

## **SUPPLEMENTAL FEEDING AND BOBWHITE MANAGEMENT**

Bill Palmer  
Director of Game Bird Research  
Tall Timbers Research Station

Food management has always been a part of bobwhite management. For many years, biologists recommended planting food plots for bobwhites. However, food plots have many disadvantages; they are expensive to plant relative to the area they affect, they are only suitable where soil, water, and topography permit planting, they often fail when natural food sources fail such as during droughts, and when they do succeed they provide food when natural seed sources are at their greatest during early fall. While food plots can serve other useful functions, such as providing bugging areas for broods, their weaknesses as a management tool to deliver quality food year round to bobwhites often makes them inefficient and ineffective.

Today, supplemental feeding programs have become a common management practice in the Southeast. Supplemental feeding programs have evolved from the application of feed during winter to improve hunting to an integral part of bobwhite population management. The keys to a successful supplemental feeding program include selecting a safe food source and the proper frequency, rate, and distribution of feeding.

Before I discuss what entails a successful feeding program, understanding how feeding programs benefit bobwhite populations is necessary to understanding why they are important. Research indicates that supplemental feeding reduces movements of bobwhites, which can be helpful for holding bobwhites on a property. This can be important on relatively small properties because it keeps bobwhites on areas that are actively managed. Feeding programs tend to increase bobwhite survival, especially during periods of drought or excessive predation from migratory predators. Increased survival is important because as survival increases, so does the potential reproductive output of the population. Where bobwhites are hunted, supplemental feeding can shift mortality away from predators to hunters. That is, even if annual survival is the same, more birds are harvested and fewer are taken by predators. Finally, supplemental feeding may increase the number of bobwhites that successfully nest and hatch a brood. Taken together, supplemental feeding can maintain higher populations over time than if it was not available to bobwhites. To recap, supplemental feeding is an important population management tool because it increases survival and nesting while reducing movements off your property, and more of the annual mortality is attributable to hunting – a goal of management – than predation.

What supplemental feeding cannot do is provide habitat. Without a solid habitat management program, supplemental feeding is a waste of time and

money. Bobwhites have relatively specific habitat needs, requiring natural foods, year-round habitat, nesting sites, brood habitat and protection from the elements and predation. I cannot stress enough that without well-managed habitat, supplemental feeding is a waste of time. It only benefits bobwhites that have access to suitable habitat.

A good supplemental feeding program provides a useful food resource, year-round, to a large percentage of the bobwhite population. If year-round feeding is not an option, the most critical time from a population management point of view is from January through June. This provides bobwhites with ample food resources during the leanest months of February and March, and helps ensure bobwhites maintain good condition through the first few nesting attempts.

Many types of feed can be used for bobwhites. We generally recommend using sorghum because it is small, inconspicuous, and relatively resilient to rot. Corn is probably the most commonly used seed, but it tends to rot quickly in wet warm weather. Other seeds that can be used include nearly any grain seed such as wheat, soybeans, and millet. Regardless of the type of seed, it is important that you ensure the food source is safe and not infected with aflatoxins. Aflatoxins are mycotoxins produced by strains of *Aspergillus spp.* that exist on all seeds and can cause health problems for wild turkeys and bobwhites. While there is some conflicting information, aflatoxin levels should be < 20 parts per billion (ppb) to avoid any harmful effects on gamebirds. Some "wildlife" feeds are sold for wildlife because they are unsafe for poultry or livestock. If in doubt, have your source of seed tested to ensure that aflatoxin levels are low, preferably < 20 ppb.

We have researched the benefits accrued from using processed foods, such as poultry laying mash, or foods high in certain amino acids (protein), such as soybeans. While grains can be spread, processed laying mash needs to be supplied through feeders in a mix of grain and mash. However, research generally indicates that these additions to grain only result in minor differences in productivity of bobwhite populations. Therefore, I recommend a solid grain feeding program, rather than more time-consuming and expensive "quality" diets.

Feeding can be accomplished by spreading feed along dedicated feeding routes, or with a large number of feeders (about 1 per 15 to 20 acres), but is best provided in adequate cover. I recommend supplemental feeding along dedicated feeding routes for many reasons, but primarily because bobwhites can access feed where they want to be, not where we place a feeder. Also, feeders tend to attract rodents, snakes, hogs, deer, raccoons, bears, and other critters that make feeders less useful for bobwhites and more difficult to manage. For instance, we have video showing cotton rats scaring bobwhites away from a feeder. I don't have to tell you what a hog will do to a feeder. Finally, feed in feeders tends to increase in aflatoxin content over time, especially in warm humid climates.

With a well run feeding program, most bobwhites will have access to the food because it is spatially distributed through the available habitat. The goal is to make the supplemental food resource available to all the coveys on a property. On Tall Timbers, we have dedicated feed trails that are approximately 300 yards apart and follow a logical route through the uplands. This same system is successfully used on some rangelands managed for bobwhites. Supplemental feeding along existing roads through the habitat is also a successful management technique. Feeding can either be continuous along the feeding trail, or a spreader can be turned on and off strategically to feed areas known to have coveys or the better habitats. Use common sense when determining how to feed a tract of land. If it is too wet to traverse, then it is probably too wet to feed.

Feed should be spread every 2 weeks at a rate of 1 bushel of sorghum per 25 acres. So, if you have a 1000 acre tract of good habitat you should plan on spreading about 40 bushes per feeding, every two weeks. In my experience, this amount of feeding is the least you should consider to have an effective feeding program. However, every property is different and with experience you can determine if this is too much or too little and you can vary either the amount or frequency. If there is ample feed remaining after 2 weeks, and bobwhites continue to be seen on the feed trail, feeding every 3 weeks may be okay during that period. However, factors such as rainstorms and other animals, can cause this to vary tremendously year round, thus every two weeks is a good standard.

During the hunting season it is pretty easy to tell if your feeding program is working. Most, probably 80% or more of bobwhites that are harvested and have fed should have at least some supplemental feed in them. If not, your coverage or feeding frequency is too low and you are not impacting the bobwhite population.

A properly implemented feeding program should be considered a population management tool. When done correctly, research indicates that higher densities of bobwhites can be maintained over time. However, it is not a cure-all, as habitat must be managed first in order for bobwhites to benefit from supplemental feeding.

