



TRACTOR DRAWN TURMERIC DIGGER



Prepared based on the research work of
AICRP on FIM, PJTSAU,
Rajendranagar, Hyderabad.

PROF. JAYASHANKAR TELANGANA STATE AGRICULTURAL UNIVERSITY

AICRP on Farm Implements & Machinery (ICAR-PJTSAU)
Agricultural Research Institute, Rajendranagar, Hyd.-500 030
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Cost Economics

The cost economics of turmeric digger was calculated and there was a net saving of Rs. 4000/- per ha when compared to manual digging of rhizomes.

Recommendations:

1. A 45 Hp and above range tractor is required for digging turmeric rhizomes for effective operation.
2. A dead additional weight of minimum 150 Kg is required for easy penetration up to 30 – 35 cm.

Prepared by:

Dr. G. Aravind Reddy, Principal Scientist (Ag. Engg.) & Head
Er. D. Kalpana, Scientist
Er. P. Sudhakar Reddy, Senior Scientist
Er. B. Ashwin Kumar, Research Associate
Er. R. Jayaprakash, Research Associate



Need of tractor drawn turmeric digger

Turmeric is one of the major crops in Northern Telangana zone is having 0.30 lakh ha of land as commercial crop. The crop is annual and remunerative but highly labour oriented. Due to recently emerged labour scarcity in agriculture activities, farming work could not be carried out in time especially during harvesting season. During the harvesting season of turmeric farmers are using the indigenous implement i.e. crowbar, fork type of spade etc for digging the turmeric crop involving much drudgery and labour. Due to indigenous implement, rhizome damage is more because the labour has to dig out the clump all around and in doing so, the fork bruises the rhizomes every time it hits the rhizomes. The wet rhizome yield is 17 to 25 t/ha. Due to drudgery involved in harvesting the farmers grows the crop in maximum of 0.4 ha per farmer. This is the one of the crops, using the conventional method for cultivation which is having highest commercial value of Rs. 4000 to Rs.18000 per quintal of processed rhizome. The labour usually engaged for the work are unskilled and they perform the harvest of rhizomes imperfectly leading to wastage, yield loss and contract labour demand very high wages during peak season which ultimately enhances the cost of production. In view of this a cheap, simple and effective indigenous turmeric digger is needed under Indian conditions. Therefore, tractor drawn turmeric digger was developed, tested and subsequently demonstrated under several locations in Telangana state under Hyderabad center of All India Coordinated Research Project on Farm Implements and Machinery.

Brief description of the implement

The implement consists of flat blade with the width of 1450 mm, frame, circular hollow pipe and three point linkage. The blade rake angle can be adjusted as 45°, 50° and 55° depending on soil



conditions for digging of turmeric rhizomes. The total weight of the implement is 150 kg and an additional dead weight platform is arranged for adding additional weights up to 150 kg for effective digging operation. The machine should be operated in load gear. This is implement requires minimum 45 and above Hp tractor for easy penetration of blade into the soil with 15 % permissible slippage. It is used for digging turmeric in four rows of width 1450 mm in each pass at a depth of 300 – 350 mm at blade rake angle 55°^w, field efficiency of 70%, fuel consumption of 5 l/h and the field capacity was 0.3 ha/h. There was a net saving of Rs. 4000/- per ha when compared to manual digging.

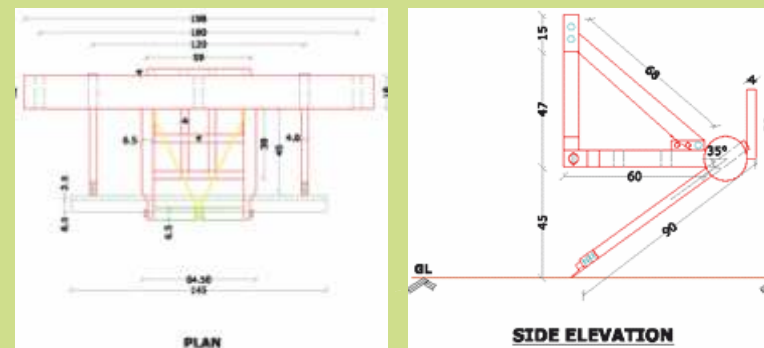


Fig. 1 View of Tractor drawn turmeric digger.

Table 1. Specification of Tractor drawn Turmeric Digger.

Particulars	Description
Crop	Turmeric
Field operation	Turmeric digging
Implement	Turmeric Digger
Type	Three point hitch linked tractor drawn
Function	Breaking hard pan
Power required length	> 45 hp Tractor
Digging Blade	1450mm & 2000mm
Blade rake angle	55°, 50° and 45°
Weight	150 kg
Cost of the implement	Rs. 30,000/-



Fig. Turmeric digger in field operation with 45 hp tractor