The effect of 15N enriched urea on loblolly pine seedlings

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ABSTRACT: Nitrogen (N) is a nutrient component that aids in growing crops and is unfortunately very deficient for crop production. Researchers believe that an increased use of nitrogen can result in substantial economic return for farmers. The pot study was designed to look at nitrogen uptake of loblolly pine seedlings in soils that have been fertilized with 15N enriched urea. Soil from the upper 15 cm that had been fertilized the previous year from four sites across the south eastern part of the US were collected in May of 2014. Two loblolly pine seedlings were planted into each pot and grown for 15 weeks. After three weeks, one seedling was harvested, dried, weighed and processed for 15N analysis. After only 3 weeks enriched 15N was detected in each of the fertilized treatments in the developing shoot. All seedlings were harvested at 15 weeks and separated into root, stem and foliage for biomass and 15N determination (still in progress). We will be able to test how much of the nitrogen used by the seedlings came from the fertilizer that was applied and how much was from the native soil. We will also use the resin strip data to test how the fertilizer treatments affected nitrogen availability in the soil.

KEYWORDS: 15N, loblolly pine, nitrogen, urea,