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### What's Really Going On During Antler-Growing Season

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With winter coming to an end, bucks will soon be shedding their antlers. Then, within a month after antler drop, they'll typically start growing their next set.

What triggers this series of events? Basically, it's all about daylight hours. At the end of winter, after the rut, as the days get shorter, a buck's testosterone level drops dramatically. This initiates the process of antler shedding.

In the spring, as the days get longer again, the pituitary gland in the brain is stimulated to produce hormones that control bone growth. The first bone growth area to be stimulated is the pedicle.

Antlers can grow a half-inch per day or more and are one of the fastest growing tissues in the animal kingdom. We know that antler size is affected by age, genetics and nutrition, although other factors such as stress, disease and weather can have a big impact.

#### Sound Management

Anything that causes a buck to reduce his feed intake during antler growth is going to affect the ultimate size of the antlers. Of the three major factors affecting antler size, nutrition is one of the easiest for a manager to control. If required nutrients are in short supply during antler growth period, several things can happen, all of them bad:

First, the antler growth rate will slow. Since antler growth occurs for only a limited time (about 120 days per year), an antler growing at a rate of 25 grams per day is going to be larger than one growing 15 grams per day during the same period. A lack of nutrients during this time will result in slower growth. It will also impact antler mass and density, producing antlers that are weaker and more susceptible to breakage during rut fights.

Desirable characteristics, such as antler mass, number of points and beam circumference, all of which affect Boone & Crockett Score, will be negatively affected by poor nutrition.

#### Good Health

Priority of nutrient use in bucks is of particular importance. First priority goes to support necessary body functions (basal metabolism, growth, activity and reproduction). Anything left over is used for antler growth. That's why supplementing a deer's diet in summer is so important. A buck needs to consume a highly nutritious diet during every antler growth season. In fact, a period of inadequate nutrition this year could actually have an adverse affect on antler development for several years to come.

#### Good Nutrition

Protein and minerals play a huge role in determining the size of a set of antlers. Think of it this way. If a big buck grows 180 inches of antlers between March and the end of August, that's comparable to you cutting off your arms and growing them back in four months.

In the last 40 days of antler growth, about two-thirds of the mineral is deposited. During that time a buck simply cannot consume enough in a day to get all the minerals he needs to mineralize his antlers. So he "borrows" it from within his body. In a process similar to osteoporosis in humans, minerals are extracted from the ribs, sternum and skull and deposited in the antlers. As a result, bone density may decrease by as much as 30 percent.

That's why mineral nutrition is crucial even after antlers are finished growing. The buck has to replenish the minerals in his bones so that he has enough to do the same thing all over again next year.

Hardened antlers are high in minerals, mostly calcium (about 20%) and phosphorus (about 10%), in addition to a lot of trace minerals such as zinc, copper and manganese. This illustrates the importance of having adequate minerals in the diet when antlers are growing.

It's worth noting here that, regardless of what you might have been told, after a certain point, putting more minerals in the feed doesn't help. A buck can absorb only so much mineral content each day, no matter how much is in the feed. There is also some data to indicate that a buck may preferentially use "stored" body nutrients during antler growth versus nutrients from his daily diet. This may be why it's so critical to have a buck in excellent body condition prior to the start of antler growth.

So, as we start a new antler growth cycle, remember that feeding a nutrient-dense, balanced, highly palatable diet, like Purina Mills® AntlerMax® Deer 20 with patented Protein and Mineral Technology, will pay big dividends next fall. It's best to feed AntlerMax® free choice, because if a buck's diet is low or marginal in one nutrient, antler growth may be diminished even though other nutrients are adequate.

Remember, especially with minerals, more is not always better. The key is having enough in the right ratio with other minerals in the feed. Anything more just goes out on the ground.