



Effect of sainfoin (*Onobrychis viciifolia*) on cyathostomin eggs excretion, larval development, larval community structure and efficacy of ivermectin treatment in horses

Joshua Malsa, Elise Courtot, Michel Boisseau, Bertrand Dumont, Pascale Gombault, Tetiana A. Kuzmina, Marta Basiaga, Jérôme Lluch, Gwenolah Annonay, Sophie Dhorne-Pollet, et al.

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INRAE Effect of sainfoin (*Onobrychis viciifolia*) on cyathostomin eggs excretion, larval development, larval community structure and efficacy of ivermectin treatment in horses

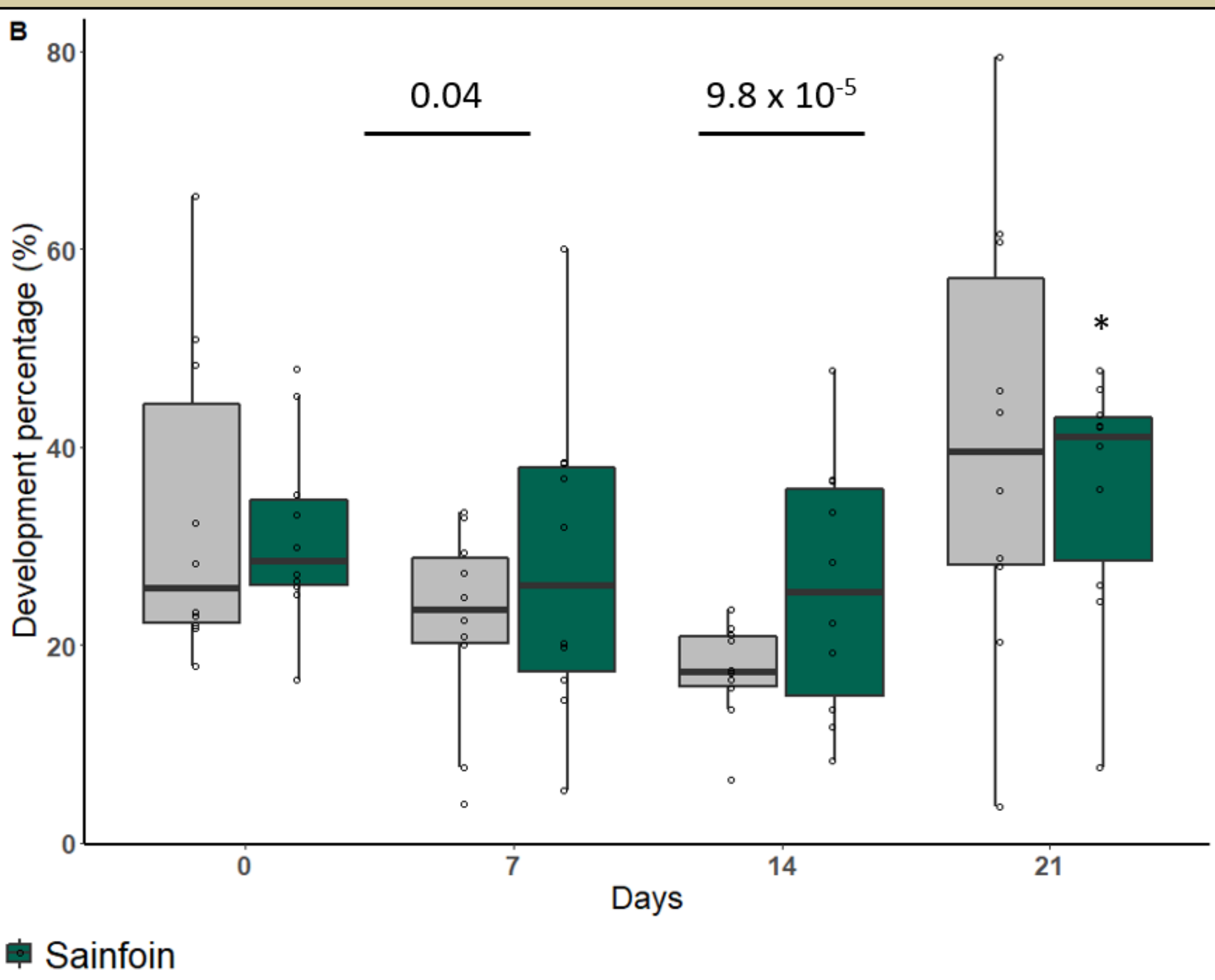
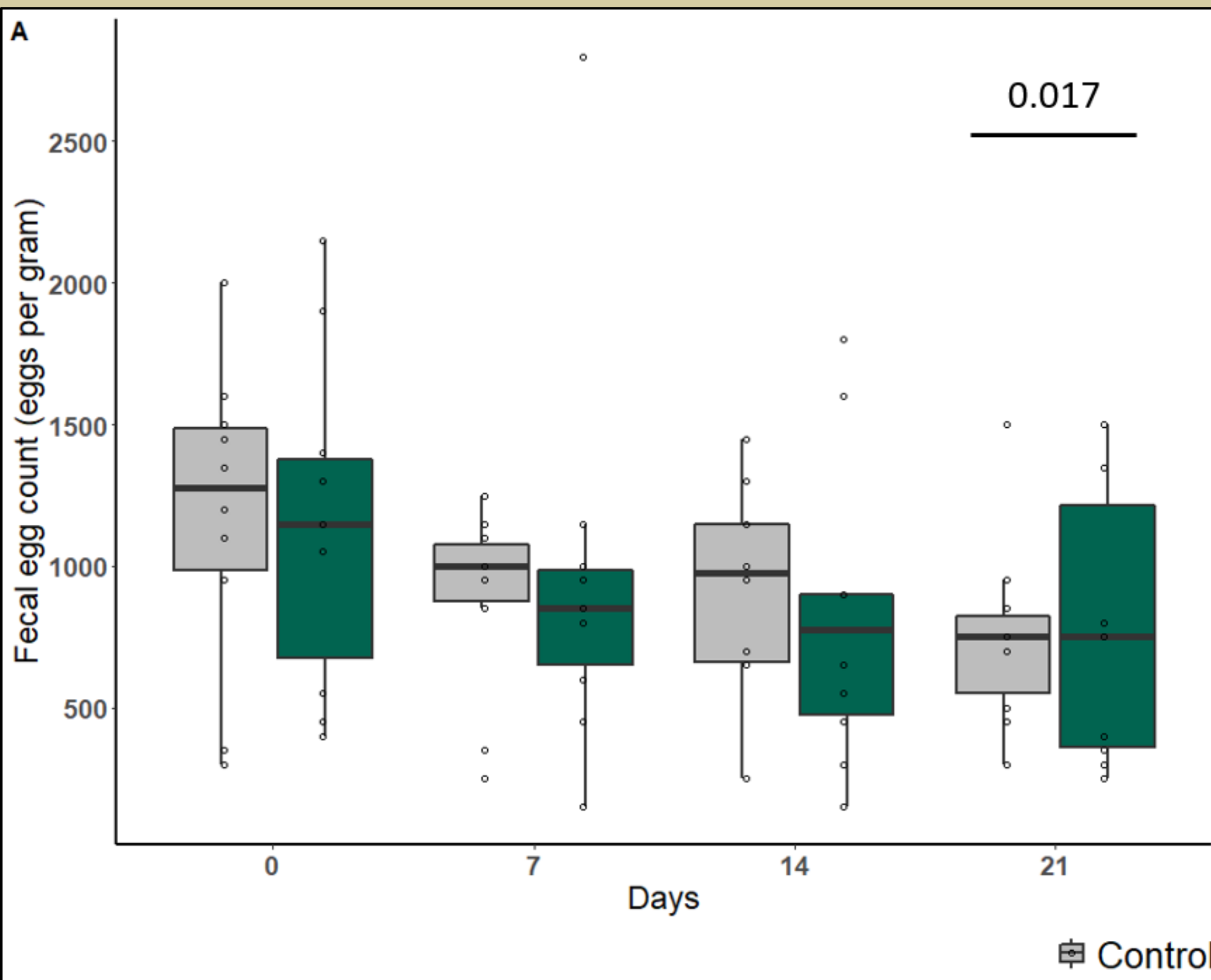
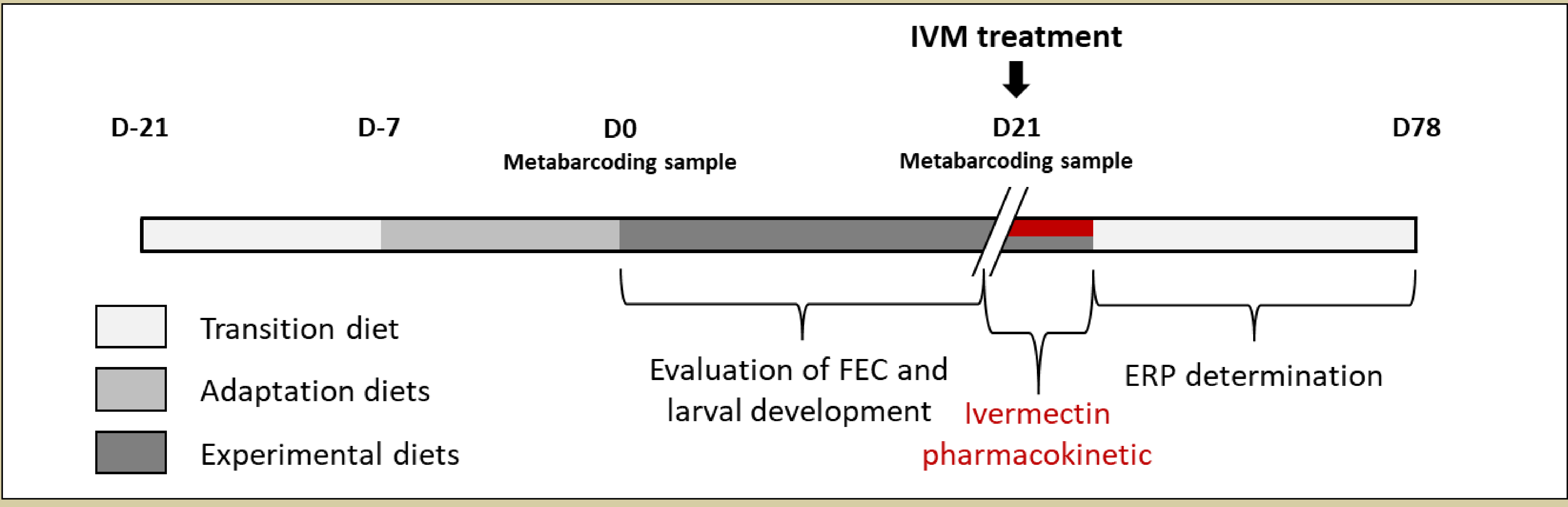
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Sainfoin from plant to pellet



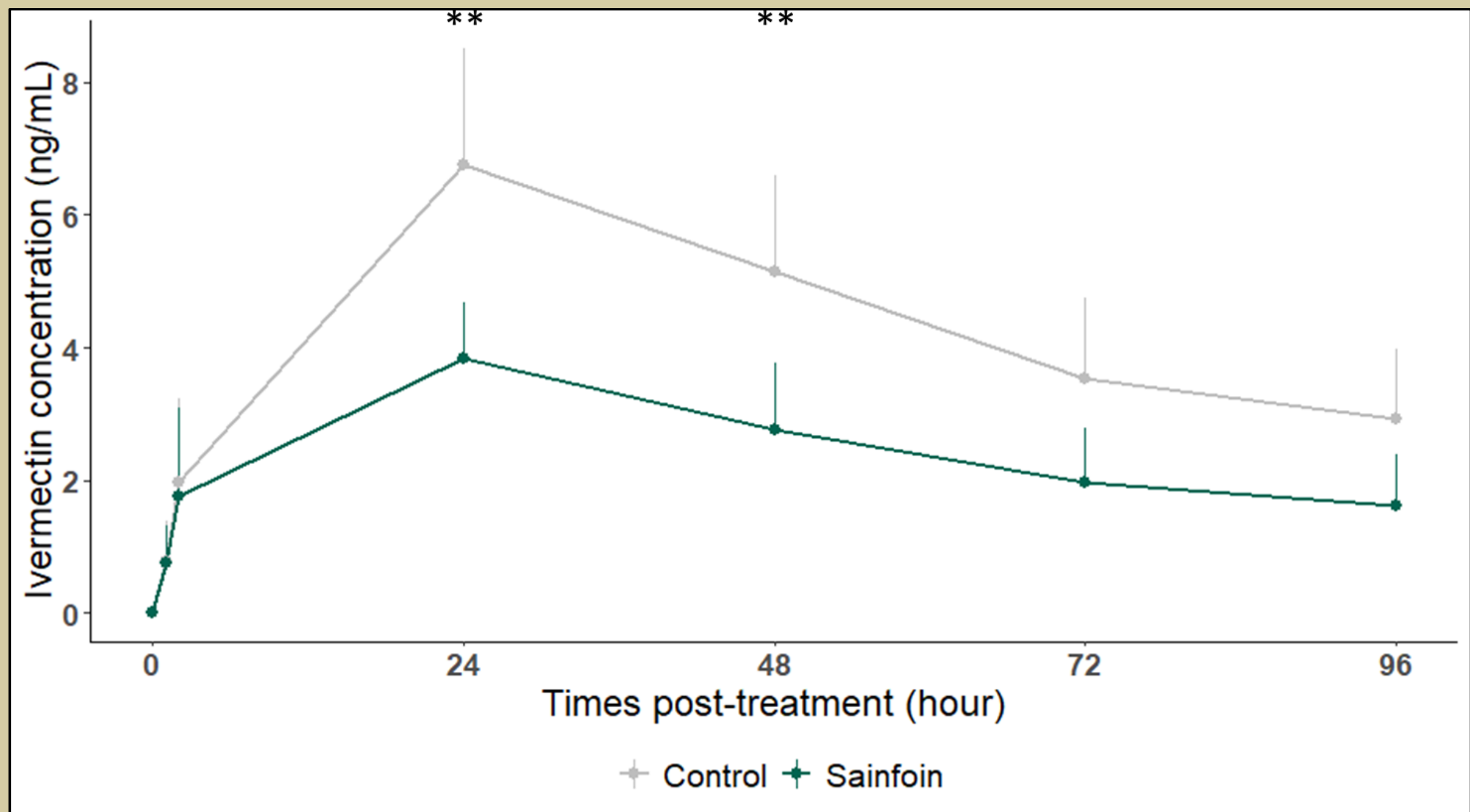
Materials & methods



Arithmetic average of FEC (A) and larval development rate (B) measured over the experimental period

The bars indicate a significant difference in the mean larval development compared to day 0. *Statistically significant difference in larval development rate from day 14 to day 21 between the sainfoin and control groups ($P = 0.02$).

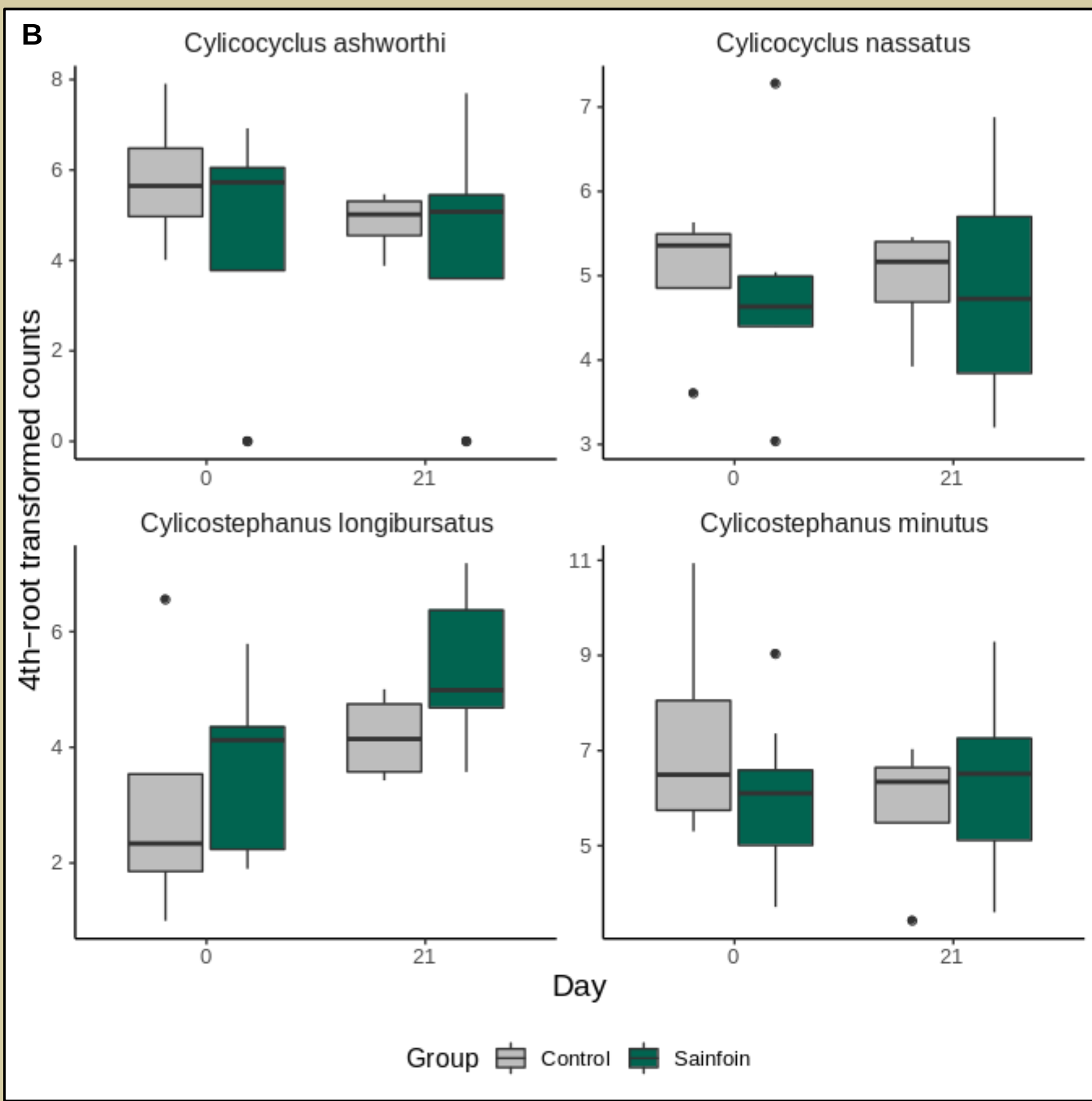
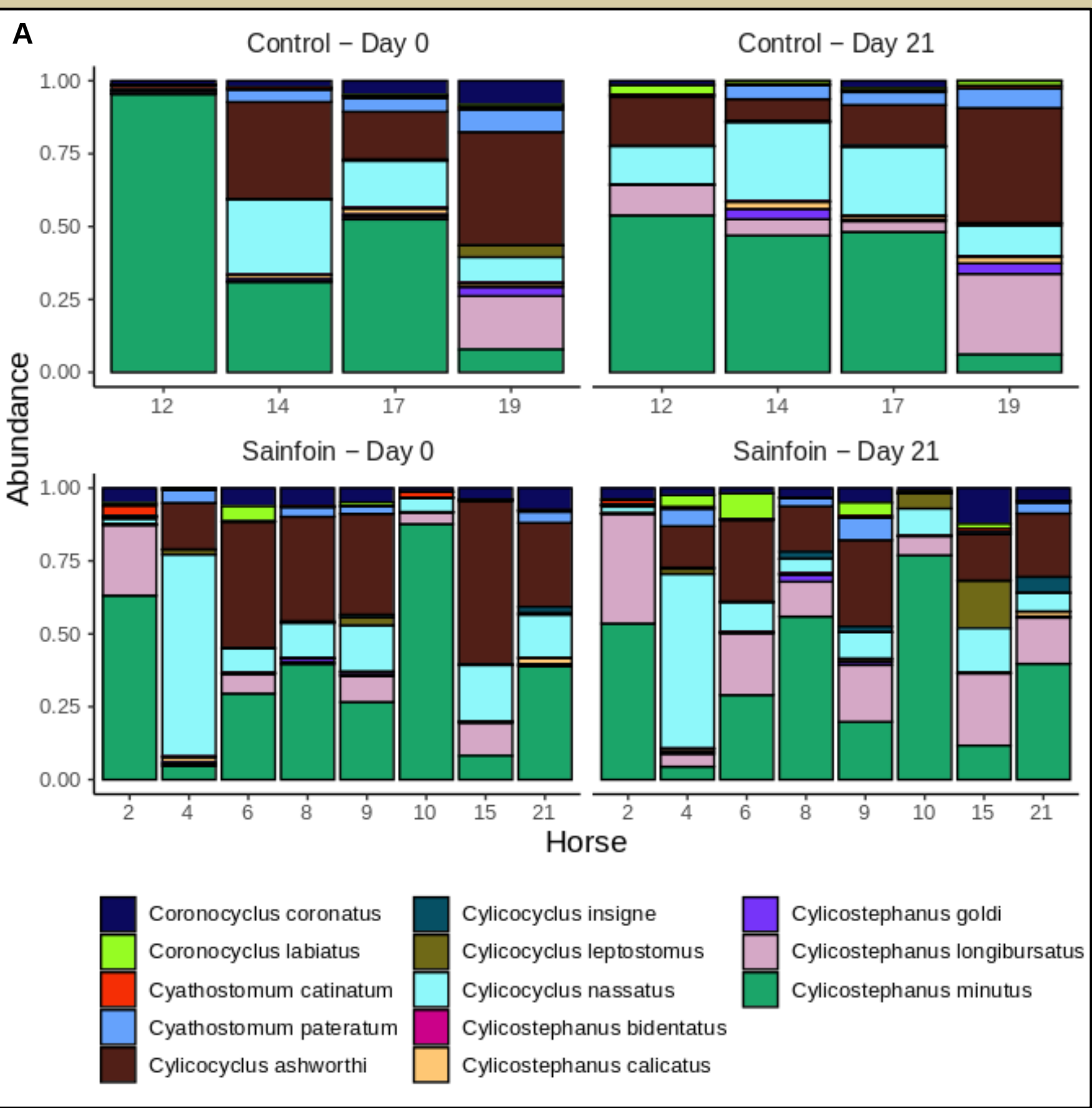
Effect of the diet on ivermectin blood concentration and pharmacokinetic



	Control	Sainfoin
C_{max}^a (ng.mL ⁻¹)	6.8±1.7	3.8±0.8***
T_{max}^b (h)	24±0.0	24±0.0 ^{ns}
$AUC_{0 \rightarrow t}^c$ (ng.h.mL ⁻¹)	419.8±111.9	240.4±77.5***

**Statistically significant difference of average plasma IVM concentration between groups at 24 and 48 h post-treatment ($P < 0.01$).
^{ns}Not significant.
***Statistically significant difference of kinetic parameters compared to control ($P \leq 0.001$).
^aMaximum plasma concentration.
^bTime of maximum concentration.
^cAUC from 0 to the last time point.

Cyathostomin larval community structure (A) and most abundant species (B) estimated using the metabarcoding approach across days and groups



Conclusion

- Absence of *in vivo* effects of dehydrated sainfoin pellets on cyathostomin and larval population structure
- Significant reduction of ivermectin plasma concentration in horses

Multirésistances et Pouvoir Pathogène des Nématodes

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