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## Plant Population and Planting Date Effects on Cotton (*Gossypium hirsutum* L.) Growth and Yield

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To reduce seed costs, cotton (*Gossypium hirsutum* L.) producers aim to reduce plant populations without sacrificing yields. Field experiments examining the impact of plant population and planting date on cotton growth, fruiting, lint yield, and fiber quality were conducted in Virginia and North Carolina in 2005 and 2006, and in Louisiana during 2005. Plant populations of 4.9, 9.8, and 16.4 plants m<sup>-2</sup> and two planting dates ranging from 24 April to 5 May and 15 to 25 May were targeted. Actual plant populations achieved were 5.2, 9.2, and 11.2 plants m<sup>-2</sup> (Virginia 2005); 5.2, 9.2, and 15.4 plants m<sup>-2</sup> (North Carolina 2005); 5.6, 9.5, and 17.1 plants m<sup>-2</sup> (Louisiana 2005); 4.9, 6.6, and 12.8 plants m<sup>-2</sup> (Virginia 2006); 5.9, 8.9, and 12.8 plants m<sup>-2</sup> (North Carolina 2006). In Virginia in 2005 and 2006, the 5.3 plants m<sup>-2</sup> population had more apical main-stem nodes than 8.9 and 12.8 plants m<sup>-2</sup>, and in 2005 had more monopodial and outer position bolls regardless of planting date. Lint yields were highest with populations of 8.9 and 12.8 plants m<sup>-2</sup> in Virginia and North Carolina compared to 5.3 plants m<sup>-2</sup>, while in Louisiana the highest yields resulted from 5.8 and 9.5 plants m<sup>-2</sup> compared to 17.1 plants m<sup>-2</sup>. In Virginia and North Carolina a maximum of 118 heat units accumulated between planting dates, while 270 heat units accumulated in Louisiana. Regardless of plant population, cotton planted early (1 May) in Louisiana yielded higher than the late planted (21 May). However, there were no yield differences due to planting date in Virginia and North Carolina. In regions where few heat units accumulate early in the season, earlier planting appears to be of little benefit, while earlier planting may increase yields when a significantly larger amount of heat units accumulate near planting.