

## Assessment of Postural Discomfort in Workers During Grape Cultivation in Western Zone of Haryana

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**Abstract:** A Grape (*Vitis vinifera*) is an important fruit crop in India. Grapes are the third most widely cultivated fruit after citrus and banana. Hand pruning of vines requires the frequent squeezing of the hand to engage a clipper, or the frequent use of a knife. Hazards from the knife are obvious, as there is no solid surface against which to place the vine, shoot or stalk and frequent cuts to the fingers, hands, arms, legs and feet are likely to result. This study carried to Assessment of postural discomfort in workers during Grape cultivation in western zone of Haryana. A sample of 15 respondents was selected purposively from two grape orchards selected randomly from the six grape orchards. Postural discomfort problems assessed by workers during grape cultivation were indentify by the OWAS .In OWAS problems were recorded by activity score in BACK, ARMS, LEGS, LOAD USE FORCE different body parts. shows that land preparation weeding, planting training activity is corrective measures in near further and Pruning activity is corrective measures immediately there was hazardous activity in grape cultivation. The highest discomfort was found in different activity like land preparation, weeding, planting, traning but the highest was found in pruning is corrective measures immediately, there was undesirable posture of the trunk, the upper limbs and the head irrespective of cutting tools used.

**Key words:** Postural discomfort, grape cultivation, pruning

### INTRODUCTION

A Grape (*Vitis vinifera*) is an important fruit crop in India. Grapes are the third most widely cultivated fruit after citrus and banana. Major grape – growing states are Maharashtra, Karnataka, Andhra-Pradesh, Tamil Nadu and the north- western region covering Punjab, Haryana, Delhi, western Uttar Pradesh, Rajasthan and Madhya Pradesh (Singh, 2010). In Haryana grapes are cultivated in an area of 111.00 (000 ha) with a total production 1235.00 (000Tons) and productivity of 11.10 (tons/ha) in 2010-11 (NHB, GOI). Haryana is the sixth largest producers of grapes in the country with 5.7 million ton/ hectare/ year. In vine pruning and harvesting, the operators are open to a great deal of strain likely to trigger or accelerate the WMSDs generating

mechanisms including, repetitive movements combined with external forces acting on the finger, hand wrist system (Using non- powered pruning shears) and static work in the upper arm shoulder system (Wakula *et.al*, 2000). Manual pruning of dormant vines, among the various procedure involved in the production of wine, is one of the most expensive and labour consuming and is exceeded in both respects only by the harvest process (Tassie1992). Hand pruning of vines requires the frequent squeezing of the hand to engage a clipper, or the frequent use of a knife. Hazards from the knife are obvious, as there is no solid surface against which to place the vine, shoot or stalk and frequent cuts to the fingers, hands, arms, legs and feet are likely to result. Clipper is the

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preferred tool for pruning; the major safety hazard is the threat of cuts from contact with the open blade while placing a vine or stalk in the jaws, or from inadvertent cutting of a finger while also cutting a vine or stalk. The frequency and effort required for cutting determines the likelihood of development of cumulative-trauma injuries. The major tasks involved in manual harvesting of wine grape consist of cutting grapes (at a rate of 25-30 cuts per minute) from the vine and dropping them into a tub, and carrying the filled tub to the emptied into trailer-mounted bins for transport (each worker performs about 150-200 tubs per day). Biomechanical strains on the hand wrist system during grapevine pruning through surface electromyography activity of the right flexor digit rum muscle and wrist posture. In this way the authors emphasized high biomechanical strain with maximal voluntary handgrip contraction of 23,5%. Numerous cuts required moderate or extreme ulnar deviation. The force required to operate a common clipper is in excess of recommended values, and the frequency of effort indicates the potential for cumulative-trauma disorders, according to accepted guidelines.

## MATERIALS AND METHODS

The present was conducted in three districts of Haryana state which was selected purposively in consultation from horticultural department of Haryana state. A sample of 15 respondents was selected purposively from two grape orchards selected randomly from the six grape orchards selected in phase I, Who are physically fit and willing to cooperate. Postural discomfort problems assessed by workers during grape cultivation were indentify by the OWAS. In OWAS problems were recorded by activity score in BACK, ARMS, LEGS, LOAD USE FORCE different body parts. There was given a different action categories is given by 1-no corrective measures, 2-corrective measures in the near further, 3-corrective measures as soon as possible, 4-Corrective measures immediately.

## RESULT AND DISCUSSION

### OWAS posture analysis of Grapes cultivation activities

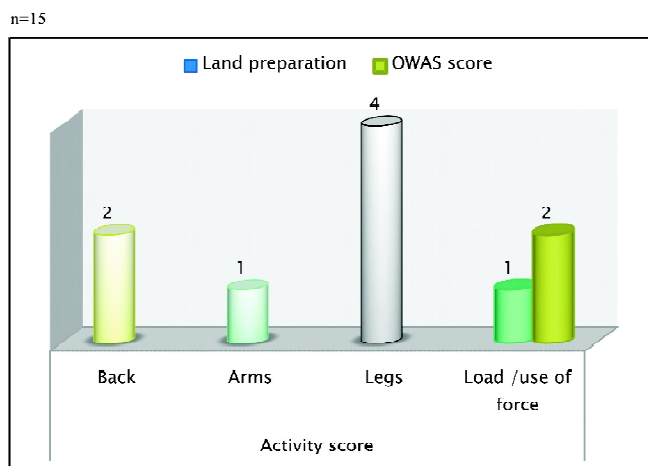


Figure 1: OWAS Posture analysis Grapes land preparation activity

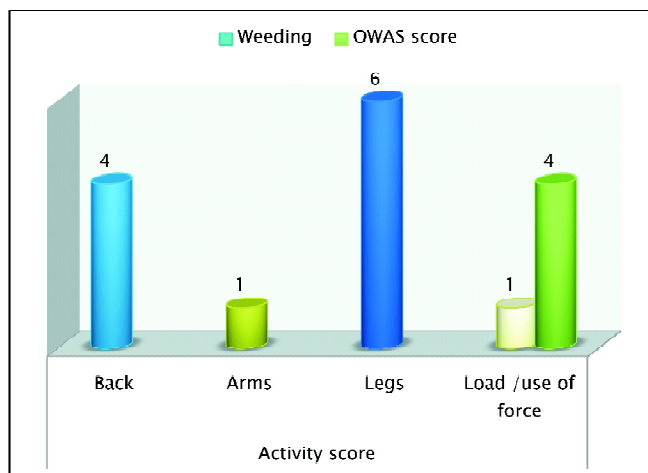


Figure 2: OWAS Posture analysis Grapes weeding activity

Figure 1 shows that OWAS Posture analysis grapes land preparation activity is corrective measure in near further whereas figure 2 shows that OWAS Posture analysis grape weeding activity is corrective measures immediately.

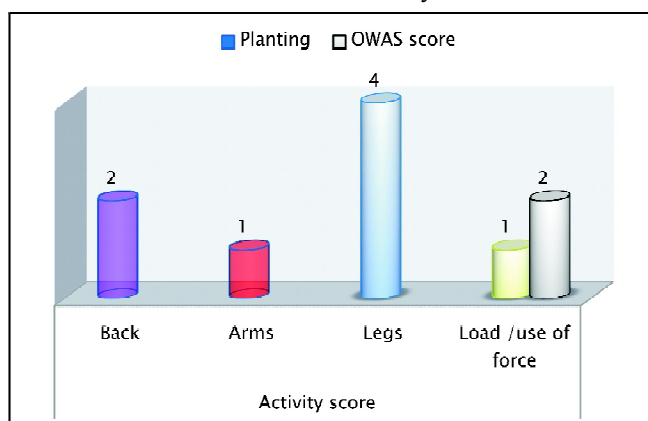


Figure 3: OWAS Posture analysis grapes planting activity

Figure 3 and 4 shows that OWAS Posture analysis grape planting activity and Training activity is corrective measure in near further.

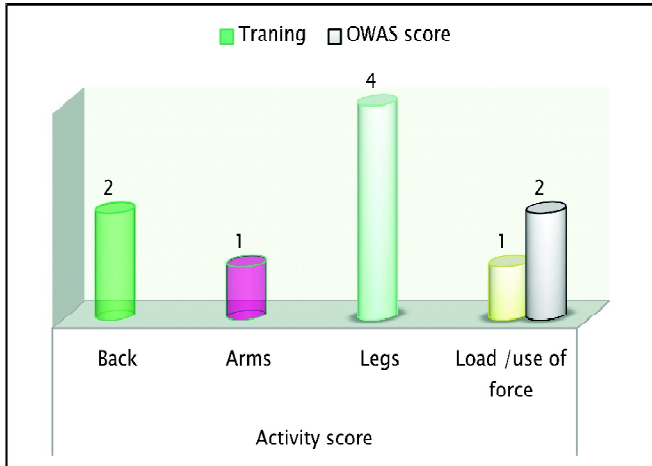


Figure 4: OWAS Posture analysis grapes planting activity

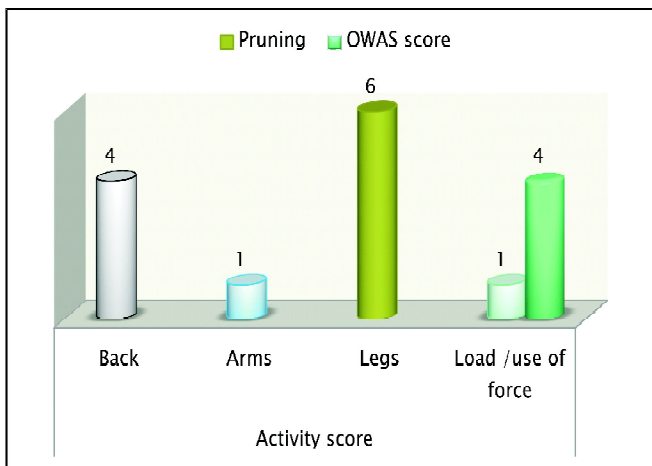


Figure 5: OWAS Posture analysis grapes pruning activity

Figure 5 shows that OWAS Posture analysis grapes pruning activity is corrective measures immediately there was hazardous activity in grapes cultivation

## CONCLUSION

To assessment the postural discomfort in workers during grape cultivation was used to analyze he problems in back ,arms and legs during grape cultivation doing differ activities. The highest discomfort was found in different activity like land preparation,weeding,planting,taning but the highest was found in pruning is corrective measures immediately , there was undesirable posture of the trunk, the upper limbs and the head irrespective of cutting tools used.

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