

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

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## Summary



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*.

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),

## 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 and totally consuming (total consumption or acceptability rate) the chew 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).

## References

1. Boisen S., Fernandez J.A. Anim. Feed Sci. Technol. 1995. 51, 29-43
2. Nicolas C et al. Evaluation of acceptability and chewing time of six dental chews in dogs: A randomized, blinded control trial. In: proceeding of the 31st International Conference on Dentistry & Oral Care. Oral Health Dent Manag 2018. 17:27

## Results

Table: palatability (number (%) of animals taking the chew (prehension), chewing it and totally consuming it); chewing time (sec – without atypical dogs) and *in vitro* digestibility data (% of dry matter dissolved) for Veggiedent® ZEN and Veggiedent® FLEX

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

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.**