Sod-based production systems have been successful in some regions of the southeastern and mid-Atlantic region of the United States as an alternative to conventional tillage systems. Research was conducted in North Carolina to compare corn, cotton, peanut, and soybean yield when these crops were strip tilled following four years of tall fescue versus four years of either corn or cotton grown in no till or strip till systems. Cotton yield was higher following tall fescue at all locations compared with yield following agronomic crops. Yield of corn was lower following tall fescue compared with agronomic crops while peanut and soybean were not affected by previous cropping history. Additional treatments in peanut included conventional tillage following both cropping systems, and pod yield was lower at all locations when peanut was strip tilled into either tall fescue or residue from corn or cotton compared with conventional tillage systems. No major differences in soil bulk density or porosity were noted when comparing tall fescue or agronomic crops. Populations of soil parasitic nematodes were often lower in peanut following tall fescue compared with agronomic crops. These experiments indicate that sod-based systems may be an effective alternative to reduced tillage systems, especially for cotton. However, benefits were not observed for peanut or soybean and corn was negatively affected by tall fescue sod.