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# Canary Culture

by Tony Bucci  
San Pedro, California

## Nutrition During Breeding Season

Some canary breeders shy away from formulating their own food and seek an easy way out by purchasing already formulated seed mixtures and nestling foods. There is nothing wrong with purchasing already prepared diets providing you purchase from a reliable source. There are many commercial companies that provide such foods, and some of them are good.

On the other hand, if you are the type of person who is a skeptic and likes to know exactly what your birds are eating, you must learn something about diets and dietary requirements. This article will point to the known facts about nutrition already discovered by scientists throughout the world; then we will logically use this knowledge and prepare our own food to benefit our birds and pockets.

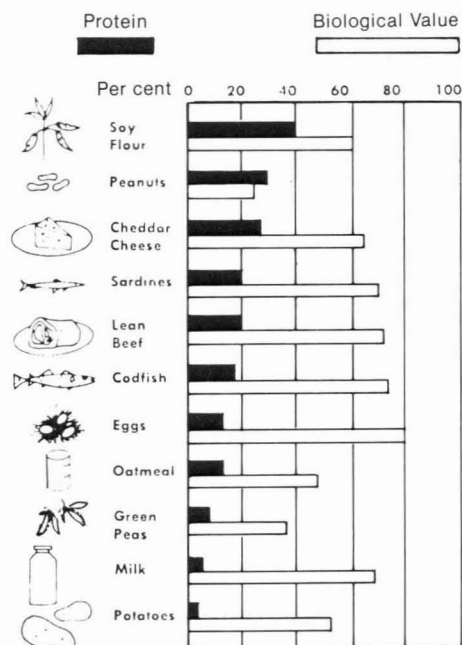
Let's look at some of the facts. On the average, nestlings and young birds are made up of 70% water, 22% protein, 3.5% fats and 4.5% ashes. The adults instead are made up of 60% water, 17% protein, 19.5% fats and 3.5% ashes. Sticking to our subject "Nutrition During Breeding Season," we are mainly concerned with the nestlings and young birds. We already learned that if we remove all of the moisture from the young bird, the only thing left is protein (mainly what makes up muscles, body organs, skin and feathers), and ashes (mostly calcium and phosphorus, which makes up the skeleton).

Considering these facts, we can conclude that young birds need food rich in good proteins (proteins of high biological values), minerals and water.

The food value of proteins depends on the kind and amount of amino acids it contains, not on the total amount of protein in each serving. For example, peanuts are high in total protein, but the biological value of the protein (percentage of useful amino acids) is low. Eggs have a much lower percentage of pro-

tein, but the percentage of useful amino acids in eggs is three times that in a peanut. (Figure 1)

Figure 1

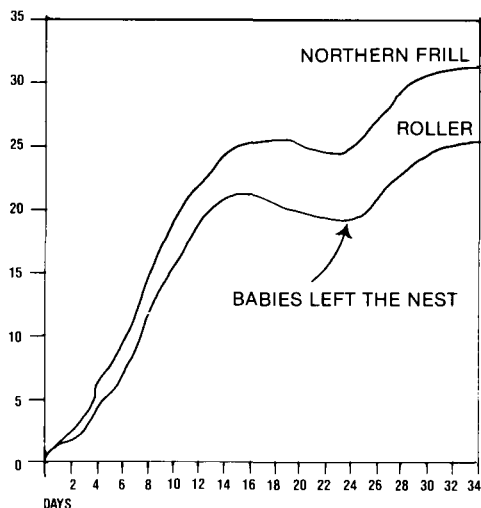


In order for protein to have high value, it is necessary that it contains the following essential amino acids. For example, for a total of 20% protein, for babies up to 2 months, the amino acids should be present in quantity as follows: Lysine 0.9, Valine 0.8, Arginine 1.2, Methionine 0.45, Tyrosine 0.7, Threonine 0.6, Phenylalanine 0.9, Leucine 1.4, Isoleucine 0.6, Cystine 1.0, Isthidine 0.15, Cystine 0.35, Tryptophan 0.2.

Proteins are critical for optimum growth. Nestlings grow very rapidly the first 15 days. The baby at birth is about 1.5 grams. At the 15th day it is approximately 21 to 25 grams. The graph in Figure 2 is of two canaries which I recorded in the last breeding season.

The top curve is of the Northern Frill, and the lower curve is of the Roller canary. Note the similarities with the exception of the Northern Frill reaching higher weight. Note also the loss of weight at approximately the 22nd day when the nestlings fledged the nest. I don't know if loss of weight is a coincidence or if this is typical loss of weight prior to the big day of flight. The relevant part of the graph is the first 15 days. Note that the first 15 to 16 days indicates the fastest gain of weight and, therefore, the most critical period of good nutrition.

Figure 2



The speed at which nestlings acquire feathers is very important. In the case of an average common canary, protein which makes up the feathers constitutes 20% of the total body protein. In contrast, other varieties such as the frilled canaries have larger feathers, and their content of protein constitutes 25% to 35% of the total body protein.

Based on facts and knowledge we have learned, good protein is very important, and the amount of digestible protein within nestling food should vary depending on the variety of the

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Concentrate	Crude protein %	Digestible protein %
Soya flower	43 - 46	42
Brewer's yeast	52	45.2
Milk powder, non fat	35	32

digestible protein:	22-28%
carbohydrates:	60-65%
minerals:	4%
fat:	4-6%
fiber:	1-2%
water:	4-6%

**Flour products:** Bread crumbs (preferably from bread that was made without oil and other fats); corn flour; cream of wheat; etc.

Protein concentrates: Soya flour; wheat germ; brewer's yeast; hard boiled eggs; powdered milk; casein; fish meal: etc.

To give you an idea of what can be put together from the above ingredients, I will give you my own formula which I am presently using. See Table A.

The percentage of protein in each ingredient within the total nestling formula is calculated in the following manner. We will use bread for an example.

$$\frac{500 \text{ grams}}{1,350 \text{ grams}} \times 10\% = 3.7\%$$

1 tblsp.	Vitamin-mineral powder concentrate
1 tblsp.	Iodized kitchen salt
1 tblsp.	Bone meal
1 tblsp.	Dry kelp

Boil for 10 minutes one cup of seed mixture, made of equal amounts of niger, rape and canary seed. Drain, and rinse with cold water. Drain well, and place in a mixing bowl. To the seeds in the bowl, add one tablespoon of wheat germ oil (vitamin "E"), one tablespoon of cod liver oil (vitamin "D"), and mix thoroughly. Then add 4 cups of the dry mixture (which we prepared previously). Mix thoroughly. Finally, four hard-boiled eggs (boiled for 10 minutes) are grated or finely mashed, then added to the rest of the mixture and mixed thoroughly. The texture of the food should be moist and crumbly. If it appears to be too wet, add some dry mixture.

During the breeding season I offer nestling food three times a day: early morning, noon and late afternoon. The portion should be enough to last 2-3 hours. The frequency of offering and small portions assures unspoiled food.

Hygiene is of utmost importance. Containers which are used for nestling food should be washed in soap and water every day.

#### REFERENCES:

1. G. De Baseggio, S. Querellini, "Canarini Di Tutto il Mondo", Editore Tipografia Babina, Via Prevati, 5. 40139 Bologna, Italy, 1981.
2. G. de Baseggio, F. Lombardini, "I Canarini Arricciati", Edizioni Agricole, Via Emilia Levante, 31. 40139 Bologna, Italy, 1974.

## A

Approx. Amounts	Ingredients	% of protein in ingredient	Amount of ingredient	% of protein in the formula
5 cups	Bread crumbs	10	500 grams	3.7
4 cups	Baby cereal	35	200 grams	5.1
1 cup	Dry milk	35	100 grams	2.8
1 cup	Corn meal	10	200 grams	1.5
½ cup	Brewer's yeast	50	100 grams	3.7
2 cups	Dry alfalfa	20	100 grams	1.5
1 cup	Soya flour	42	100 grams	3.1
3 tblsp.	Fish meal	60	50 grams	2.2
			1,350 grams	23.6%





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