

Influence of material of spindle and surface texture on cotton left over and spilled over under variable conditions for picking cotton

■ M. VEERANGOUDA, D. ASOKAN AND T. GURUSWAMY

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See end of the Paper for authors' affiliation

Correspondence to :

M. VEERANGOUDA
Department of Farm Machinery and Power Engineering, College of Agricultural Engineering, RAICHUR (KARNATAKA) INDIA
Email : m.veerangouda@rediffmail.com

■ **ABSTRACT** : Cotton is one of the major commercial crops being cultivated both in irrigated and in rain fed conditions in many states of the country. India ranks third in global cotton production after China and the USA. In India harvesting of cotton is done manually by hand picking. Manual picking is not only tedious and labour consuming but also costlier than other agricultural operations. In recent years it has been observed that labour availability is scarce during peak periods of cotton harvesting. The use of mechanical picking by machine is, therefore, considered to be a viable option in minimizing the drudgery involved in hand picking. By keeping these factors in view, the present investigation was undertaken to study the mechanism involved in picking of cotton by the rotating spindles. The spindles were fabricated with the materials selected for the study and they were evaluated for their performance in picking cotton from bolls under laboratory conditions. The cotton left over and cotton spilled under variable conditions ranged from 0 to 30.33 per cent and 0 to 41.35 per cent for the selected varieties. The cotton left over and cotton spilled over were observed to be minimum with hylum spindle for all the varieties. The cotton left and cotton spilled over were minimum upto the speed of 2000 rpm and increased greatly with the increase in speed of rotation of 2500rpm and higher speeds. The cotton spilled over was minimum at higher level of moisture and cotton left over was minimum at lower moisture levels. The surface texture of the spindles did not show any particular trend of increase or decrease of cotton left over and cotton spilled over.

■ **KEY WORDS** : Cotton picking, Picking spindles, Cotton leftover, Spindle speed

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