



Formula for Nestling Songbirds (FoNS[®]): Options for 2012

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For the 2011 season, we recommended ZuPreem[®] Premium Ferret Diet as the companion-animal product used as a base for FoNS[®]. In developing the formula recipe, we began with the company's nutritional analysis of this base product, and added other ingredients as needed to achieve our goals for various nutrient levels. The rationale and recipe for the 2011 version of FoNS[®] were presented, among other venues, in Winn & Finke 2011.

However, the nutritional profile of the ZuPreem[®] product has changed, and now contains a significantly greater amount of calcium (with slightly less protein and fat) than previously. As a result, the recipe for FoNS[®] should be adjusted accordingly to eliminate the addition of calcium carbonate, which is no longer necessary and which, if continued, could raise the calcium in the formula to an undesirable level. Additional egg white (protein source), plus corn oil (fat source) complete the revision.

Most users appreciated the deletion of chicken baby food from both the 2008 version (which used a different product base; see Winn & Finke 2008) and the 2011 ZuPreem[®] version. Cost and difficulty obtaining the product had been disincentives for these individuals. However some users who particularly liked the 2006 ZuPreem[®] version (Finke & Winn 2004) wanted to continue including chicken baby food. For them, we present a second option.

REFERENCES

Finke, M. & Winn, D. 2004. Formula for Nestling Songbirds (FoNS[®]): Updates for 2006. *Journal of Wildlife Rehabilitation*, 27 (3-4), p. 28.

Winn, D. and M. Finke. 2008. Formula for Nestling Songbirds (FoNS[®]): Updates for 2008. *Wildlife Rehabilitation Bulletin*. 26(1): 19-22.

Winn, D. & Finke, M. 2011. Formula for Nestling Songbirds (FoNS[®]): Options for 2011. *Wildlife Rehabilitation Bulletin*, 2011, 29(1), pp. 42-43.

2012 ZuPreem[®]-FoNS[®] (Recipe A)

- 1 cup (136 g) ZuPreem[®] Premium Ferret Diet
- 1.67 cups (395 cc) water
- 5 Tb (30 g) dried egg white
- 2 tsp (9 g) corn oil
- 1.0 g (~1/4 tsp) Lafeber Avi-Era[™] bird vitamins
- 5.0 g (~1/2 tsp) active-culture plain yogurt

Pre-soak kibble in water (do not drain any excess) until soft; blend all ingredients in food processor.

Calculated dry weight composition: protein 51%, fat 23%, carbohydrates 17%, Ca 2.4%, P 1.4%, vitamin A 21,100 IU/kg, vitamin D 1,390 IU/kg. As fed: moisture 72%, energy 1.37 kcal/ml

2012 ZuPreem[®]-FoNS[®] (Recipe B)

- 1 cup (136 g) ZuPreem[®] Premium Ferret Diet
- 1.5 cups (355 cc) water
- 4 Tb (24 g) dried egg white
- 1 jar (71 g) chicken baby food (Beechnut or Gerber)
- 1.0 g (~1/4 tsp) Lafeber Avi-Era[™] bird vitamins
- 5.0 g (~1/2 tsp) active-culture plain yogurt

Pre-soak kibble in water (do not drain any excess) until soft; blend all ingredients in food processor.

Calculated dry weight composition*: protein 53%, fat 21%, carbohydrates 17%, Ca 2.4%, P 1.4%, vitamin A 20,000 IU/kg, vitamin D 1,420 IU/kg. As fed: moisture 72%, energy 1.31 kcal/ml.

*Formula nutrient amounts will vary slightly (but not significantly) depending on baby food brand.

ABOUT THE AUTHORS

Mark Finke has worked in the area of comparative animal nutrition for more than 20 years and has published more than 20 peer-reviewed articles on nutrition in insects, birds, and mammals. His graduate degree reflects dual majors in nutritional sciences and entomology. Mark supports several rehabilitation groups by helping them develop diets for specific species and situations.

Diane Winn is the Executive Director of Avian Haven, a rehabilitation practice of approximately 1,300 birds per year, based in Freedom, Maine (Marc Payne is her co-director). She has published several peer-reviewed articles, and given numerous conference presentations, on various aspects of wild bird rehabilitation, including nestling diets and emaciation protocols.



FAQs

- **How long does it take the ferret food to soak?**

It takes several hours to soften completely, but somewhat less time is needed if the kibble is pulverized in a food processor before adding water. Formula made with incompletely-softened kibble will have a gritty consistency and will not draw well into feeding syringes. If formula is made fresh on a daily or near-daily basis, whole kibble can be soaked overnight in a refrigerator.

- **Can I add a different amount of water than the recipe calls for?**

To ensure that nestlings' water needs are met, we aim for about 70-72% moisture in the formula. The amount of water suggested in the recipe is based largely on the "typical" moisture content of kibble, as reported by the manufacturer. The amount of moisture in any given bag can vary from that "typical" amount, however, and any opened bag may also be affected by local humidity conditions. Therefore, the ideal amount of water may vary somewhat from the amount given in the recipe, and can be adjusted as needed. Keep in mind that the formula is meant for syringe feeding and should have a smooth consistency similar to that of yogurt or pudding.

- **How long will this formula keep?**

Refrigerated formula made according to Recipe A should keep for at least several days. However manufacturers of chicken baby food typically recommend that the opened jar be used within 2 days, so Recipe B's shelf life may be somewhat shorter.

- **Can I make a large quantity of formula and freeze it in advance of the season?**

Yes. Vitamins can be added when the formula is made, but yogurt should be added after thawing. Also, make sure the formula is frozen in air-tight containers (and not, for example, in open ice-cube trays).

- **Where can I buy the ingredients?**

ZuPreem® Premium Ferret Diet is sold in many national chains such as Petco™ and PetSmart®; it can also be ordered online (e.g., through Amazon®, www.amazon.com) or from Chris's Squirrels and More (www.squirrelsandmore.com). Chris also carries dried egg white in bulk and Avi-Era™ vitamins. Corn oil and yogurt (plain, whole-milk) can be purchased at grocery stores.

- **How much formula does one batch make, and how much does it cost?**

The basic recipe makes approximately 450 ml of formula. Prices for ingredients vary according to bulk vs. small-quantity purchasing, local availability, shipping charges, etc. Based on a range of ingredient prices, an average cost of one batch of Recipe A is likely to be \$1.50 - \$1.75. Comparison shopping can save money on most ingredients. The price of chicken baby food could add \$1 or more to the cost for Recipe B.

- **If I also feed insects, should I add calcium to the formula?**

The formula contains sufficient calcium for the inclusion of insects (up to 15% of the total diet) without further supplementation.

- **ZuPreem® also makes a "grain free" ferret food. Why aren't you using this one?**

When considering the desirability of different carbohydrate sources in a nestling food, the most important factor is digestibility. The peas in the grain-free product contain complex carbohydrates that are not as digestible as the cooked starches in wheat (the grain that provides carbohydrates in the regular food).

- **How do I know if the ZuPreem® Ferret Food bag I have is the version with the higher calcium level?**

If the bag is not past its expiration date, it is the version assumed in the recipes. Food beyond the bag's expiration date should not be used.

- **Is ZuPreem® going to change the food's nutritional profile again?**

Perhaps, but food with any future changes would not be marketed until after the summer season.

- **Manufacturer's changes in the base product seem to prompt FoNS recipe changes every couple years! Isn't there a way to have more stability?**

We are frustrated by these changes too! We're currently exploring the possibility of designing a base kibble that can be custom-manufactured for FoNS users. You can help us work on this plan by keeping track of how many pounds of kibble you use in the coming season, and letting us know in the fall.

- **How can I get in touch with you if I have any further questions or concerns?**

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