

Wednesday Jul 28, 2010

23-0-0-11Ca

Dwight Johnson, a farmer from Elm Creek, Neb. spread 300 lbs per acre of 23-0-0-11Ca on 9 acres of native grass and it yielded 57 1,500 lb bales, a yield of 4.75 tons per acre. That is the kind of yield I want.



Native grass treated with 23-0-0-11Ca in Elm Creek, Nebraska.
Photo courtesy of Jeff Littrell.

So I purchased 4000 lbs of 23-0-0-11Ca and will spread it across 15 acres or 266 lbs per acre. On an adjacent area, as a comparison I will spread 2000 lbs of 46-0-0 (urea) across 15 acres or 133 lbs per acre. In both instances I am applying 61 to 62 lbs of N per acre. I am applying this to a cool season grass pasture that was just cut and will be cut once more this fall sometime in October. I will put in fence posts to demarcate and separate the two areas so I can cut and bale them separately.

So what is this 23-0-0-11Ca? It is 70% ammonium nitrate and 30% pellime. The ammonium nitrate is a fifty fifty blend of ammonium and nitrate. Ammonium nitrate is not an easy fertilizer to get but some retailers are still willing to go to the hassle and sell it.

Jeff Littrell, with BRT Ag and Turf in Rochester, Minn. said ammonium nitrate goes back 50 years when it became available as a corn fertilizer. "I was taught over the years that we need to keep a grass vegetative and resist its tendency to go reproductive. To do that we need to feed grasses nitrate."

Littrell explained that urea, UAN and AMS have too much ammonium in their formulation. And while they the ammonium nitrogen does eventually convert to nitrate, it is this immediate availability of ammonium that signals a grass plant to slow or cease vegetative growth (foliage and roots) and become reproductive (form seed heads). "In the turf industry we found that with grasses, either cool or warm season, that when we put on a urea-based ammonium fertilizer the grass will produce seed heads. The plant does everything it can to produce a seedhead and vegetative and root growth stops. When we switch over to a predominantly nitrate source, we keep it growing vegetatively, producing more foliage and roots."

I guess this explanation makes some sense but this wasn't something I was taught in a university plant physiology, plant nutrition or soil fertility. But I have learned that university experts don't have all the answers either.

So what is it with the pellime in the formulation? "By adding calcium to the nitrate nitrogen we can stabilize it and it acts as a slow release fertilizer. We also know that ammonium interacts with lime and slowly releases carbon dioxide (CO₂) and the regrowth gets a CO₂ response," said Littrell. And the CO₂ response he is referring to is a bump in photosynthesis over a few weeks as the pellime slowly releases carbon dioxide.

Littrell said "The proof is in the pudding at the end of the season when you harvest yield." Johnson got 57 bales off 9 acres (6.3 bales per acre) so I am wonder how many 1500 lb bales I can get off 30 acres? I doubt it will be 90 to 95 bales (6.3 x 15 acre) since it is a cool season grass and it is the second cutting. But I would like to harvest with 75 bales from that same area. We'll see, as Littrell says "the proof is in the pudding" when I compare yield to the adjacent area treated with urea.

Posted at 11:20AM CDT Jul 28, 2010 by Dan Davidson

Comments (1)

That is a powerful combination, works on corn or wheat too. That fits well in my fertility program in balancing the 17 nutrients for optimum growth focusing on the 10 or so we test and apply to the soil.

Posted by Ed Winkle at 02:24PM CDT Jul 29, 2010