



**Formula for Nestling Songbirds (FoNS®):
Updates and Options for 2016**
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Formula for Nestling Songbirds, better known by the acronym FoNS®, has been used in rehabilitation settings since it was first published more than a decade ago (Winn 2002). Prepared with a base of kitten or ferret food, the recipe has evolved over the years as commercial base products have changed formulations and as new products have become available. The rationale for the composition of FoNS® is explained in Finke and Winn 2004.

For the 2015 season, we suggested preparing the formula with a base of either Innova Dry Kitten Food (Natura Pet Products) or Wellness Core® Kitten Formula (WellPet LLC) (Winn & Finke 2014). Late in the summer of 2015, Natura Pet Products discontinued the Innova product line.

In a subsequent review of options for alternative base products, the two with the best match to our target nutritional profiles were 2015's Wellness Core® and ZuPreem® Premium Ferret Diet (Premium Nutritional Products, Inc.), which had been our recommendation in 2011 and 2012.

More information is in the FAQ section (next page).

REFERENCES

Finke, M. & Winn, D. 2004. Insects and Related Arthropods: A Nutritional Primer for Rehabilitators. *Journal of Wildlife Rehabilitation* 27(3-4), pp.14-27.

Winn, D. 2002. Formula for Nestling Songbirds: Investing in Fitness and Survival. Pp. 9.55-9.63 in *NWRA Principles of Wildlife Rehabilitation (second edition)* (A. Moore and S. Joosten, eds.). National Wildlife Rehabilitators Association: St. Cloud, MN.

2016 Wellness-FoNS®

- 1 cup (135 g) Wellness® Core Kitten Formula (dry)
- 1.5 cups (355 cc) water
- 3 Tb (18 g) dried egg white
- 1 tsp (4.6 g) corn, sunflower, or canola oil
- 2.0 g pure calcium carbonate
- 1.0 g (~1/4 tsp) Lafeber Avi-Era™ bird vitamins
- 5.0 g (~1/2 tsp) active-culture plain yogurt

Calculated dry weight composition: protein 51%, fat 20%, carbohydrates 17%, Ca 2.1%, P 1.2%, vit. A 29,200 IU/kg, vit. D 2,460 IU/kg. As fed: moisture 71%, energy 1.30 kcal/ml.

2016 ZuPreem-FoNS®

- 1 cup (135 g) ZuPreem Premium Ferret Food (dry)
- 1.5 cups (355 cc) water
- 5 Tb (30 g) dried egg white
- 1 tsp (4.6 g) corn, sunflower, or canola oil
- 2.0 g pure calcium carbonate
- 1.0 g (~1/4 tsp) Lafeber Avi-Era™ bird vitamins
- 5.0 g (~1/2 tsp) active-culture plain yogurt

Calculated dry weight composition: protein 51%, fat 19%, carbohydrates 20%, Ca 2.0%, P 1.1%, vit. A 31,400 IU/kg, vit. D 1,500 IU/kg. As fed: moisture 69%, energy 1.40 kcal/ml.

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

Winn, D. & Finke, M. 2012a. Formula for Nestling Songbirds (FoNS®): Options for 2012. *Wildlife Rehabilitation Bulletin*, 30(1), pp. 34-35.

Winn, D. & Finke, M. 2012b. Formula for Nestling Songbirds (FoNS®): Update for 2013. *Wildlife Rehabilitation Bulletin*, 30(2), 21-23.

Winn, D. & Finke, M. 2014. Formula for Nestling Songbirds (FoNS®): Update and Options for 2015. *Wildlife Rehabilitation Bulletin*, 32(1), 9-10.

FREQUENTLY ASKED QUESTIONS

• Why are the amounts of the other ingredients different for the two recipes?

In formulating the recipe, we add other ingredients to the base product in amounts that allow the best approximation possible to target amounts for all of the nutrients in the formula. The two base products have different nutritional profiles, so different amounts of some of the other ingredients are needed to achieve the overall desired result.

• Can I substitute other brands of kitten foods that have similar amounts of protein and fat as given on the product label?

Different brands (even high-end ones) vary considerably in amounts of some nutrients, particularly calcium and vitamin A, that are not reported on product labels. Therefore, substitution of a base product with similar protein and fat amounts will have unknown results, and may produce a formula with toxic or inadequate amounts of some nutrients.

Mail-order retailers can be found online if the product is not available in local stores.

• Why are you no longer offering the chicken baby food optional addition?

Chicken baby food is expensive, and in our judgment, not necessary, given the generous amounts of animal protein already available in the recipes.

• 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% moisture in the formula. The amount of water suggested in the recipe is based on the "typical" moisture content of kibble, as reported by the manufacturer. However, the amount of moisture in any given bag can vary from that "typical" amount, and the food in an 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. The formula is meant for syringe feeding and should have a smooth consistency similar to that of yogurt or pudding. Keep in mind that too much water may dilute the formula such that the nestling may not receive sufficient energy to grow properly, while too little water might result in a dehydrated nestling.

• How long does it take the kibble to soak?

It may take 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.

• How long will this formula keep?

Refrigerated formula should keep for several days.

• 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).

• 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. ZuPreem Premium Ferret Food costs less per pound than Wellness® Core Kitten Formula., but the ZuPreem-based recipe calls for a larger amount of dried egg white. Based on a range of prices of products from different sources, a typical cost per batch of either formula should be between \$2.50 and \$2.75. Bulk orders of ingredients will reduce the cost.

• Should I also feed insects?

Although we don't believe supplementing with insects is necessary, the addition of up to 10-15% insects to this diet is fine. Larger proportions run the risk of diluting concentrations of critical nutrients (calcium and vitamin A) that are low in most insects, and so are not recommended.

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

We can be reached at:

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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, mammals, and reptiles. 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 1,700 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.