Introduction: Aonla preserve making is an important economic activity in India. In small-medium enterprises (SMEs), the pricking of aonla fruit for preserve preparation is mostly done by women workers employing age old hand tools. This manual method is tiresome, time consuming and cannot maintain the quality of the product. Minor accidents like cuts and wounds in the fingers and disorders of upper extremities were also reported during manual pricking due to high vision demanding and repetitive nature of the pricing task. This all has resulted into lowered productivity of the workers. Therefore, a hand operated aonla pricking machine was developed by AICRP on PHT in CAE&T. Machine is portable, simple and easy in operation. The design of the machine is relevant to the physical properties of aonla fruit. The needles are made up of stainless steel to avoid rusting which may affect the pricking capacity of needles and may impact the quality of the final product. The handle is made up of plastic to avoid the grip fatigue while working and to avoid slippery effect on palm.

Objective: To carry out the ergonomic evaluation of hand operated aonla pricking machine to find out its suitability for women workers.

Methods: The ergonomic evaluation of pricking task was conducted with 30 women workers selected from 4 aonla processing SMEs of Hisar Distt. Haryana. The workers were asked to perform pricking for 1 hour with machine in 3 different postures (sitting, squatting and standing) and various ergonomic parameters (physiological, biomechanical and psychophysical) were recorded.

Results: The results of the study revealed that Heart rate while working on machine in different posture ranges from 86 bpm-90 bpm which is acceptable for women workers. The grip fatigue and musculo-skeletal disorders reported with use of machine were low. Rating of perceived exertion and body part discomfort score reported were also low. The pricking capacity of machine is about 15 to 20 kg/hour as compared to 4 to 5 kg/ hour by manual method of pricking. In light of these results, machine was found ergonomically suitable for women workers.

Conclusion: Aonla pricking machine was found useful in terms of increasing work capacity & productivity along with light workload on the workers. All the ergonomic parameters were within the acceptable limits and did not restrict the use of machine. Machine pricking involved good working posture and there by increased output. This all has resulted into increased overall efficiency of the work and worker.

Keywords: Hand operated aonla pricking machine; ergonomics.