

Salt Tastes Good, But Does It Benefit You or Your Deer Herd?

by: Kent Kammermeyer

Among deer hunters and biologists, there exists a condition of virtual uniform agreement that deer are attracted by salt and use it heavily in certain locations at certain times of the year. However, with any further in-depth discussion of salt, this mutual satisfying agreement ends. There is little agreement among biologists because there is little research to prove why deer use salt or how much they need, or which elements found in salt or minerals are most important for deer for antler growth or reproduction. No wonder! It's a complex question involving soil fertility and composition, deer physiology and nutrition and minimum daily requirements necessary for optimum growth and antler development. It's like settling the controversy of whether butter or margarine is better for you. What about saccharin or nutra-sweet? How much vitamin B12 do you need every day? Millions of dollars each year are spent on these basic important human nutrition questions and the answers still are not forthcoming. Taste preference is another complicating factor. Do bass prefer minnows, crawfish, or worms? What about exotic colors (motor oil, pumpkin, grape)? Obviously, the deer-salt relationship is even more complex than this and needs some serious, expensive research in the future. In the meantime, let me update you on the latest information available on salt and its trace components, what your deer probably needs for antler development, and how to apply salt to your best possible advantage to benefit both your deer herd and hunting strategies.

For starters, most soils are lacking in Sodium, Calcium, Phosphorus, Zinc, Cobalt, Selenium, and many other essential elements that are contained in trace mineral salt and have shown to be important to deer. Deer are definitely attracted to both sodium chloride (NaCl-table salt) and calcium chloride (CaCl-rock salt) licks. Scientists think that both sodium and calcium are necessary elements for many bodily functions of maintenance and growth, and deer (somehow realizing this) seek out sources of these elements lacking in the soil. Deer needs do not end here, however. Studies in Pennsylvania and Mississippi have shown definite dietary needs for Calcium and Phosphorus and that these elements are most valuable to deer in a 2:1 ratio in their diet. By the way, antlers are composed of 20% Calcium and 10% Phosphorus, just like other bones in the deer's body. For this reason, several biologists and researchers have recommended a concentration of 16% Calcium (CA) and 8% Phosphorus (P) in any salt which is put out for deer. This is one of the highest concentrations

currently available in commercial salt mixes and is sufficient to provide deer the elements necessary for antler growth and other functions. Pennington's Rackmaster Deer Minerals (25 lb bag) has 16:8 CA:P and 45% salt (NaCl). When asked to provide these high concentrations in block form, dealers and manufacturers of salt say that they cannot provide high concentrations of the two elements in block form but they can provide them in loose granular form packed in bags. First recommendation: Don't buy salt blocks. Your money is better spent on loose salt formulations with high percentages of Calcium (16%) and Phosphorus (8%). Total Sodium Chloride in these bags should run between 30% and 50% with various trace percentages of Zinc, Magnesium, Manganese, Sulfur, Copper, Iodine, Cobalt, and Selenium. This bag salt is available from several sources and brand names including Pennington Seed Company (see above). It varies widely in price ranging from \$6 to over \$20 per 25 lbs of the mixture. Pennington's mix is \$7.50/bag. Price can often be a function of how pretty or ugly the package is - remember that deer won't eat the package anyway.

Let me summarize the scoop on salt up to this point. Salt (both rock salt and table salt) definitely attract deer and deer need both Sodium and Calcium for optimum growth and maintenance where these are lacking in the native soils as they are in most of the U.S. Phosphorus is also a very important element lacking in the soil and provided by some salt formulations in a 2:1 ratio with Calcium. Other trace minerals may be important but their need by deer is less well known. So far, we know that deer are attracted by salt and deer need some of the elements contained in salt formulations.

What else? Deer apparently need and use salt the most in spring and summer when vegetation is lush, bucks are growing antlers and does are carrying or raising fawns. Peak months of usage for salt appear to be the months of April, May and June. After June, usage tapers off gradually through the summer until finally stopping completely sometime in the fall. Deer usage of salt, basically conforms to the growing season for native vegetation, again hinting that elements contained in salt are missing from the native vegetative diets of deer and the deer are seeking these out from the salt.

For the greatest benefit of your deer herd and antler growth, your salt should be applied in March so that it is fresh and available to deer when they seek it the most - especially during new antler growth. Another reason for application of salt in March has been supplied by Georgia DNR biologist Reggie Thackston of Forsyth, who completed a research project monitoring the longevity of salt in the soil and its usage by deer. Reggie's results indicated that salt leached through the soil very quickly even on heavy clay soils. In only 3 weeks after he applied



a mineralized salt formulation to the soil, the concentration of salt was greatest at the 3 to 6 inch depth while that of Calcium and Phosphorus remained highest at the surface of the soil. This phenomenon may indicate at least 3 things: 1) Attractiveness of deer to sodium may decline quickly over time, as it leaches downward; 2) Deer dig deeply in salt licks to seek leached sodium at lower levels; and, 3) Reapplication of pure Sodium Chloride (without Calcium or Phosphorus) once more per year (possibly in June) may increase attractiveness of salt licks and encourage more usage of the Calcium and Phosphorus which remains available at the soil surface. Time will tell if these results continue to hold true or are replicated by other research.

With the questions what and when answered, the next questions are where and how much. Without a doubt, the best soil for a salt lick is heavy clay. Sand is the worst. The obvious reason was explained above - salt quickly leaches downward and disappears. It leaches much slower in clay. It also runs off much slower on flat ground. The ideal spot for salt then is a flat clay ridgetop in a shallow depression mixed lightly with the soil. One 50 lb bag per site would not be too much. One salt lick per 300 acres (one-half square mile) would be a good rule of thumb to make these sites available to all the deer on your property. Any more than this would probably be wasted and any less may not be enough.

One club that I am familiar with got a little carried away a couple of years ago with salt. Knowing that a little can be a good thing, and that obviously a lot more is even better, this club proceeded to put out 1 1/2 tons of salt on 900 acres! One of the members was heard describing their deer as well preserved with high blood pressure! Seriously folks, deer don't need this much salt. Until we find out differently or better, go by the 50 lbs per 300 acre rule and spend the rest of your money on lime, fertilizer, and food plots. By the way, it is no coincidence that lime supplies Calcium and Magnesium and fertilizer supplies Phosphorus. Sound familiar?



The general rule about salt application and formulation should apply to all regions of the country including Mountains, Ridge and Valley, Piedmont, and Coastal Plain. Only one problem exists on the Coastal Plain in some localities and that is lack of heavy clay soils. Salt application here will obviously need to be at more frequent intervals, possibly 3 to 4 times per growing season. Possible use of troughs or plastic or metal liners for salt licks may greatly increase their longevity and effectiveness.

Now, finally the bottom line. Let me guess that there might be a few folks out there in readerland who don't put salt out for the benefit of deer or to grow big deer antlers, but maybe just to hunt over it. This may be totally illegal in some states! In other states, however, there is a way to do this legally to accomplish all three objectives using the methods I just prescribed and a few extra precautions. In Georgia, for example, it is illegal to hunt deer over bait. Salt is considered bait if it is visible on top of the ground and you are hunting within 200 yards or in sight of it at any distance. However, it is perfectly legal to hunt over a salt lick where the salt is completely dissolved into the ground and not visible on top of the ground. This condition will always happen if salt is applied in early spring and hunted over in the fall. If you decide to apply salt in September, don't hunt over it! It's bait, just like corn or apples.

What about the effectiveness of hunting over salt licks in the fall? It is really variable but mostly ineffective, deer usage is fading rapidly. During bow season, there may be enough deer usage of salt licks to warrant hunting on a lick where salt is completely dissolved. This is very unlikely during gun season. By November, usage of licks fades rapidly and does not increase again until spring greenup in March or April. Stories of deer hunting success over salt are probably tainted by misinterpretation of why the deer was near the salt lick (on its way to a food plot or acorns, near a scrape or rub etc. etc.).

In summary, the application of salt formulations probably benefits both you and your deer herd if it is done correctly and legally. Anyway, until we gain further insight and begin fitting more pieces to the deer puzzle, it definitely can't hurt and is not very expensive when compared with lease prices or food plot costs. The other important point is that salt formulations are like vitamins and minerals to people - they are meant to supplement the diet by providing elements which are lacking in native diets. They are no panacea and cannot replace good deer management, food plots, timber management, soil fertility or acorns when it comes to deer growth, population size, or antler development. So, take this with a grain of salt, let salt formulations be a small important part of a bigger deer management program on your property. Application of salt judiciously is a wise means, not an end. That trophy buck which may appear on your wall this year may be the result of salt plus 25 other factors which went into his antler development and your hunting skills!

The best article that I have ever read on salt and minerals was “**Mineral Supplementation for Antler Production**” by Harmon P. Weeks, Jr. pages 155-168 in **Quality Whitetails: The Why and How of Quality Deer Management** by K.V. Miller and R.L. Marchinton Stackpole Books 1995 available from Quality Deer Management Association at 1-800-209-3337.