Abstract:
Women are the backbone of the agricultural workforce, but worldwide her hard work has mostly been unpaid. She does the most tedious and back-breaking tasks in agriculture, animal husbandry and homes. Her enlightenment will change the face of the Indian agriculture and rural India. Women are involved in various activities related to agriculture and allied enterprises and some of these activities have found to have profound health risks on women. In such situation introduction of agricultural implements has been proved effective in relieving drudgery. However, in the recent past there is a trend, i.e., agricultural engineering with women’s perspective is gaining importance. Most women cannot invest in the technology. Introduction to new technologies in agricultural operation adopted by farm women leading to the mechanization will reduce the drudgery and improve the efficiency.

Key words: Drudgery, weeding tools, cycle weeder, power weeder

Introduction:
Weeds reduce the yield from 40% to 65% and its eradication is the important challenge faced by farmers. It can be eradicated effectively by using chemicals but due to its ill effects on human health and environment, scope for mechanical weeders or power weeders are gaining much importance. It is proved by many researchers that, weeding in agriculture is a tedious and activity with highest drudgery index. In almost all the crops women are involved in weeding activity. In recent times there is little awareness on herbicides, but in remote villages still use of herbicide is not very much accepted by the farmers. Because they lack knowledge on crop specific weedicides. It is estimated that, about 70 per cent of the labour in agriculture is required for weeding and 90 per cent of the hand weeding is done by women. Women in rural India play a major role in shaping the economy of the country. The women work force in Indian agriculture and allied efforts is estimated to be around 97 million which amounts to be 37% of the total agriculture workers in the country (Khadatkar et al., 2014). Tools and implements for weed control can be machine operated, manual operated or animal operated. Though manual operated weeded are slow in operation but they are the most effective methods. With this background various tools were used to reduce the drudgery of women in weeding activity.

Methodology:
This study was conducted in different villages of Raichur district. Different types of weeders (Cycle weeder, improved weeder in brinjal, hoe weeder, twin wheel weeder) were introduced to farm women for various crops viz., vegetables (brinjal, chilly, tomato) chickpea and DSR paddy. These were compared with farmers local practices. Demonstrations and on farm testings were made in farmers field and their advantages were informed to farmers. They were allowed to use the weeder and later feedback was collected from them.

Results and discussion:
Comparison of weeding performance using cycle weeder and local method: On farm testing was undertaken to assess the performance of cycle weeder vs traditional method in vegetables. The results showed that, cycle weeder reduces the low back pain and enhances the efficiency in weeding to the tune of 60 percent. The condition for weeding with cycle weeder is that, soils should be moist and weeds should below one month old. But they were expressed that, the availability of weeder at local place is a major problem. They do not have accessibility to these tools.

Evaluation of improved weeders in Brinjal:
Three models of weeders i.e. local kurpi as farmers practice, hoe weeder and cycle weeder developed by CAE Raichur and CIAE Bhopal were assessed for their performance. Both the improved weeder could prove to be better over the traditional weeder i.e., kurpi. Because of the change in posture adopted while using weeder, it was expressed by the beneficiaries that these weeder increase the efficiency in weeding at the same time reduces the burden on backbone, which indirectly is responsible for reducing lower back pain. There are limited number people who disseminate knowledge on these aspects. Hence only few women know about these and have limited accessibility.

Demonstration of cycle weeders in vegetables
Another experience in weeding with cycle weeder in vegetables in red soils indicated that, the hard soil is difficult for women to push the weeder. The cycle weeder is not efficient in red soils. Hence, it was revealed that, one tool cannot be used everywhere, there should be focus on development of location specific and crop specific tools for weeding.

Demonstration of cycle weeders in Chickpea: In Raichur district, chickpea is a major Rabi crop, which is cultivated in black soil in about 9000 ha. Cycle weeder were introduced in this crop. This crop is cultivated under rainfed condition, hence these weeder have the limited scope in chickpea.

Assessment of efficiency of different weeders in DSR.
Direct seeded rice is fast spreading in Raichur district due to erratic rainfall and non-availability of labor during peak season. It has other advantage as water saving, being eco friendly and ensures soil health. But weed is menace in direct seeded rice. Farmers have to spend more on weeding. To overcome this problem different type of weeder were assessed for their performance. It was found that, twin wheel weeder with ten inch space between lines was effective when used at 20-30 days after sowing. Also it was more efficient with one spray of stamp extra @ 700 ml/ac on the day of sowing. At 20-25 days only broad leaved weeds with 4-5 leaf stage were effectively removed with this twin wheel weeder. There is fast spread of this technology as local fabricators are trained in fabricating these weeder.

Conclusion:
Cycle weeder reduced the back pain and enhanced the weeding efficiency but soil should be moist and weeds should be below one month old or having 4-5 leaves. Moreover, cycle weeder found to be less suitable to operate in red soils.

Improved weeders in brinjal increase the efficiency in weeding at the same time reduces the burden on backbone, which indirectly is responsible for reducing lower back pain. It is found to be more efficient in case of DSR paddy. Further improved weeder found to be better compared to traditional weeder, kurpi as observed in brinjal crop.

Non availability of improved weeder is the main reason for non adoptability of tools. Hence care supply of these small tools may reduce drudgery of farm women.

Reference:


