Palatability, chewing time and digestibility of two new dental chews for dogs: Veggiedent® ZEN and Veggiedent® FLEX

Summary

Veggiedent® ZEN and Veggiedent® FLEX (Virbac) are dental chews for dogs that help prevent tartar build-up. They combine the FR3SH™ technology (pomegranate, erythritol and inulin) for fresh breath and either theanine (Veggiedent® ZEN), to support relaxation or eggshell membrane (ESM - Veggiedent® FLEX), to support joint health and mobility.

Palatability, chewing time and digestibility (in vitro) of Veggiedent® ZEN and Veggiedent® FLEX were evaluated in independent labs. Veggiedent® ZEN and Veggiedent® FLEX showed an acceptability rate of 92% and 100%, respectively. Their mean chewing times were of 3 min 48 sec and 4 min 48 sec, respectively. Furthermore, both products were found to be 100% digestible. Therefore, Veggiedent® ZEN and Veggiedent® FLEX are highly palatable and totally digestible in vitro.

Material and methods

Palatability and chewing time of the chews were tested in an independent CRO, on 36 or 37 dogs. They were given a chew once and the number (%), of dogs taking (prehension rate), chewing it and totally consuming it (total consumption or acceptability rate) of the chews were evaluated.

The in vitro digestibility of the chews was tested in an independent lab. The humidity level and protein content (Kjeldahl method) were first evaluated [1] and expressed in % of raw matter (with uncertainty in brackets).

The ileal digestibility was assessed using a protocol described by Boisen et al. [1] for monogastric animals: samples were first incubated with a pepsin solution, pH2 for 6h to mimic gastric digestion and then with a pancreatin solution, pH 6.8 for 18h to mimic small intestinal digestion.

The results are expressed as the % of dry matter dissolved by these successive solutions (with uncertainty in brackets).

The humidity and protein content (uncertainty) were of 12.8(0.6)% and 18(0.5)% for Veggiedent® ZEN and of 13.1(0.6)% and 19(0.6)% for Veggiedent® FLEX.

Results

Table: palatability (number (%)) of animals taking the chew (prehension), chewing it and totally consuming it; in vitro digestibility data (% of dry matter dissolved) for Veggiedent® ZEN and Veggiedent® FLEX

<table>
<thead>
<tr>
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<th>Veggiedent® ZEN</th>
<th>Veggiedent® FLEX</th>
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<tbody>
<tr>
<td>Prehension</td>
<td>37/37 (100%)</td>
<td>36/36 (100%)</td>
</tr>
<tr>
<td>Chewing</td>
<td>35/37 (95%)</td>
<td>36/36 (100%)</td>
</tr>
<tr>
<td>Total consumption</td>
<td>34/37 (92%)</td>
<td>36/36 (100%)</td>
</tr>
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<td>Chewing time (w/o atypical dogs) - mean (SD)</td>
<td>228 (85) sec</td>
<td>288 (109) sec</td>
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<tr>
<td>In vitro ileal digestibility (% of dry matter - uncertainty in brackets)</td>
<td>100% (2%)</td>
<td>100% (2%)</td>
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</table>

For Veggiedent® ZEN, the acceptability rate (total consumption) was of 92% and the mean (SD) chewing time was of 244 (122) sec and was of 228 (85) sec (= 3 min 48 sec) after exclusion of 1 atypical dog chewing for more than 10 min.

For Veggiedent® FLEX, the acceptability rate was of 100% and the mean (SD) chewing time was of 319 (148) sec and was of 288 (109) sec (= 4 min 48 sec) after exclusion of 3 atypical dogs chewing for more than 10 min. These chewing times are comparable with those of other dental chews [2].

The humidity and protein content (uncertainty) were of 12.8(0.6)% and 18(0.5)% for Veggiedent® ZEN and of 13.1(0.6)% and 19(0.6)% for Veggiedent® FLEX. Both products were found to be 100% digestible (100% solubilisation in the pepsin and pancreatin solutions).

Conclusion

Veggiedent® ZEN (with theanine) and Veggiedent® FLEX (with ESM) were both found to be highly palatable and totally digestible.

References