

## LAND APPLICATION BASED ON CROP NEEDS

Broiler litter needs to be applied to crops that have high nitrogen requirements. Preventing nitrogen in ground water is the main effort in promoting groundwater quality. Nitrogen in the nitrate form is water soluble and leaches readily. Applying litter to growing crops helps prevent leaching. Application of nitrogen rates that are higher than crop requirements can promote leaching. Broiler litter applications need to be applied according to the nutrient content of litter and the nutrient requirement of the crop.

**Table 1.** Broiler Litter Rates Required to Meet Nutritive Requirements of 6 Ton Coastal Bermuda grass Yields.

	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
6 tons or 3 cuttings of Coastal	300	100	300
Broiler Litter / Acre			
2 Tons	116	<b>104</b>	80
3 Tons	174	156	120
4 Tons	232	208	160
5 Tons	<b>290</b>	312	240

Bermuda grass and Bahia grass have a high nitrogen requirement and also a deep root system that can pick up nutrients before they can leach into groundwater. The nutrient requirement for a Coastal bermuda grass cut three times is shown in Table 1. Coastal cut three times is estimated to produce 6 tons ( 2 tons per cutting). These figures are taken from a table in the Records Section entitled, "Crop Yield Goals Versus Nutrient Recommendations."

Table 1 also shows the estimated nutrients applied using 2, 3, 4 and 5 tons of broiler litter per acre.

Two tons of litter will supply all of the phosphorus required for 3 cuttings but only 1/3 of the nitrogen and 1/4 of the potassium required.

Five tons of litter almost meets the nitrogen requirement but supplies over three times the amount of phosphorus. Excess phosphorus, if leached into groundwater or washed off the surface into streams, also causes problems with groundwater quality. Extremely high levels of phosphorus in soils can also create problems with plant growth.

Three to four tons of litter in this case is all that is needed to be applied to coastal cut three times. Approximately 100 pounds of commercial nitrogen and 150 pounds of potash may be applied to meet the crop goals, depending on how much litter is applied. This level will prevent nitrogen from leaching and phosphorus from building in the soil too fast. If the soil test phosphorous level is high, it is best to only apply the amount of phosphorus the crop requires. When the soil test phosphorus level is low or medium, it is a good practice to apply no more than twice the amount of phosphorus the crop requires.