multiple species probiotics most frequently have some combination of Lactobacilli (often a few different species or strains), Streptococcus species, Bifidobacterium species, Enterococcus species, and Bacillus species.

Recommendations for Probiotic Use

Appropriate probiotic administration can both prevent gastrointestinal diseases and help a bird fight off existing infections. Prevention is much more effective and probiotics should not be used instead of specific treatments for an intestinal disease. You should continue to get a sick bird diagnosed and Summary treated, using the probiotic as additional help. In the poultry industry, probiotics are recommended for treating newly hatched chicks who have no contact with older birds. This allows them to establish a healthy intestinal flora and help them develop their intestinal immune defenses. In psittacines, parent birds feeding chicks in the nest provide normal flora as they feed their chicks. The parents might need to be given a probiotic if they are older birds, have been treated with antibiotics, or have been through a stressful period. Handfed chicks do not receive normal flora from their parents, so giving a probiotic would serve the same purpose as it does in poultry chicks separated from adults.

age and numbers of Lactobacilli decreased with age in psittacines, periodic treatment with a probiotic to replenish their normal bacterial flora would be advisable, especially in pet birds with limited exposure to other members of their species.

As mentioned earlier, antibiotic treatment is known to kill normal flora in addition to the target pathogenic bacteria. Probiotic use may be indicated after antibiotic treatment to reestablish normal flora. It's probably not advisable to give a probiotic during antibiotic treatment because the antibiotic will likely just kill the bacteria you're giving the bird. Wait until the antibiotic treatment is finished before starting the probiotic.

Birds experience stress when something significant changes in their environment or if they are subjected to uncomfortable or fearful conditions. Things like moving, getting a new puppy

Because numbers of gram negative bacteria increased with

situations for a bird. Studies have shown that physiologic stress reduces numbers of normal bacteria and increases numbers of abnormal or pathogenic organisms in the intestinal tract. Stress also triggers changes that decrease intestinal immunity and overall immunity and damages the intestinal lining. Because probiotics help stimulate immunity and help intestinal cells heal, they should be used in times of stress to help prevent disease. There is ample evidence that the use of appropriate probi-

otic organisms can provide significant benefits to birds. More research is needed to determine if bacterial strains can be found that adhere or colonize in multiple pet bird species. Because the commonly kept pet birds belong to hundreds of different species, it won't be possible to develop species specific probiotics for them all. Research has shown that even among Lactobacilli there's a wide range of abilities to adhere, produce inhibitory metabolites, and survive passage through the intestinal tract.

Potential probiotic bacteria need to be screened and selected for positive traits. Probiotic manufacturers need to determine the minimum doses of live organisms needed and be able to guarantee delivery of that minimum dose under recommended storage and handling conditions.







Breeding Fig-parrots in Weltvogelpark Walsrode

With a maximum size of 20 cm, figparrots (Tribe Cyclopsittacini) are among the smaller species within the Order Psittaciformes.

Weltvogelpark Walsrode houses four of the five known species of these small parrots (Genus Cyclopsitta and Psittaculirostris). During the 2012 breeding season the Orange-breasted Fig-parrots (Cyclopsitta gulielmitertii) as well as the Double-eyed Fig-parrots (Cyclopsitta diophthalma) successfully parent-reared their young. Germany-wide, both species can only be seen in Weltvogelpark Walsrode.

All the seven recognized subspecies of the Orange-breasted Fig-parrot inhabit rain, monsoon and swamp forest in lowlands and hilly regions up to 1100 m on New Guinea and surrounding islands. In the wild the main breeding season is between December and June. These fig-parrots nest in a hole that they excavate themselves in an arboreal termitarium. In contrast, the Double-eyed Fig-parrots nest in existing cavities in a hollow of a high tree or in a rotten tree trunk or limb. This species has eight recognized subspecies which are found on New Guinea and on the Northeast coast of Australia. Double-eyed Fig-parrots inhabit lowland and montane forest, mangroves and more open woodland up to 2000 m. The main breeding season occurs between March and June in New Guinea, while in Australia the birds mainly breed between August and November.

A special feature, alluded to in their name, is the diet of these small parrots—in the wild they mainly feed on fruits of various fig trees, preferring the seeds rather than the flesh of the figs. Additionally, a variety of other fruits and berries, nectar and also insects and their larvae are taken.

In captivity experiences have shown that fig-parrots are very sensitive to disturbance, especially during the breeding



season. Changes in their direct surroundings as well as at the nest box can unsettle them. It is very important to deal with the birds very carefully in order to breed them successfully.

To encourage our breeding pairs of Orange-breasted Fig-parrots to start breeding, we construct nest boxes with a size of 30 cm x 20 cm x 20 cm (length x width x height) that are placed in the enclosures behind the scenes. These nest boxes are made of waterproof particle board. An entrance hole with a diameter of 4 to 6 cm is provided on both sides of the boxes. The boxes are entirely filled with natural cork tiles. The cork is scratched a bit at the entrance hole to provide the birds with a starting point to begin excavating their nest cavity in the cork tiles. Digging the cavity together stimulates the pair's breeding instinct. Once the nest cavity



At top, a male Double-eyed Fig-parrot at Weltvogelpark Walsrode. Above, a female Orange-breasted Fig-parrot at the park.

62 Volume XXXIX • Number 4 • 2012 AFA Watchbird 63





is approximately 8 to 10 cm in diameter, the female lays her eggs—normally two, but one or three eggs are possible. The young hatch after an incubation period of about 20 to 22 days. The parents adjust the size of the nest cavity to the size of their growing offspring. These birds are tidy by nature—the chicks deposit their faeces directly out of the nest box so that the interior stays clean.

In contrast to the Orange-breasted Fig parrots, the Double-eyed Fig-parrots are provided with a natural wooden trunk as nesting box. The cavity is approximately 20 cm x 25 cm (width x height) with a diameter of about 15 cm. The entrance hole is about 4 to 6 cm in diameter and situated 20 cm above the nest floor maximally. The nest floor is lined with wood shavings.

As soon as a pair of fig-parrots has eggs, the birds are left in peace until the approximate hatch date of the chicks. Shortly afterwards, the nest box is inspected, but only when the female has left the box to feed.

When there is proof that there are small chicks inside the box, the diet of the birds is adjusted. The standard fig-parrot diet at the park consists of germinated seeds, a fruit mixture made of blue berries, grapes, apples and papaya as well as dried figs which are soaked at least for 24 h in water. Additionally, one table spoon of Versele Laga and tropical pate are added. The birds also have ad libitum access to millet. After the chicks hatch the standard diet is supplemented with a mash made of three parts of Versele Laga NutriBird A21 and one part Verse Laga Orlux Lori. When the chicks are about 14 days old, recently moulted, white mealworms are added to the food.

Generally, the birds are disrupted as little as possible during the incubation period as well as after the chicks hatch. Only a few keepers that the fig-parrots know well care for them. After 35 to 42 days the offspring leave the nest box for the first time, but they regularly return to their nest during the first

Nemeth Fam

days after fledging. At the age of 60 to 70 days the young are separated from their parents and put together as a juvenile group per species in an enclosure adjacent to the enclosure of the parents.

Because these fig-parrots are known to be very sensitive to disturbances at their nest boxes and the immediate surroundings, the young are not banded with closed rings (in consultation with the ministry). Instead, they are banded with open aluminium rings when separated from their parents.

After the separation of the first fully grown offspring, both breeding pairs of the Orange-breasted Fig-parrots began with a new clutch. One chick already left the nest box of the first breeding pair in the beginning of September; another chick of the second breeding pair hatched in September. The Double-eyed Fig-parrots also seem to be getting ready for their next brood!

Breeding of fig-parrots at Weltvogelpark did work out quite well this year—two







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breeding pairs of the Orange-breasted Figparrot have successfully reared four chicks in total so far. Two pairs of the Double-eyed Fig-parrots have reared one chick each. In the year of its 50th anniversary Weltvogelpark Walsrode is very excited about this great breeding success of the fig-parrots! And we are looking forward to many more beautiful young.

~ Anne Hoppmann, Norbert Neumann

Qatari Sheikh Works to Help Spix's Macaw Fly Again in Brazil

In the Arabian Peninsula, His Excellency Sheikh Saoud Bin Mohammed Bin Ali Al-Thani, a member of the royal family, has a very special passion. For more than a decade he has been dedicated to saving the Spix's macaw from extinction. He employs a world renowned international team of specialists in a race against the clock to save this incredible parrot.

The Spix's macaw is a medium-sized blue parrot which inhabited the semi-arid "Caatinga" biome in Northeast Brazil. The last known wild bird has not been seen since 2000 and the species is now presumed to be extinct in the wild. Habitat destruction and poaching lead to the demise of this species. The animated film "Rio" made the species world famous and has increased conservation attention for this bird. A sequel is being produced and will add more interest.



The Spix's macaw captive breeding program, coordinated by ICMBio in Brazil, counts 80 parrots of which 60 are living at the Al Wabra Wildlife Preservation in Al Shahaniya, 40 km outside the nation's capital city, Doha. Of these 60 macaws 33 were bred at Al Wabra since breeding began in 2004. Last month, Saoud sent Al Wabra representatives to Brazil to offer their experience in breeding Spix's macaws and to add to the effort being developed under the official plan for the species in Brazil.

AWWP representatives attended an official meeting at the headquarters of ICMBio where the National Action Plan for the

Spix's macaw was presented. All current and new stakeholders in the program were present including Brazilian government authorities (ICMBio, CEMAVE and IBAMA), members of the PAN advisory committee, captive Spix breeders (AWWP, Qatar and ACTP, Germany), captive Spix holders for the Brazilian government (LPF, Spain and Lymington Foundation, Brazil), SAVE Brasil and their affiliated partner Birdlife International and NEST, Brazil. The meeting presented the future plans that are being developed over the next five years under the current PAN and discussed the challenges ahead in the captive program.





Following the meeting, SAVE Brasil hosted a lunch for the meeting participants and several special guests, including the mayor of Curaça, where the last Spix's was observed in 2000. Here, the program 'Projeto Ararinha na Natureza' was officially launched.

This year, five chicks have hatched in AWWP and are being hand-raised. So far

these are the only five chicks born in the program this year. Also, for the first time ever, systematic artificial insemination was performed by a specialist team from Giessen University in Germany and Parrot Reproduction Consulting who developed the technique with the university. In conjunction with veterinary and bird department staff at Al Wabra, the specialist team aimed

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these are the only five chicks born in the program this year. Also, for the first time ever, systematic artificial insemination was also trialed and will be developed further.

Increasing the numbers of Spix's macaws is still the No. 1 priority because a reintroduction program in Brazil can only be successful if enough captive birds are bred for release. AWWP is playing an important role to achieve that target.

On top of the efforts in Qatar to save this parrot, Saoud also bought 2380 ha of land in the region of the Caatinga near Curaçá. The farm was used as the field-base for the species recovery efforts in the 1990s and still boasts the tree nesting-hollow used by the last known wild pair back in the 1980s. There are many trees with nesting holes suitable for Spix's macaws on his land, some of which are currently occupied by bats, bees, falcons and Illiger's macaws. There is hope that once again they will be used by Spix's macaws.

Al Wabra staff is already present in Brazil preparing the land for reintroductions. Overgrazing of livestock, deforestation—particularly of the nesting tree of the Spix—and damaged creek systems are the biggest challenges for habitat restoration. Al Wabra also has plans to set up a breeding facility for Spix's macaws in Brazil where birds from the preservation in Qatar can be sent to continue breeding near the release site.

The Al Wabra team is working tirelessly to prepare the land for reintroductions in the future. At the same time Al Wabra is also preparing to set up a captive facility in Brazil to bring some of the Spix from Qatar back for breeding. If successful, it would mean the first breeding of Spix's macaws inside Brazil since its extinction in nature"

AWWP is an international conservation organization focusing on breeding and protecting threatened species. AWWP is a member of the European Association of Zoos and Aquaria, is non-commercial and is not open to the public. Except of the conservation program in Brazil, AWWP also runs a conservation project in Ethiopia.

~ Al Wabra Wildlife Preservation



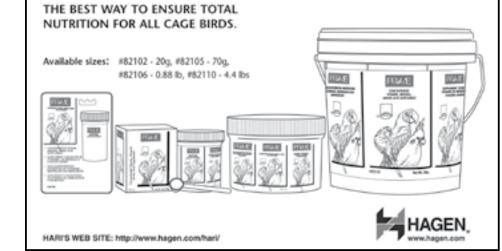
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66 Volume XXXIX • Number 4 • 2012

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