

## Abstract

In today's scenario, agriculture has a pivotal role to play in the growth and development of each and every country. In India around 70 per cent of the population is engaged in agriculture. Agriculture is one of the most labour intensive and energy demanding occupations. A large number of rural women actively participate. Except probably ploughing, there is hardly any other field operation which is not performed by women who do extremely tedious, time and labour intensive work like sowing, transplanting, weeding and interculture, harvesting, threshing, transport and post harvest operations like shelling, cleaning, grading and processing, etc. All these jobs being non-mechanized have to be performed manually and, therefore, involve considerable amount of drudgery. For the past decades, engineering development in agriculture has concentrated on large machines leaving small tools throughout the industry largely untouched and unconsidered. Thus development of agricultural technology has given little benefit to women who still drudge to carry out agricultural operations. The present study focuses on the weeding operation. The main aim was to introduce new weeding technologies in the district.

From the research conducted inside and outside India it emerges that weeding is a difficult operation involving a lot of drudgery on account of the awkward postures, traditional tools, and long working hours. Four improved weeders were ergonomically assessed along with traditionally used *khutti*. Physiological cost of weeding, muscular stress, postural stress, and bodily discomfort experienced while working with different weeders were examined.

Descriptive survey and experimental design were formulated to proceed with the study. Descriptive survey was planned and systematically carried out to gather data on background characteristics, anthropometric variables, and weeding operation. Split plot experimental design was set up for carrying out the experimental trials. The study was carried out in the Kangra district of Himachal

Pradesh. The study was carried out in 12 villages selected purposively. The sample comprised 96 women farmers selected using disproportionate random sampling technique out of the selected villages. The study concludes that the extent of the discomfort experienced by the women farmers is a function of the age of the women farmers, their health status, the area under cultivation, and the number of hours spent in a day during peak weeding season. It is further concluded that the number of persons who assists women in performing the activity does not affect the extent of discomfort experienced by the women farmers. Body discomfort experienced by the women farmer is not affected by the posture adopted.

The physiological cost with the weeders which were tested was higher compared to khutti. But the area weeded with the weeders was also higher compared to khutti. The study concluded that the work with the weeders results in saving time as more area is weeded in lesser duration. Therefore long working hours of working with khutti in a squatting posture are avoided. Hence drudgery is reduced..