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# The Value of Green Food

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In the wild, quite a lot of the various species of birds depend almost wholly on green food; whether it be in the form of seeding grasses, the young buds on trees or plants, fruit or even the bark of trees. Admittedly, we give our canaries regular supplies of dry seed to feed on, but if we want them to remain healthy and perform well for us in the breeding season, then to me it seems to be pure commonsense to also feed green food to them regularly and in as much variety as possible.

Reasons for Feeding Green Foods:

1. To Balance the Diet

   birds to perform Dry seed alone may be an adequate maintenance diet, but it is insufficient for young growing birds and for breeding properly. The usual hard seeds we give our birds do not supply them with all the essentials to maintain a long and healthy life. Most of the necessary vitamins and minerals are obtained from green foods or sprouted seeds. Very little is obtained from hard seed, especially if it is old, as the vitamins deteriorate rapidly as the seed ages.

   Dry seed is deficient in:

   a) *Total protein* .

      Probably enough for maintenance only.

   b) *Vitamin A Carotenes* .

      These are substances which are converted to Vitamin A. They are present in all green plants but are NOT in dry seed. A lack of Vitamin A effects skin health and disease resistance.

   c) *Vitamin B5 (Pantothenic Acid ).*

      Found in greens but not in dry seed.

   d) *Biotin* .

      Not found in dry seed but is present in greens and egg yolk. Biotin acts against certain forms of paralysis and when present in the system is a natural antiseptic.

e) *Vitamin D3* .

An all seed diet is likely to be deficient especially if access to sunlight is poor.

f) *Calcium*.

The amount in dry seed depends on the season and soil type.

g) *Trace Minerals such as zinc, cobalt, copper , manganese and others*.

Also depends on the type of soil where the seed is grown. Green foods can overcome these deficiencies.

2. To Develop Correct Eating Habits

Young birds will accept a variety of foods. However, resistance to new foods increases with age and some individuals have very limited diets. Birds which are fed a variety of foods when young will be more likely to eat a wider range of foods as adults and hence have a better chance of avoiding deficiencies and diseases. It is up to us breeders to educate the young birds to accept a broad diet, particularly in the way of green foods.

3. To Maintain a Healthy Gut

Fibre is needed for the development and maintenance of normal gut muscle tone and secretions. An all seed diet is not high in fibre. Fibre also helps to keep the natural balance of helpful bacteria in the gut.

4. To Relieve Boredom and Provide Beak Exercises

With young birds, green foods provide interest, variety and promotes the normal use of beaks. Some young canaries start the feather plucking habit purely because of boredom or lack of another interest.

5. To Stimulate Breeding.

Most experienced breeders will admit that there is some evidence to suggest that the provision of appropriate green foods (Winter Grass for instance) will stimulate some canaries to commence breeding.

To obtain maximum breeding results, I believe there is no better way to bring your birds into breeding condition than to give them an ample supply of good quality green food. A plentiful and constant supply is essential if a bird is to make full use of other foodstuff provided. One little warning here - green food can cause trouble if your birds are not getting a regular amount of it and you suddenly throw in a large quantity. The birds naturally gorge themselves, with the result that there is trouble of some sort usually a bowel disorder. But if you give them a regular supply daily and not just once a week, no ill effect will result when the supply becomes more plentiful and they are fed a lot.

I'm of the opinion that the best green food is that which is growing in full sunlight; dark green leaves are preferable to the pale or light green ones. And whilst on this point, I'd like to say that most people know that an absence of green food - particularly dark leaf green food - from the diet of fowls quickly causes egg yolks to become pale. Poultry keepers used to watch this because the pale yolks tend to give the eggs a bad appearance.

For a completely different reason and in the interests of the health of the youngsters we hope to breed this year, I'm sure we should also be on guard against our hens laying pale yolked eggs. If we feed plenty of dark green leafed green food, we can do this. Nature will then look after the egg yolks and the embryos which are going to spend their early days feeding on them.

An egg yolk is not a deep yellow colour just for the sake of artistic effect. It's yellowness is due to the liprochrome pigments, or colouring matter, it contains. These pigments are the source of Vitamin A upon which the growing chick depends for healthy, normal growth. Closed up in its shell, it has no chance of obtaining it elsewhere.

In nature, the hen bird manufactures Vitamin A from the substances contained in green leaves. Only the hen can provide her eggs and hence her chicks, with this essential growth vitamin. So with our canaries, it is up to us as breeders, to see that she gets a sufficient quantity from her diet.

During the research I did, I was most impressed with the importance, or need, for two minerals - phosphorus and potassium - to be present in the diet when young growing canaries are being reared.

PHOSPHORUS - I said earlier that the best supplement for use along with seeds of all kinds are green foods which makes good the deficiencies of vitamins and minerals in the seeds. While seeds are fairly rich in phosphorus, it is not generally known that much of this phosphorus is not available in the bird's body. The phosphorus of seeds exists in a form known as phytin, which resists digestion and assimilation to a very great degree, at least under normal conditions of feeding.

Fortunately green food is also a good source of phosphorus and phosphorus in such food happens to be in a form that is available to the system. Phosphorus is required in large amounts by young growing birds for the development of bone and skeleton. Some breeders overcome the unavailability of the phosphorus in a seed diet by supplying cod liver oil. This contains Vitamin D, which increases the availability of phosphorus for bone formation.

Green food, however, does all that cod liver oil does, and more. It not only supplies extra phosphorus in an available form, but even renders the phosphorus of the seed more available. This it achieves in two ways - by supplying Pro-Vitamin D and by supplying organic acids which render unavailable phosphorus more available to the body.

POTASSIUM - Scientists have ascertained that potassium also plays an important role in the growth and development of bone in birds. A liberal intake of potassium increases the mineral content (chiefly calcium and phosphorus) of the bones when the phosphorus content of the diet is either low or unavailable to the body. Fortunately for us, green food is a good source of potassium, and thus we see that green food assists the growth of the skeletal portion of the young bird in another way. In fact, just about the major mineral in all green foods is potassium.

I suppose there are some breeders who can still get onto good patches of thistles, chickweed, dandelion, shepherd's purse, etc. Unfortunately I'm not one of them and so these days I rely mostly on leaf greens such as Endive, Chicory, Cos Lettuce and Savoy Cabbage. I haven't got any figures on the mineral and vitamin content of the wild greens but I think you could bet your life that the popular ones would all contain a high percentage of minerals and vitamins. Dandelion is one that does for sure although I haven't got any actual percentage figures on it. In England, Dandelion is considered to stand alone among their native "weeds". It is high in mineral salts, calcium, iron, manganese, chlorine, sulphur and phosphorus, and is an excellent blood purifier. Either the seeding heads or the leaves can be used and there is hardly a better tonic to be found than the Dandelion. Other very good and popular wild plants are:

- Milk Thistle (used to be considered a "must" if you were to have a good breeding season;
- Chickweed (one of the best of wild green and a favourite with all feeding hens);
- Shepherd's Purse (can be used at all stages of it's growth;
- Winter Grass (plenty of seed on it's heads and I recommend this one when you can get it);
- Plantain (young birds love it).

As far as other types of greens which we might eat ourselves are concerned, I was able to get the Tables of Composition of quite a few of these. After a few "phone calls", I was directed to the Government Bookshop in Clarence Street, Sydney, and from there I got the "Metric Tables of Composition of Australian Foods" issued by the Commonwealth Department of Health. Although this book contains percentage figures on a lot of the greens in which we are interested, there was nothing on Endive, so I searched around elsewhere for that and managed to get some interesting details. There appears to be a little variance of opinion on Endive. In a refresher course for Veterinarians which George Hiscocks was good enough to loan me, top line veterinarian Harold Cooper recommends Dandelion, Thistle, Seeding Grasses, Silver Beet and Endive for canaries. When speaking of parrots he recommends Silver Beet, Cabbage and Endive. In the same book, D J Schultz gives as a practical guide on greens - Silver Beet, Lettuce, Endive, Lucerne , Cabbage and grasses, but he does say that Lettuce and Endive have poor food value compared to Silver Beet and Lucerne.

If you look at the figures on the following tables, you will see that Endive compares very favourably with most other green leaves. It is lower than Silver Beet, Spinach, Broccoli or Brussels Sprouts, but surprisingly has a higher food content than Chinese Cabbage which some breeders recommend. It even has a higher fibre content than Cabbage.

If you have been using Endive, my advice is to keep on using it. One sure way to help your breeding pairs to rear their young is to give them greens they love to eat and they will certainly eat copious quantities of Endive. Now that we know it does have good food value, you have nothing to fear.

In the percentages of the vitamins and the minerals charts below, you will notice many differences in the content of various greens. For this reason I believe it is wise to give your birds a variety of greens at all times. By doing this you will make up in one green what is low, or missing, in another.

| Vitamin Content of Some Usable Greens (per 100gm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GREEN FOOD | VITAMIN | | | | | | | |
| | A1 | B1 | B2 | B3 | B6 | Folic Acid | C | E |
| | iu | mg | mg | mg | mg | mcg | mg | mg |
| Broccoli | 2500 | 0.09 | 20.00 | 8.00 | | | 90.00 | |
| Brussel Sprouts | 520 | 0.08 | 14.00 | 8.00 | | | 87.00 | .4 - .9 |
| Cabbage | 130 | 0.05 | 0.05 | 0.30 | 0.16 | 6-42 | 47.00 | 1.00 |
| Chinese Cabbage | Almost the same as Cabbage | | | | | | 25.00 | |
| Endive | 3300 | 0.07 | 0.14 | 0.50 | 0.02 | 63.70 | 10.00 | 2.00 |
| Kale | 8300 | 0.10 | 0.18 | 1.60 | | | 93.00 | |
| Lettuce | 330 | 0.06 | 0.06 | 0.30 | 0.01 | 10.30 | 6.00 | 0.50 |
| Cos Lettuce | 1900 | | | | | | 18.00 | |
| Spinach | 8100 | 0.07 | 0.14 | 0.50 | | | 28.00 | |
| iu = international units which are 1/40 of a microgram mg = milligram; mcg = microgram. | | | | | | | | |

| Composition of Green Foods per 100 grams | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GREEN FOOD | WATER | PROTEIN | FAT | CARBS | ENERGY | CALCIUM | PHOSPHORUS | IRON | SODIUM | POTASSIUM | CARATENE EQUIVALENT | FIBRE | THIAMINE | RIBOFLAVIN | NIACIN |
| | g | g | g | g | g | kj | mg | mg | mg | mg | mcg | g | mcg | mg | mg |
| Broccoli | 88.00 | 3.60 | 0.30 | 6.30 | 147 | 123 | 77 | 1.30 | 15 | 388 | 2100 | 1.50 | 100 | 0.21 | 1.10 |
| Brussel Sprouts | 84.90 | 4.60 | 0.50 | 8.70 | 205 | 32 | 79 | 1.30 | 13 | 420 | 300 | 1.60 | 95 | 0.16 | 0.70 |
| Common Cabbage | 91.60 | 1.50 | 0.20 | 5.40 | 109 | 47 | 30 | 0.60 | 21 | 250 | 78 | 0.80 | 58 | 0.05 | 0.30 |
| Chinese Cabbage | 95.00 | 1.40 | 0.10 | 2.60 | 59 | 46 | 40 | 0.70 | 23 | 253 | 85 | | 57 | 0.08 | 0.60 |
| Endive | | 1.70 | 0.10 | 2.60 | | 81 | 54 | 1.70 | 14 | 294 | | 0.90 | | | |
| Kale | 87.80 | 4.00 | 0.70 | 6.70 | 176 | 209 | 77 | 2.20 | 75 | 426 | 4311 | | 102 | 0.26 | 1.90 |
| Parsley | 80.90 | 4.50 | 0.80 | 10.00 | 230 | 260 | 72 | 6.50 | 39 | 903 | 7897 | | 125 | 0.28 | 1.20 |
| Silver Beet | 91.00 | 2.60 | 0.40 | 4.80 | 117 | 105 | | 2.50 | 650 | 480 | 5232 | | 60 | 0.18 | 0.40 |
| Spinach | 91.60 | 2.50 | 0.30 | 3.70 | 96 | 92 | 53 | 3.00 | 71 | 637 | 5112 | 0.60 | 101 | 0.20 | 0.50 |
| Watercress | 92.80 | 2.20 | 0.30 | 3.20 | 88 | 192 | 52 | 1.80 | 56 | 298 | 2915 | | 85 | 0.16 | 0.80 |
| Lettuce | | 0.90 | 0.90 | 2.90 | | 20 | 22 | 0.50 | 9 | 175 | | 0.50 | | | |
| Cos Lettuce | | 1.30 | | 3.50 | | 68 | 25 | 1.40 | | 264 | | 0.70 | | | |
| g = gram; mg = milligram; mcg = microgram; iu = international units which are 1/40 of a microgram; kj = kilojoules. | | | | | | | | | | | | | | | |

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