

November 14, 2003

## COMPOST CAN INCREASE YIELDS

Last month, after an invitation from Jill Oldehoeft, I toured the Mid-America Feed Yard west of Daykin. Jill is a former 4-H'er from Jefferson County that now works for the Feed Yard as the Safety and Regulatory Manager. The Mid-America Feed Yard is located on a World War II airplane base and utilizes the concrete on an old runway for their feed yard operation. At the time of the visit, the Feed Yard had about 12,000 head of cattle on feed.

On average, a beef feedlot can scrape 14 pounds of manure and soil out of the pens per head per day. After cleaning pens, the beef manure and soil mixture is composted on a large concrete pad. The compost heats up and is turned using a large windrowing machine that makes a long, consistent windrow. By the mixing and turning action, this aids the composting and keeps the heat down to temperatures in the 104 to 140 degree range, the range composting microorganisms work best in. If the windrows get too dry, the mixing machine can add water to make a better product.

With large quantities of manure, the Feed Yard can reduce the amount of waste they handle by composting. Advantages to composting include killing pathogens, fly larvae, reducing some of the weed seeds and improving handling characteristics of the manure and other residues by reducing their volume and weight. The compost is low odor, fine textured, low moisture material that can be a gardeners friend or hauled to farm fields as fertilizer. Fred Wahl, a hauler out of North Dakota, spends his fall and winters in Ohio and hauls the compost to area farms. The compost is sold to farmers for a small fee the Feed Yard charges and for the transportation and application fee that Mr. Wahl charges. With this in mind, Fred has hauled as far away as 27 miles from the Feed Yard to farm fields. Because of the nutrient value of the compost, it is economical for farmers to use it as fertilizer in crop fields a considerable distance from the Feed Yard. Last year, about 1,500 loads were hauled.

You can take the same nutrients available in manure and compost and purchase them commercially, but you will not get the same yield response. We can't predict exactly what your yield response will be, but under irrigated circumstances it wouldn't be unheard of to experience yield increases of 7 to 10 bushels/acre. Animal compost adds something else to the table that causes crops to respond favorably.

I have heard a few farmers comment on a concern about sodium or salt content. We have not seen a significant increase in EC content (how salt is measured in soils) following N-based manure application (20-25 tons/acre) in several locations in eastern Nebraska on dryland and in central and western Nebraska in irrigated studies. The irrigated field in western Nebraska has received manure since 1953. Farmers generally have been using a rate in the range of 15 tons per acre. Bear in mind, manure has more salt content than compost.

UNL studies indicate nitrogen availability from composted and non-composted beef cattle manure was found to be 20% and 40% in the first year after application in field studies, respectively. Producers can look at a credit of about 20% of the total organic nitrogen applied in the compost in year one. Compost is also an excellent source of phosphorous. Soil samples that producers have



shown me have indicated very favorable increases in soil test P levels. Good results can be expected either in no-till or conventional tillage systems.

Looking at nitrogen and phosphorous value, a 10 ton application can be valued at \$80.00 to \$97.00 per acre fertilizer value depending on the compost test values. With a 10 ton application, there is an additional value of 400 pounds of Pel lime equivalent or \$18.00 per acre or Ag lime equivalent of \$4.50 per acre (this shows you how much more Pel lime costs compared to Ag lime). Other nutrients available in the compost include Ammonium N, K, Zn, S and other trace elements crops use. For specific hauling costs and information, contact Jill Oldehoeft at (402) 295-2216 or e-mail her at [jill@midamerica-feedyard.com](mailto:jill@midamerica-feedyard.com). For more information about compost pros and cons, contact me at (402) 821-2151 or email [rpryor1@unl.edu](mailto:rpryor1@unl.edu).

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