

Effect of Storage on the Vitamin Levels of Pelleted LabDiet® Guinea Pig Diet 5025 (2007)

LabDiet® Guinea Pig Diet, 5025, was stored at 72°F (22°C) and 50% relative humidity for 0, 90 and 270 days post manufacture. Vitamin content was assayed. Retention of assayed vitamins is recorded in Tables 9 and 10.

Table 9. Retention (%) of vitamins in LabDiet® 5025 stored at 72° F for 0, 90 and 270 days post manufacturing.

| Vitamin | Days, post manufacturing | | |
|-----------------|--------------------------|-----|-----|
| | 0 | 90 | 270 |
| A | 100 | 74 | 76 |
| D | 100 | 100 | 100 |
| E | 100 | 100 | 100 |
| Thiamin HCl | 100 | 93 | 100 |
| Riboflavin | 100 | 100 | 77 |
| Pyridoxine | 100 | 93 | 97 |
| Niacin | 100 | 100 | 100 |
| Pantothenate | 100 | 97 | 98 |
| Choline | 100 | 97 | 98 |
| Folate | 100 | 94 | 100 |
| Biotin | 100 | 93 | 85 |
| B ₁₂ | 100 | 85 | 100 |

Table 10. Retention (%) of L-Ascorbyl-2-Polyphosphate (Source of Vitamin C) in LabDiet® 5025 stored at 0, 90 and 270 days post manufacturing.

| Day | Retention (%) | Dietary vitamin C, ppm |
|-----|---------------|------------------------|
| 0 | 100 | 772 |
| 90 | 97 | 749 |
| 270 | 79 | 607 |

There was considerable analytical variation which accounts for the apparent increase in certain vitamins over time. For instance, recovery of B₁₂ was 85% at 90 days post manufacturing but 100% at 270 days post manufacturing (Table 9). Although a gradual decrease in L-Ascorbyl-2-Polyphosphate over time, after 270 days of storage vitamin C was in sufficient quantities to meet the guinea pig's minimal vitamin C requirements (200 ppm; Table 10).

Despite the analytical variation, results indicate little loss of nutrients occurs during 9 months of storage at 72° C and 50% or less relative humidity. These results are typical of what can be expected after storage of most pelleted LabDiet® animal feeds.

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