

ONA REPORTS

published in

THE FLORIDA CATTLEMAN AND LIVESTOCK JOURNAL

June - 1999

Mixing Seed with Fertilizer

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I am for anything that will cut costs and make things easier as long as I don't have to give up quality to do it. Mixing seed with fertilizer and applying them at the same time provides a good opportunity to cut a few dollars from pasture establishment costs, but there are two very important considerations least you sacrifice quality. First, the fertilizer company must have the Means of thoroughly mixing the fertilizer with the seed. Fertilizer companies have to be careful about contaminating mixing machinery with seed. You need to ask the fertilizer salesman if his company has facilities for mixing seed with fertilizer during the blending process. Second, once the seed and fertilizer are mixed it must be applied to the pasture within a few days or seed viability will decline. Suppose you had a pasture ready to seed on Friday and the seed and fertilizer were mixed Thursday but you had 2 inches of rain Thursday night and couldn't get into the pasture until Monday. Sounds like a familiar story. What effect will this have on the seed?

To find the answer, we mixed bahiagrass and Suerte seed with four common fertilizer ingredients: ammonium nitrate, ammonium sulfate, triple super phosphate, or muriate of potash. Seed was in open containers containing each ingredient for up to 14 days. We took samples of seed and conducted germination tests at 0, 1, 2, 3, 4, 7, and 14 days.

Of the two fertilizer ingredients that supply N, ammonium sulfate had the least effect on germination. With Suerte there was no reduction in germination even at 14 days (average 70% over 14 days). Bahiagrass lost viability in ammonium sulfate by declining linearly from 70 to 55% at 0 to 14 days, respectively. Ammonium nitrate had the greatest negative effect on seed viability compared with any other fertilizer ingredient. Suerte germination declined from 86 to 6% between 0 and 14 days and bahiagrass declined from 76 to 31% between 0 to 14 days of exposure. In our example above, by Monday afternoon (4 days) Suerte mixed with ammonium nitrate would have declined from 86 to 56% germination and bahiagrass, would have declined from 76 to 47% germination,

which is a substantial loss in seed quality. Exposed to the atmosphere, the ammonium nitrate absorbed 6% water (by weight) while ammonium sulfate had absorbed less than 1%. I believe the additional water from the ammonium nitrate combined with the fertilizer salt led to the decrease in viability.

Triple super phosphate had no effect on germination of either grass seed after 14 days. Muriate of potash had no effect on Suerte but decreased bahiagrass germination linearly from 72 to 40% over 14 days.

In a "real world" situation, I doubt that seed and fertilizer would remain together for 14 days, but 4 to 7 days are possible. Also, seed would usually be mixed with N-P-K fertilizer ingredients plus a filler, so the salt effect would be minimized. To be safe, it may be prudent to use a low analysis fertilizer containing more filler and to use a fertilizer containing more P than N (from ammonium sulfate) or K such as a 10-20-10 analysis. At 300 lb/A, this would supply 30-60-30 lb/ A of N-P₂O₅-K₂O, respectively. If seed is mixed with a straight N fertilizer, then ammonium sulfate would be the best choice, not ammonium nitrate. Regardless of the fertilizer mixture, it is important to spread fertilizer containing seed as soon as possible after the seed and fertilizer are blended.