

Impact of Mini Power Tiller in vegetable cultivation: A Success story of a farm women Smt. Reena Bharti

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Technologies adopted from KVK, Turki by farmer and its refinement:

Smt. Reena Bharti is wife of Shri Arvind Kumar a progressive farmer of Keshopur village of Sakra Block of Muzaffarpur district. She is a vegetable grower farmer having land holding 2 acres. The lady farmer came under a rural youth training program held on farm mechanization at KVK Turki in the year 2019. After completion of training, she showed her interest to adopt mini power tiller in her vegetable fields. She purchased mini power tiller equipped with cultivator, rotavator and ridge maker. The major farm activities like tillage, weeding and ridge making using indigenous method was labour intensive, arduous and time consuming for the farm women. The field capacity and depth of cut of 3 tyne cultivator is found as 0.045 ha/hr and 10 to 15 cm in hard to moist soil respectively. The field capacity and depth of cut of rotavator is found as 0.072 ha/hr and 25 cm respectively. The field capacity of ridger is found as 0.4 ha/hr. The fuel consumption varies from 0.8 to 0.9 ml/hr in hard to moist soil respectively. Mini power tiller can be used for primary and secondary tillage by cultivator and rotavator respectively, furrow making by ridger, harvesting by potato digger. Smt. Reena Bharti majorly grow bottle gourd, cauliflower, Bitter gourd, capsicum, potato, chilli, broccoli etc. It has been observed that farmers are having small and fragmented land holdings and they are subjected to least use of bigger farm implements available at rent basis. The major farm activities like tillage, weeding, ridge making and harvesting using indigenous method is labour intensive, arduous and time consuming. After looking this

difficulties Subject Matter Specialist of Agricultural Engineering of KVK suggested farmers to use mini power tiller for their farm works.

	
<p>Mini power tiller attached with rotavator</p>	<p>Tillage of vegetable field by rotavator equipped with Mini power tiller below the staking</p>
	
<p>7 hp Mini power tiller</p>	<p>Attachments of mini power tiller cultivator, ridger and rotavator from left to right</p>
	
<p>Rear and Front view of Mini Power Tiller</p>	

Fig.2: Mini power tiller different attachments with rear and front view

Since this implement is of light weight and having gear operating system which makes this user friendly, also minimized cost adds on less economical load on farmers. This is found in the study farmers are hiring implements on rent basis and facilitate their farm activities but due to demand of the implements at a time results in delayed cropping, which decrease the productivity. Low-cost mini power tiller is a great alternative of high cost tractor for small and marginal farmers.

Operation	Resources	Cost Rs./ha	Operational time(Days)	Time saving with respect to human (%)	Time saving with respect to bullock (%)	Cost saving with respect to human (%)	Cost saving with respect to bullock (%)
Ploughing	Human	45760	143	-	-	-	-
	Bullock	1350	3.0	97.90	-	97.05	-
	Minipower tiller	1025	2.5	98.25	16.67	97.76	24.07
Ridge making	Human	32000	100	-	-	-	-
	Bullock	4700	10	90.00		85.31	
	Mini power tiller	2050	5.0	95.00	50.00	93.59	56.38
Potato digging	Human	32000	100	-	-	-	-
	Bullock	1680	3.6	96.40	-	94.75	-
	Mini power tiller	820	2.0	98.00	44.44	97.44	51.19

The field capacity and depth of cut of 3 tyne cultivator is found as 0.045 ha/hr and 7.5 cm respectively. The field capacity and depth of cut of 3 tyne rotavator is found as 0.072 ha/hr and 25 cm respectively. The field capacity of ridger is found as 0.4 ha/hr. Fuel



consumption is 1 litre per hour. It can be also used for potato digging, harvesting by reaper, carrying farm residues if attached with trailer.

This implement is very much helpful for small and marginal farmers and works very efficiently in sandy loam or loamy soil. Less cost of this implement can enhance the productivity with reduced labour charges, time and cost of operation of any farm activities in compare to manual operation.

