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Flue-cured Tobacco and Peanut Response to Diuron, Fluometuron, and Prometryn Applied to a Preceding Cotton Crop

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Flue-cured tobacco (*Nicotiana tabacum* L.) and peanut (*Arachis hypogaea* L.) are commonly rotated with cotton (*Gossypium hirsutum* L.) in North Carolina. Residual herbicides are a recommended component of a weed resistance management strategy in glyphosate-resistant cotton; however, growers are concerned about potential adverse effects of such herbicides on rotational crops. Research was conducted at three locations in the coastal plain of North Carolina to determine the potential for the residual herbicides fluometuron, diuron, and prometryn applied to cotton to carryover to tobacco and peanut planted the following year. Treatments included fluometuron applied preemergence (PRE) at 0 or 1340 g a.i. ha⁻¹ with late or early and late postemergence-directed (PDIR) applications of diuron or prometryn arranged factorially. Diuron was applied at 480 and 840 g a.i. ha⁻¹ early PDIR and late PDIR, respectively. Prometryn was applied at 740 and 1340 g a.i. ha⁻¹ early PDIR and late PDIR, respectively. No visible injury was noted with any treatment in either tobacco or peanut, and no treatment adversely affected tobacco or peanut yield or quality. These results indicate that fluometuron applied PRE and diuron or prometryn applied PDIR can be included in cotton weed management programs without adversely impacting subsequent crops of tobacco or peanut.