a decrease over control

Herbicides: Cg-Caster Gold, Ct-Control, D-Dafli, Fg-Falisto Gold, Og-Orcus Gold, Pr-Primextra, Re-Relax

Morphology: Lo-Leaves per plant, MD-Root dry weight, MF-Root fresh weight, ML-Leaf area, MP-Plant height, MR-Root length, MT-Stem fresh weight, MU-Stem dry weight, MW-Leaf fresh weight, MX-Leaf dry weight

Root anatomy: ED-Endodermal cell area, EP-Epidermal cell area, RC-Cortical region thickness, RD-Root radius, RE-Epidermal thickness, RH-Phloem area, RN-Endodermal thickness, RO-Cortical cell area, RP-Epidermal cell area, RR-Pericycle thickness, RT-Pith area, RX-Metaxylem area

Stem anatomy: ScT-Cortical cell area, SC-Epidermal cell area, SE-Epidermal thickness, SH-Phloem area, SR-Stem radius, SS-Sclerenchymatous thickness, SV-Vascular bundle area, SX-Metaxylem area

Leaf sheath anatomy: HE-Epidermal thickness, HO-Cortical cell area, HS-Sclerenchymatous thickness, HT-Sheath thickness, HV-Vascular bundle area

Leaf blade anatomy: LC-Cortical cell area, LE-Epidermal thickness, LL-Lamina thickness, LM-Midrib thickness, LO-Mesophyll cell area, LP-Phloem area, LSL-Leaf sheath length, LS-Mesophyll thickness, LV-Vascular bundle area, LX-Metaxylem area