

Black Flies (aka Buffalo or Turkey Gnats)



Figure 1 Adult Black Flies -- there are many species of these flies and they vary in appearance.

Black Flies (Simuliidae) also known as **Buffalo Gnats** are a group of several dozen species of small (approximately 1/8 inch or 3 mm) biting flies that can be a serious problem for our nestlings as well as for other wildlife, pets, livestock, and humans. These flies spend their larval cycle attached to rocks in clean flowing streams (they are not found in polluted waters). After metamorphosis the female Black Flies require blood to form eggs and they use razor-like mouth parts to cut the skin and suck up the blood from the surface. Worse they have a tendency to attack in swarms. If they happen zero in on your nestbox they can literally suck the chicks dry of blood in relatively short order! Death is caused by blood loss, immunological reaction to the fly saliva or also via suffocation with flies blocking off breathing. These flies are typically a problem in upper Midwestern states e.g. Iowa, Minnesota, Wisconsin and Michigan starting in mid-May until the end of July. They are found less often in other states as well. Black Fly swarms have been known to cause substantial losses of nestlings and even adult birds.

Black Flies must be dealt with immediately and aggressively when discovered. The typical insect repellants that contain DEET (diethyltoluamide) are not particularly effective against them. Black Flies are most active in the cooler parts of the day i.e., morning and evening and are drawn into the nest by the CO² expelled in the breath of the chicks.

If one lives in an area where Black Flies are a likely problem it is best to be proactive and to take measures to prevent their attacks. Here is a list of things that can reduce or eliminate Black Fly problems on your nestboxes:

1. Black Flies are attracted to dark colors. Paint the entire nestbox, including the roof with exterior grade white latex paint (don't paint around the nestbox entrance hole).
2. The Bluebird Restoration Association of Wisconsin has developed a treatment/preventative plan for Black Flies which involves using Permethrin-10 poultry insecticide. The solution is diluted to 0.5% concentration and transferred to hand held aspirator bottle (e.g. a Windex bottle). To apply spray all sides of the nestbox (inside and out) and around all openings. If eggs are already present place them place a small glass or plastic bowl over them (or just remove the eggs to a plastic dish padded with cotton or Kleenex) and then spray the nest liberally with the Permethrin-10 preparation. Some will note that this product is an insecticide. However, it has very low toxicity to domestic birds (poultry) and has been formulated for use on them. It is also listed as

safe around food bearing plants (beans or tomatoes etc.) by the USDA). In fact, if there are chicks in the nest they can be safely misted with the spray. Some recommend waiting until the chicks are at least 3 days old but it is not clear this precaution is required. Repeat this process again on the next week's monitoring.

3. Another similar product that can be safely used to protect chicks in the nestbox from Black Flies is Flys-X[®] For Livestock (made by Adsorbine). This is a mixed and ready-to-use out of the bottle pyrethrin-based insecticide that is supplied in a 32 fluid ounce spray bottle for about \$15. It is approved safe for application directly to poultry (and almost all farm animals – except cats) and it readily kills insects such as flies, fleas and ticks. Farm supply house like Tractor Supply etc., usually carry it or it can be purchase on-line from Amazon.
4. Recently, Jaclyn Hill (Bluebirds of Iowa Restoration) has found that a combination of Sevin-5 dust along with Adsorbine Jr a common pain liniment is a safe and effective way of eliminating Black Fly problems on the nestbox trail. First, before any nests are made the bottom of the nestbox is sprinkled with about ½ teaspoon of Sevin-5 dust (Sevin is a carbamate insecticide and is a popular choice for vegetable growers because of its relatively low oral and skin toxicity to vertebrates which also makes it a preferred treatment for killing fleas on pets). After a nest is built the bottom layer of the nest grass is separated with a 5 wire hair pick and additional dust is mixed into the bottom layers of the nest grass. Then all openings of the box are misted with Adsorbine Jr. Plus Pain Relieving Liquid, Extra Strength Formula which is a commercial, over-the-counter, pain liniment supplied in 4 oz bottles (~\$11/bottle). The product is described as containing “Menthol (4.0%) and “inactive ingredients” including: Chloroxylene, Acetone, Blue 1, Iodine, and extracts of Calendula, Echinacea, Wormwood Herb, Potassium Iodide, Thymol, Water and Wormwood “. Decades ago who used the Adsorbine Jr. liniments for muscle pains began to report the topical application of Adsorbine Jr. seemed to prevent attacks by gnats, flies and other biting insects including Black Flies.