

As presented by
The International Dove Society
<http://www.internationaldovesociety.com/>

MacMilk: Crop Milk Replacer Recipe

1 jar (71 grams) strained chicken baby food
1 hard-boiled egg yolk (16.6 grams)
1 tablespoon low-fat yogurt (15.3 grams)
¼ teaspoon corn oil (1.13 grams)
247.6 mg calcium carbonate
2 drops cod-liver oil (from gel cap)
1 drop vitamin E (diluted 1:10 in corn oil; see notes)
1 small pinch vitamin B complex (see notes)
25 mg. Vitamin C (ascorbic acid)

For birds days 1 to 3, digestive enzymes (see notes)

Method: Mix all ingredients in a blender. Allow the digestive enzymes to work on the food for ½ hour before using at room temperature. Warm it to 'wrist' temperature before feeding.

Note: because the replacer offers more calories and is more bioavailable than other diets, you may require less than you are used to feeding. Weigh the bird, calculate its energy requirements and feed accordingly.

MacMilk® Astrid MacLeod and Janine Perlman, 2001©

NOTES:

Vitamins: Vitamin E, as purchased, is too 'strong' for the correction required in this diet. Mix one drop of vitamin E (from a 400 IU/ capsule) with 10 drops of corn oil. Shake or stir well. Then, use 1 drop of the diluted vitamin E in the recipe. The remainder can be kept in an airtight container and stored in a cool, dark place. It can be used over the next few days -. Because vitamin E degrades, it will have to be mixed fresh after a few days, so don't make too much at once. The amount of B complex required is too small to weigh on a gram scale. The amount required for this recipe is a pinch the size of one sesame seed.

Enzymes: Hatchling doves do not have high enough levels of proteases and other enzymes to digest foods well. Although crop milk is high in protein, as described earlier in this section, some of the protein is in the form of 'free amino acids' - thus, already broken down. This is one of the reasons that raising hatchling doves has been very difficult in the past. We

can break down the protein in the crop milk replacer by adding digestive enzymes.

Birds days one to three: digestive enzymes must be added to all hatchling diets, and can be discontinued after day three, when the bird's own digestive enzymes are at higher levels. Pancrezyme can be purchased from a veterinary clinic. Enzymes from the health food store probably will not be effective. Because enzymes are required for hatchling diets and in emaciation protocol, they are good to have on hand.

Method: You will require 1/8 teaspoon of enzymes for one recipe of MacMilk. Mix the enzymes with the food 30 minutes before feeding, to allow the enzymes to work on the food. Do not mix enzymes with the day's ration of food - only with what will be used in the next feeding. Otherwise, the diet will spoil. You will have to estimate how much of a recipe of MacMilk you require per feeding based on the number of hatchlings you have to feed. Then, add the enzymes as needed; for example, if you will be using 1/8th recipe of MacMilk, use a small pinch of enzymes (1/8th the amount of what is required for the whole recipe). To do this, take the amount of food that you'll need for the next feeding and mix it with the enzymes. Let the food sit for 30 minutes before feeding, so that the enzymes can work on the food.

Columbids Day Four and Later: Discontinue the addition of enzymes to MacMilk. Some species begin to mix crop milk with regurgitated (partially digested) seeds or grains sooner than others. Generally, the rule of thumb might be to use crop milk replacer for at least the first week of life, and begin to gradually mix in other foods over a period of two weeks. During the first days of new additions, the baby bird will not yet be digesting all the carbohydrates, and the high-protein food is still needed for growth and feathering, thus a gradual changeover is necessary. Good choices might be Exact® with gradual additions of foods like mixed-cereal pablum with an added tablespoon of strained baby food corn.

Feeding technique: To feed older nestling doves, one method allows the baby to 'root'. Pull up formula in a large feeding syringe and then remove the plunger. Across the wide opening of the syringe (not the tip), stretch a piece of vet wrap or rubber dam (used by dentists) that has a hole to accommodate the bill. Secure well with a rubber band. The bird will thrust its bill into the opening and 'drink', much as it does from its parent. These methods can be messy until you acquire a technique; wipe up any formula on the baby with a Q-tip dipped in warm water.

Some rehabbers prefer to feed nestling doves and pigeons with a tube and syringe. This does take practice; the tube must slide down the side of the throat without getting any fluid into the tracheal opening. Instructions for tube feeding can be found in the fluid therapy section of this manual. As a

rehabilitator's tube-feeding skills develop, the amount of formula the doves take at various ages follows a pattern. Although a rehabilitator may attempt to feed quickly at the height of baby season, haste can have serious consequences. Always go slowly when emptying the contents of the syringe into the bird's crop, especially with newly presented birds. Every so often a dove will have a smaller crop capacity than normal and the excess formula can aspirate the bird.

When using a tube and syringe to feed or hydrate any bird, make sure the tubing is soft and flexible. Medical grade tubing is expensive but worth every penny to prevent harm to delicate tissue in the throat and crop.

To prevent impaction, it is very important that the crop be allowed to fully empty before it is filled again. The crop is very noticeable as a sort of pouch that overlays the breastbone. After feeding, the crop should not be hard to the touch. Feed only enough to fill the crop $\frac{3}{4}$ full -- this feels similar to a hot water bottle that is $\frac{3}{4}$ full. An impacted crop results when the crop becomes too full for the normal passage of food.

Since doves have larger crops than gaping birds, they do not have to be fed as often. The rule of thumb for doves in their first week of life would be 4 feedings per day, and as the bird moves towards weaning, going to 3 feedings per day and gradually weaning to 2.