

MEALWORMS

FACTS ABOUT MEALWORMS:

Mealworms are the larva of the darkling beetle. Their life cycle has four stages: egg, larva (mealworm), pupa and beetle.

Mealworms are available in pet stores and bird stores such as Wild Birds Unlimited or from the grower Rainbow Mealworms in Compton 800-777-9676. Medium size live mealworms are used to feed bluebird chicks. Dehydrated mealworms are available and less expensive, however they should not be fed to chicks. Live insects are the only source of water for chicks.

CONSIDERATIONS FOR PROVIDING MEALWORMS:

If bluebirds are in two to five acres of good habitat of low clipped grass with scattered trees, they can usually find enough insects to feed their chicks. Chicks may not be adequately fed during a cold spell or in marginal habitat where fewer insects are available, or in the absence of one parent. In these events offering mealworms may save several of the chicks from starvation but you are under no obligation to do so.

GETTING STARTED

If you already have bluebirds in your yard and want to help them, place mealworms in a shallow dish with vertical sides of about $\frac{3}{4}$ inch. Select a shady spot where the birds usually perch. They will generally find them quickly. The dish should be removed when you cannot keep an eye on it. Gradually move the dish to where you want to feed them but not close to a nest box which may cause parents to invest more time defending it. Overseeing the feeding of mealworms is imperative to prevent other birds from finding it first. Bluebirds will be deterred if a robin, mockingbird, jay, or crow are consistently present. After the bluebirds learn where the mealworms will be, it is helpful to make the mealworms available in a feeder that excludes larger birds. The Droll Yankee and jail type feeders with slats or wire squares work well (see notes at end). A roof provides needed shade and protection from rain. Mealworms cannot survive heat, sunshine, and too much moisture.

ON THE TRAIL

If you are a trail monitor, providing mealworms is a helpful way to quickly access information about a nest site. If you regularly offer 10-12 mealworms when you check a box, the pair will likely (but not always) rush to see you. This is one way you will know both parents are alive. Place the

mealworms on the nest box roof if your box is in a shady area (not in full sun). If your box hangs in a tree and is lowered and raised using a lifter, place mealworms on the roof if you can lift the box back in place without spilling many of the mealworms. A fast-food coffee lid threaded over the roof hook helps keep the worms in place. Otherwise, consider placing mealworms in a dry, shady spot on a tree root, limb, or firm surface. Mealworms will quickly try to dig into the soil if they can, but on a tree root they usually crawl in an upward direction. Molds in the damp soil can cause illness in birds.

HOW MUCH TO FEED

After chicks have hatched, increase the number of mealworms to about 6-8 per bird including adults. While you keep a safe distance away continue to observe to make sure other birds are not stealing the worms. Crows, jays, mockingbirds, robins etc. are very clever and must not be allowed any treats in the vicinity of the box. They will never forget. It is better to watch for a few minutes and pick up any leftovers. For a backyard bluebird family, you can offer about 100 twice a day as long as other birds are not finding them. If mealworms make up most of a bird's diet (this can be **calcium depleting**) sprinkle calcium carbonate or calcium citrate powder over the mealworms as you offer them. Find these online or in health food stores. I am often asked if bluebirds will become dependent on mealworms. They tend to forage less and become beggars, so I suggest **moderation**.

STORING AND MANAGING MEALWORMS

Keeping 500 to 5000 or more medium size mealworms in good condition is not easy. When you bring them home, they will be very hungry and thirsty. Put them in a plastic container such as a kitty litter tray with an inch or more of wheat bran or cornmeal with perhaps some chicken mash. Wheat bran can be purchased very cheaply at feed stores and also found in grocery stores. Mealworms cannot climb the sides of smooth open plastic pans with about 2 inch or higher sides so a lid is not needed. Moisture is essential and commonly provided by pieces of carrot, potato or apple but you can use almost any vegetable or fruit. Don't get the meal too moist or the worms will die. After a day or two of feeding you can refrigerate the container of mealworms but remove the moist food first. It will cause excess moisture in the meal in the refrigerator. Ideal temperature is 45° to 50° at which the worms become dormant and last for months, but this is too warm for your food. Most mealworms can survive at lower food-safe temperature. The container must have air holes. Mealworms kept in the refrigerator should be taken out for one day a week (or even every day) and fed to keep them in good condition. If you don't want them in the refrigerator, store them at room temperature and keep feeding them. A garage in summer is too hot for mealworms. As the droppings accumulate in the bottom of the pan, it will start to smell. Sift this out and start with a fresh pan of meal. Also, if

they start to smell musty, the meal may have gotten too moist. Sift and start fresh, after all, this is the bluebird's food. Keep it healthy. Medium mealworms will grow and change into pupas in a few weeks. The birds do not prefer to eat the pupas and beetles so refrigerate the mealworms to stop their growth and put them in dormancy or purchase smaller amounts.

CAUTIONS

1. Far too often the conditions in mealworm containers are appalling. Keep a good amount of fresh meal in the pan and sift when it smells. Do not feed dead or black mealworms.
2. Feeding mealworms can save bluebird lives but there is a real downside as well. While the birds are concentrating on picking up the worms, they are more vulnerable to hawk attacks. Don't always put the mealworms in the same spot and try to put them where a hawk couldn't swoop in and grab the bluebird.
3. Providing mealworms after fledging is risky. Parents tend to repeatedly go from mealworm dish directly to chicks. Hawks and other predatory birds notice this and may prey on vulnerable fledglings. We can not know how badly supplemental mealworms are needed but if the parents are expecting to be feed a generous amount they seem to lose the drive to hunt as vigorously. Suggest gradually offering fewer mealworms as fledge time nears so parents pick up on foraging and then stop for a week or more after the fledge. Be observant as to what is needed. If there is only one parent the decision is more difficult. In this case watching for predators as the mealworms are offered may increase safety but hawks are not often fooled. **The danger is very real and cannot be over emphasized which is why it is usually best to supplement sparingly.**
4. Care is needed when feeding larger groups of birds in fall and winter, especially in open containers or on the ground. Poop containing parasites can come in contact with mealworms (or other bird food) and be transmitted to birds. Decrease danger by offering smaller amounts in different locations.

FEEDERS

This feeder keeps out larger birds and protects mealworms from sun and rain:

<http://www.tmbstudios.com//proddetail.asp?prod=Bluebird+%2F+Songbird+Mealworm+Feeder> It and similar styles are available from several sources.

To make your own feeder: <http://md.fpemad.com/p2/feeder.htm>

Note: A bluebird feeder that is shaped like a birdhouse with Plexiglas sides and wood ends with round entrance holes works well with some bluebirds but confuses others.

ADDITIONAL INFORMATION

www.sialis.org/feeder.htm

<http://www.nabluebirdsociety.org/PDF/NABSFactsheetMealworms.pdf>