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Poultry Litter Management for Efficient Crop Production

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Proper management of poultry litter (PL) as a nutrient source has potential to provide economic as well as environmental benefits. In North Carolina, state regulations require that PL must be applied at “no greater than agronomic rates.” Some farming operations typically apply PL at rates of 12.3 tons/ha for corn and up to 5.6 tons/ha for cotton. Typical nutrient content of PL based on waste analyses is approximately 15 kg/ton nitrogen, 14 kg/ton phosphorus and 19 kg/ton potassium. Even so, many farmers still use starter fertilizer and extra nitrogen along with PL. The purpose of this study was to compare crop response to PL alone and in combination with supplemental applications of commercial fertilizers. Replicated field tests were conducted in Union County on corn during the 1999, 2000 and 2001 growing seasons and on cotton during 2000 and 2001. For corn, treatments at each site included poultry litter alone and in combination with 17-17-17, 30% liquid nitrogen, and 17-17-17 + 30% liquid nitrogen fertilizers. For cotton, 9-23-30 was used instead of 17-17-17. To date, results from both the corn and cotton studies indicate that PL alone can provide adequate fertilizer nutrients without significant yield losses.