

Envigo Teklad Standard Natural Ingredient Diets Guidance for use out to 9 months from the date of manufacture

Envigo Teklad standard natural ingredient diets continue to support animal health and study integrity out to 9 months post-manufacturing under recommended storage conditions:

- Cool and dry; at or below 70 degrees Fahrenheit
- Humidity below 50% ideal, but up to 65% is acceptable
- Clean and free of pests in original packaging or in a container that prevents continuous exposure to light and minimal exposure to air

Primary shelf life or use period considerations are vitamin stability and microbiological growth.

Vitamins: Modern preparations used are quite stable, relative to the early years of diet manufacturing when the 6 month practice began. Vitamin levels in standard natural ingredient diets are generous relative to estimated requirements.

Microbiology: Standard natural ingredient diets are dry (i.e. 12% moisture or less) with an active water content below levels required to support microbiological growth or other reactive processes that would make diet unsuitable for use.

Fullerton and colleagues (1982) observed little loss of vitamin A and thiamin in a natural ingredient rodent diet (NIH-07) over 6 months of storage at 23-30° C with no change in the bacteria count. Peroxide values did not vary dramatically in any of the samples during the 168 day period. Spencer (1985) concluded the effective life of irradiated rodent diet stored at room temperature was at least one year; there were no differences in reproductive indices, growth and diet consumption between rats fed old (up to 22 months) vs. fresh (<3 months) diet.

Envigo Teklad produces the same formulas for use in North America and the rest of world. The common guideline of a 6 month shelf life is based on longstanding practice in North America (*Guide for the Care and Use of Laboratory Animals, 8th edition, National Academies Press*). In Europe and Asia, Teklad diets are routinely used out to 9 months. Common practice is a strong indicator of suitability of use. Historical use of natural ingredient diets for 9 months without adverse effects noted is complementary support to a somewhat theoretical argument based on vitamin retention.

Guinea pigs, rabbits, dogs, cats and primates may be more sensitive to subtle changes in palatability associated with older diet. Recorded observations of intake and body condition are recommended. If either decline, the older diet can be mixed with fresher diet before being fed, at a proportion not to exceed 1 part older diet with 1 part fresher diet.

The policies and protocols of institutions may take precedence over this assessment. Additional data available by request at askanutritionist@envigo.com.

References:

Fullerton FR, et al. 1982. *J Nutr* 112:567-573.

Spencer KEV. 1985. *8th ICLAS/CALAS Symposium, Vancouver 1983. Gustav Fischer Verlag, Stuttgart, NY.*

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