Formula for Nestling Songbirds (FoNS®): Updates and Options for 2015
Diane Winn, Ph.D. & Mark Finke, Ph.D.

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 2013 season, we recommended Innova Dry Kitten Food (Natura Pet Products) as the base for the formula (Winn and Finke 2012b). That recipe had been used on a trial basis at Avian Haven, a wild bird rehabilitation center in Maine, for the last part of the 2012 season, and the 2013 season began well at a variety of centers. However, Natura Pet Products recalled this product and other Innova dry foods in the spring and early summer of 2013. With the product no longer available by mid-season, when consulted about alternatives, we recommended a return to the ZuPreem® Premium Ferret Diet (Premium Nutritional Products, Inc.) based version used in the previous two years (Winn and Finke 2011, 2012a) for the remainder of the season.

Innova Dry Kitten Food was available again for the 2014 season. The nutritional profile of formula made with this product continued to provide a very good approximation to the target nutrient values, and we continued to recommend it as the base product. On the basis of feedback from users, we decided to renew the 2014 recipe for the 2015 season. Mail-order retailers can be found online if the product is not available in local stores. As in previous years, we offer the option of adding chicken baby food to the formula. For those who prefer an alternative to this product line, we also offer a recipe based on Wellness® Core Kitten Formula (WellPet LLC).

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

### 2015 Innova-FoNS®

- 1 cup (140 g) Innova Kitten Food (dry)
- 1.5 cups (355 cc) water
- 4 Tb (24 g) dried egg white
- 1 tsp (4.5 g) corn or canola oil
- 3.0 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

**OPTIONAL:** 1 jar (71 g) chicken baby food

Pre-soak kibble in water until soft; do not drain any excess water. Combine with other ingredients and blend thoroughly in a food processor.

### 2015 Wellness-FoNS®

- 1 cup (130 g) Wellness® Core Kitten Formula (dry)
- 1.5 cups (355 cc) water
- 5 Tb (30 g) dried egg white
- 2 tsp (9 g) corn, sunflower, or canola oil
- 3.0 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

**OPTIONAL:** 1 jar (71 g) chicken baby food

Pre-soak kibble in water until soft; do not drain any excess water. Combine with other ingredients and blend thoroughly in a food processor.

### References


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. The Innova kibbles are significantly smaller than the Wellness® kibbles, which is why one cup by volume has a slightly higher weight for the former product than the latter.

- Can I substitute other kinds 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. Substitution of a different base product will have unknown results, and may produce a formula with toxic or inadequate amounts of some nutrients.

- If I use chicken baby food, does it matter which brand I use?
  No. Formula nutrient amounts will vary slightly, but not significantly, depending on baby food brand.

- 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 kitten food 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. Innova Kitten Food costs less per pound than Wellness® Core Kitten Formula. Based on a range of prices of products from different sources, an average cost per batch of Innova-based formula without baby food should be approximately $2.00. Wellness-based formula would likely cost about $0.25 more per batch. The price of chicken baby food could add $1 or more to the basic 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 is not recommended.

- How can I get in touch with you if I have any further questions or concerns?
  We can be reached at:
  diane@avianhaven.org
  markfinke@desertinet.com

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.