

Breeding season is a busy time of year.

Now is the time to prepare for it.

By Barbara Rosario

During the breeding season the work is constant, but how hard it is, depends to a great extent on the mistakes we have made in the build up to that season. The biggest mistake is to keep more pairs than you can reasonably cope with. It is always a temptation to keep this bird because it is a sister of a show winner, or keep that bird as it just might breed that one bird, we are all looking for. It has been said "There is no such thing as a spare hen". Invariably, most of us put them down to nest. Decisions about who to keep and who to let go can be very difficult, but keeping too many birds is only a deterrent. Spreading your available time over too many birds, cause all birds to suffer, including oneself. It is better to have fewer bird that receive more of your attention.

The other major problem we create for ourselves is the lack of preparation. A frantic rush round two weeks before the breeding season will just not do. I know this is difficult for some of us, because we have finished with the show season, then we have a few weeks breather period, before we start setting up our birds for breeding. During this breather period, there seems like there is not much to do. The show season has finished and the birds are happy as long as we feed them a good and varied diet, all seems well, and they are happy. However, during this breather period, we should be prepping the bird room for the breeding season by doing a thoroughly cleaning and making sure all the little things are done ahead of time. Again, the number of birds that are kept in your bird room makes all the difference in the world.

The preparation of the breeding cages is of paramount importance. Dirty cages can be a heaven for germs and mites. Loose hangers on nests can detach and result in the lose of a nest full of chicks. Bent or loose wires on the cages can spell disaster for inquisitive youngsters and adult birds alike. Birds can get caught up on these items and break a leg, and even die of strangulation. Remember, Murphy's law always seems to prevail in the bird room. If it can happen, it will happen.

All little jobs and many more need to be attended to well before you have any thoughts about paring up your birds. If you do them over a longer period of time, than it makes it seem like an easier job. Here again, the number of birds makes a big difference in the amount of axillary work that has to be done.

If you need to paint your breeding cages, be them all wire or boxed with wire fronts, be sure they are clean before painting. Unfortunately, paint can be a laborious job, but one that might have to be done from time to time. For the box style breeding cages, you can purchase at your local hardware store small rollers that are ideal for painting the wooden surfaces. I have found the small three-inch rollers are good for the corners and then only require a quick brush stroke to finish them off. The cage fronts and all wire cages are even worse to paint. Make sure the wires are clean and free of any flaking and that any loose wires are tightened up. You can paint with those extra small rollers or spray paint. Remember if painting, to check and make sure the paint is safe to use for birds.

Once you have everything in the bird room in the best shape you can get it in, then you can move to the next step in lead up to the breeding season and that is to start increasing the length of daylight hours the birds receive. The single most important stimulant is the gradual

lengthening of daylight hours. The second most important stimulant is increasing the protein gradually in their diet. Below is an example of a lighting schedule I use.

| WK# | Month | Total Hours | AM - PM | |
|------|-----------|-------------|-------------|--------------------------|
| WK 1 | January | 12 | 6:00 – 6:00 | |
| WK 3 | January | 12 ½ | 6:00 – 6:30 | |
| WK 4 | January | 13 | 5:30 – 6:30 | <u>PAIR BIRDS</u> |
| WK 1 | February | 13 ¼ | 5:15 – 6:30 | |
| WK 2 | February | 13 ½ | 5:00 – 6:00 | |
| WK 3 | February | 13 ¾ | 5:00 – 6:45 | |
| WK 4 | February | 14 | 5:00 – 7:00 | |
| WK 1 | March | 14 ¼ | 5:00 – 7:15 | |
| WK 2 | March | 14 ½ | 5:00 – 7:30 | |
| WK 3 | March | 14 ¾ | 5:00 – 7:45 | |
| WK 4 | March | 15 | 5:00 – 8:00 | |
| WK 1 | April | 15 ¼ | 5:00 – 8:15 | |
| WK 2 | April | 15 ½ | 5:00 – 8:30 | |
| WK 4 | April | 15 ¾ | 5:00 – 8:15 | |
| WK 1 | May | 15 | 5:00 – 8:00 | |
| WK 2 | May | 14 ¾ | 5:15 – 8:00 | |
| WK 3 | May | 14 ½ | 5:30 – 8:00 | |
| WK 4 | May | 14 ¼ | 5:30 – 7:75 | |
| WK 3 | June | 13 ¾ | 5:30 – 7:15 | |
| WK 1 | July | 13 ½ | 5:30 – 7:00 | |
| WK 4 | July | 13 ¼ | 5:45 – 7:00 | |
| WK 1 | August | 13 | 6:00 – 7:00 | |
| WK 2 | August | 12 ¾ | 6:00 – 6:45 | |
| WK 4 | August | 12 ½ | 6:00 – 6:30 | |
| WK 1 | September | 12 ¼ | 6:00 – 6:15 | |
| WK 2 | September | 12 | 6:00 – 6:00 | |
| WK 3 | September | 11 ¾ | 6:00 – 5:45 | |
| WK 4 | September | 11 ½ | 6:00 – 5:30 | |
| WK 1 | October | 11 ¼ | 6:00 – 5:15 | |
| WK 2 | October | 11 | 6:00 – 5:00 | |
| WK 3 | October | 10 ½ | 6:00 – 4:40 | |
| WK 4 | October | 10 | 6:00 – 4:00 | |
| WK 1 | November | 9 ½ | 6:00 – 3:30 | |
| WK 2 | November | 9 | 6:00 – 3:00 | |
| WK 3 | November | 9 ¾ | 6:00 – 3:45 | |
| WK 4 | November | 10 ¼ | 6:00 – 4:15 | |
| WK 1 | December | 10 ½ | 6:00 – 4:30 | |
| WK 2 | December | 11 | 6:00 – 5:00 | |
| WK 3 | December | 11 ½ | 6:00 – 5:00 | |
| WK 4 | December | 11 ¾ | 6:00 – 5:45 | |

This schedule is based on when I want my birds to start breeding. Every breeder has their own schedule. For you beginners, you need to figure out when you want your birds to be set up and then work backwards. I like to set the birds up when they are at 13 hours of daylight a day. To do this in January, you will need some sort of artificial lighting in the bird room. I would recommend the SunFlex 24 Touch Universal Daylight Controlled. It ranges in price from \$289 to \$424 depending on the features that you would like to include. Go to their website at www.sunflex24.com for more information. This is an investment in the birds and the bird room that is worth the cost. Once you have figured out your own timing schedule, this information can be entered in the Sunflex 24.



If you decide on a different way to deliver the lighting schedule to the bird room, just remember not to have the light come on and go off suddenly. You will need some kind of dimming system that will allow the lights to come on and go off gradually.

Our next concern is increasing the intake of protein. Establishing the daily nutrient requirements of birds is an involved and complex process.

WHERE DOES THE PROTEIN COME FROM TO MEET BIRDS REQUIREMENTS?

In wild canaries the protein comes from the individual seeds, insects, arthropods and pollen they consume as they forage in the wild. In captivity we provide a range of seeds or seed mixes including hulled oats, white millet, Japanese millet, canary seed, rape and niger as well as varying supplements which provide different levels of protein and ranges of amino acids. Some supplements such as egg and commercial egg foods may be adequate but from my own observations, many are inadequate and contain a high amount of sugar. In practice no single seed or commercial product will not provide all the necessary amino acids required by the bird. I have found that Quinoa is about as complete of a food as you can get.

The important aspect of proper and effective supplementation is not to over burden the bird with excessive protein and non-essential amino acids in the process. Here is one study that I found that deals with the protein needs of canaries from the PubMed.gov website.

“Canaries appear to be primarily seed-eaters, although there are no reports of their feeding ecology in the wild. In captivity, they are offered seed-based diets, preferring to consume seeds such as canary, rapeseed and millet. The mean daily dry-matter intake ranges from 3 to 4 g, which corresponds to a mean gross energy intake of approximately 70 kJ per bird per day. The efficiency of dietary metabolism is high (0.85), which equates to individual metabolizable energy intakes of 45-75 kJ per bird per day. For a canary of average body weight (22 g) the data can be fitted to a regression equation to predict a requirement of 62 kJ ME per day. This corresponds to published information on the energy requirements of other passerine species, but deviates from the predictive equation for poultry. The digestibility values for protein, fat and carbohydrate are similar to those obtained for the budgerigar, although it is likely that the digestibility coefficient is dependent upon the seed type and alimentary tract lipase and amylase activities. Nutrient requirements of canary chicks have not yet been determined, although recent studies have provided data on the nutrient intakes of developing chicks. “The newly-hatched canary chick has a rapid growth rate, achieving 90% of its asymptotic body mass by 11 days of age. Gross energy intake is

approximately 3 kJ per day following hatching and by day 10 is equivalent to that of an adult canary. It appears that the protein intake should lie between 16.5 and 21.9% of the diet (as is), with peak intake occurring between 8 and 10 days of age." With the range of 16.5 – 21.9% from this study and about the same percentage of protein in another study, this brings me back to Quinoa. Quinoa was growing in South America thousands of years ago and called "the mother grain" by the Inca. Quinoa today is still considered a wonderful "superfood", especially once the United Nations declared 2013 the "International Year of Quinoa." I have been using Quinoa since the late 1980's when about the only place you could find it was in some health food stores. After I started using Quinoa, I noticed several things; 1. The birds, (adults and chicks), seemed to be more robust, 2. fewer problems in the breeding season, 3. By feeding Quinoa and sprouted seeds, I was speeding a significantly less time preparing nesting food for them. During feeding times, the adults would actually be waiting for it.

Protein in Quinoa

By weight, quinoa is about 15 percent protein, a high level for a plant-based food. The yellow and red varieties of quinoa may have a slightly higher protein content than white quinoa, (16 percent compared to 15 percent) according to a review by NASA.

Quinoa alone puts us at about the right protein ratio for the birds which is about 16-18%.

Amino Acids in Quinoa

Quinoa contains the following amino acids: Isoleucine, Leucine, Lysine, Phenylalanine, Tyrosine, Cysteine, Methionine, Threonine, Histidine, Tryptophan and Valine. The precise amounts of these amino acids will vary slightly based on cultivation conditions; however, a serving of quinoa will always contain significant amounts of each. In addition to protein, quinoa contains starchy carbohydrates, dietary fiber, phosphorus, magnesium and iron.

Quinoa is also gluten-free. The essential amino acids recognized as important for birds are as follows, Arginine, Histidine, Leucine, Isoleucine, Lysine, Methionine, Phenylamine, Threonine, Tryptophane, Valine, Glutamine and Proline. As you can

see Quinoa contains most of the amino acids

recommended for bird.

Vitamins & Minerals in Quinoa



Magnesium, manganese, phosphorus, potassium, calcium, iron, copper, thiamin and B vitamins, folate, zinc.

Quinoa vs. Couscous

Quinoa and couscous look very similar, but differ tremendously in nutritional value. Couscous looks healthy but it is really a human processed simple carb, with nutritional value similar to white pasta. It has an unwarranted reputation as a health food because of its popular use among vegetarians. Its popularity has grown because it is such a versatile food.

Quinoa is a superior carbohydrate compared to couscous. It has 20 grams of carbohydrates in a boiled half cup, which is considered a portion. The glycemic number of quinoa is 53 which is considered very low. That means it doesn't spike blood sugar levels.

The protein level in quinoa is 15%, which slows down the digestion process. It can keep birds fuller for a longer period of time. The protein in quinoa is similar to the protein in beans, which is considered a complete protein. That means it contains all the essential amino acids that are needed to build healthy body tissues, and you can get more protein into their diet without using an animal product, like eggs.

Take a look at the nutritional differences between quinoa and couscous.

Quinoa:

- Is high in protein and fiber.
- Contains nine essential amino acids plus a couple more.
- Has anti-inflammatory and antioxidant elements.
- It is considered a seed and is related to Spinach and Beets.
- It can be sprouted.

Couscous:

- Has less calories than quinoa.
- Also has less calcium, potassium, and other minerals.
- Also has less Vitamin B6.
- It is a small manmade pasta produced with semolina wheat flour.

Nutritionally speaking, quinoa is the clear winner here.

Hope this helps to get things prepped before the breeding season comes.