

Accepted Manuscript

Effect of routine dentistry on faecal fibre length in Donkeys

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PII: S0737-0806(17)30424-0

DOI: [10.1016/j.jevs.2017.06.002](https://doi.org/10.1016/j.jevs.2017.06.002)

Reference: YJEVS 2335

To appear in: *Journal of Equine Veterinary Science*

Received Date: 1 May 2017

Revised Date: 19 June 2017

Accepted Date: 20 June 2017

Please cite this article as: Johnson C, Williams J, Phillips C, Effect of routine dentistry on faecal fibre length in Donkeys, *Journal of Equine Veterinary Science* (2017), doi: 10.1016/j.jevs.2017.06.002.

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1 **Effect of routine dentistry on faecal fibre length in Donkeys**

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6 **Abstract**

7 Many donkeys are kept as companions in the UK and are not ridden or work, therefore dental
8 pain can often go unnoticed by owners. Donkeys suffer from an increased frequency of dental
9 pathology compared to horses and require regular dental treatment (rasping) to optimise their
10 welfare. Faecal fibre length (FFL) has been suggested as a non-invasive method to assess
11 when *Equidae* require dental treatment. This study aimed to identify FFL pre-rasping in
12 donkeys requiring dental treatment and to evaluate how this changed over a 6-week period
13 post-rasping.

14 Twenty adult donkeys of mixed sex and age, and subject to analogous management regimes
15 were selected from the Donkey Sanctuary. Faecal samples were taken for FFL analysis pre-
16 rasping (week 0) and post-rasping (weeks 1, 2, 3 and 6). Mean FFL, determined via
17 laboratory analysis, was recorded for each donkey and the cohort each week. Repeated
18 measures ANOVA with post-hoc Bonferroni analyses and a Bonferroni adjustment ($P \leq 0.01$)
19 examined if differences occurred in FFL between weeks.

20 The cohort's mean FFL was higher pre-rasping than for all weeks examined post-rasping.
21 Significant reductions in mean FFL for the cohort were reported pre- and post-rasping for
22 week 0 to weeks 1, 2, 3 and 6, weeks 1 and 3, 1 and 6, weeks 2 and 3, and week 2 and 6
23 ($P < 0.0001$). Pre-rasping FFLs > 3.3 mm were associated with the presence of dental
24 elongations in adult, companion donkeys. This suggest that FFL measurement is a useful
25 non-invasive tool that could be used to assess the dental health of donkeys.

26

27 Key words: equine, rasping; prophylactic dentistry; welfare; dental pathologies

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