# SOAKED AND SPROUTED SEED

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Soaked and sprouted seeds are relished and nutritionally beneficial in a bird's diet

**COMMON CAUSES OF FAILURE IN SPROUTING**

- ✓ Poor quality seed
- ✓ Unclean equipment
- ✓ Chlorinated or impure tap water
- ✓ Improper drainage
- ✓ Lack of ventilation
- ✓ Excessive heat or humidity and
- ✓ Airborne bacteria, mould or yeast

A variety of seeds are suitable for sprouting. Top: rape seed, faba beans, canary seed. Bottom: sunflower, mung beans, white millet

Many aviculturists feed their birds soaked or sprouted seed, particularly during the breeding season. But why is this done and what are the benefits and pitfalls of this practice? Following is an explanation of the differences between dry, soaked and sprouted seed.

**Dry seed** is normal, untreated bird seed. Dry seeds contain a plant embryo and a store of food reserves wrapped in a hard outer coat. This may lay dormant for months or years, waiting for the right conditions to emerge and grow (germination).

**Soaked seed** is achieved by immersing in water for several hours. This softens the seed, causing it to swell as water is absorbed. Soaking begins the germination process but at this stage no sprouting has occurred.

**Sprouted seed** is when the seed germinates to the point at which a plant sprout is visible.

Seed germination is dependent upon the following factors:

**Water** is required to soak into the seed. This results in the swelling and breaking of the seed coat. Seeds contain stored nutrients such as starch, proteins and oils. When the seed takes in water, enzymes are activated which break down these food reserves into more easily metabolised components. This makes the nutrients more readily digestible for birds, especially when feeding chicks.

**Oxygen** from the air is also critical for germinating seeds. If a seed is buried too deeply or becomes water-logged there will not be sufficient access to oxygen to sustain growth. In order to sprout the seed needs to be well drained and aired. A lack of oxygen can lead to the formation of foul-smelling and potentially toxic bacteria.

**Temperature** also affects the growth rate of sprouts. Different seed types have a particular temperature range in which they best germinate and will not do so above or below this range. Most commercial bird seeds have an ideal germination range around room temperature—20–25°C.

## NUTRITIONAL VALUE

**Dry seed** contains all the plant's food stores but has not been acted upon by the enzymes which make these components easily metabolised. Young birds in particular do not have a fully-developed digestive system so cannot obtain the maximum nutritional value in dry seed.

**Soaked seed** does not greatly alter the nutritional value of the seed however it is more easily digested by young birds following ▶ regurgitation by the parents. This replicates the situation in the wild where birds soften food items in their crop before feeding their young.

**Sprouted seed** has a better nutritional value than either dry or soaked seed. Chemical changes in the sprouted seed means that there is more available protein and less fat. Starch is converted to simple sugars, protein to amino acids and oil to fatty acids, all of which are readily absorbable by the fast-growing chicks. Many aviculturists report that feeding sprouted seed produces better breeding results and healthier chicks. As the sprout continues to grow the seed's nutrient value becomes exhausted. So the best time to feed is when the sprouts have first emerged.

## SEED TYPES FOR SPROUTING

Most seeds can be used for sprouting and many people use similar seed mixes to those that they feed dry. Be aware that different seed types have different germination times and may not sprout at the same time. Growing chicks have an elevated requirement for protein and fat to build up muscle and feathers. They may benefit from seeds with higher protein eg beans, peas and oil content eg sunflower, safflower, rapeseed, linseed. However, the high starch seeds such as millet, panicum, canary, wheat, oats and sorghum are also suitable sprouting seeds and provide an excellent source of energy to birds all-year-round.

## METHODS

There are various methods that can be successfully used to sprout seeds and breeders need to work out not only what suits them but also

Soaking in water softens seeds and causes them to swell

Sunflower seed (left) and mung beans 1–2 days after soaking and beginning the germination process

their local conditions—climate is a big factor. A good source of dry seed is important and washing seed to remove external contaminants may be necessary. A bird-safe disinfectant can be used to minimise microbial growth. The basic approach for producing *soaked* seed is as follows:

1. Place seed in a container and fully immerse in water.
2. Soak for between 5–24 hours (less in hot climates) so that the seeds swell up and soften.
3. Rinse thoroughly with water through a sieve and drain well.

For *sprouted* seed, continue as follows:

4. Keep the soaked seed in a sieve (or on a mesh tray) to allow it to air. Store at a temperature of about 25°C for optimum germination.
5. Rinse thoroughly with water every 12–24 hours (more frequently in hot climates). Continue this process until the seed has sprouted—usually about 2–3 days—and feed out when sprouts are fresh and just a few millimetres long.
6. Sprouted seed can be stored in the refrigerator for up to two days. This slows the growth process and keeps the sprouts fresh.

## MICROBIAL CONTAMINATION

The risk of contamination often discourages breeders from sprouting seed. The main contaminants are from airborne bacteria, mould and yeasts that can produce toxic by-products. This is particularly an issue in hotter, more humid climates. However, problems can be minimised by careful preparation of seed, thorough rinsing and draining, good air flow and the use of disinfectants. One of the favoured bird-safe disinfectants is a diluted solution of Chlorhexadine, used as per the manufacturer's instructions eg Multi-Clens™ at the rate of 5mL per 10 litres of water.

Contaminated seed can have an off-smelling odour and appear gluggy or unclean. If in doubt, do not feed out to birds.

## ADDITIONAL SUPPLEMENTS

Soaked or sprouted seed is a highly palatable food for birds and can be used as a vehicle for nutritional supplements. The following supplements can be mixed with soaked or sprouted seed to provide an excellent conditioning and weaning food for chicks:

- Multi-vitamin and mineral supplement
- Omega-3 and 6 fatty acid supplement eg Good Oil for Birds™
- High protein diets eg Parrot Soft Food™ and Finch Soft Food™.

## CONCLUSION

Soaked seed has the benefit that it can be produced quickly (overnight) and softens the seed, making it easily fed to the young. This reduces stress on the adult birds when rearing chicks.

Sprouted seed is more time-consuming to produce and can increase the possibility of microbial contamination however this can be minimised by careful preparation and the use of bird-safe disinfectants.

From a nutritional point of view, sprouted seed is superior to dry and soaked seed making the extra time required to produce it well worth the effort. Such foods also provide a perfect medium to add supplements to further enhance optimum health in your birds.

A mixture of sprouted seeds after three days —a suitable time to feed

Sprouting seed in a sieve

RESOURCES…

*The Complete Guide to Successful Sprouting for Parrots and Australian BirdKeeper, Vol. 21, Iss. 6 and Vol. 23, Iss. 3. (See Free Mail Order Card or www.birdkeeper.com.au.)*