

# Mr. M. Munusamy an innovative farmer for tea machine harvesting



Tea is a perennial crop. Tea is grown in more than 35 countries in the world. India, China, Srilanka and Indonesia are the major tea growing countries. A large amount of agricultural economy depends upon tea in India. More than 20 lakhs of farmers are engaged directly and indirectly in this industry. Nilgiris is a hilly district. There are about Sixty five thousand small growers involved in tea cultivation in the district occupying eighty percent of the cultivable area.

Harvesting is one of the most important cultural operations in tea done throughout the year. Proper plucking decides the quality of the tea produced and seventy percent of the workers are utilized for plucking alone. Mostly women pluckers are engaged for this purpose. Hand plucking, shear harvesting & machine harvesting are the different methods of harvesting. There are two seasons namely high cropping and lean cropping. Sixty five percent of leaf is harvested during high cropping season and thirty five percent in lean season. During rush crop to over come the labour shortage machines are used for harvesting.

**Mr.M.Munuswamy** is a progressive and innovative farmer residing at Wellington village of Coonoor taluk in the Nilgiris. He has completed his graduation (BA History) at Government Arts College, Ooty. He is 54 years old having five acres of tea garden and has 31 years of experience in tea cultivation. He has undergone one week training on “**Machine harvesting and maintenance in tea**” at UPASI-Krishi Vigyan Kendra during the year 2000.

Mr. M. Munuswamy is having five acres of land on his own. He started with hand plucking where the plucking average is 30kg/day/worker and the cost of harvesting per kg of green leaf is Rs.5/-. Due to heavy labour scarcity prevailing in the district and high cost of production, he started using two men operated plucking machine for harvesting which was more economical for him. He started taking the tea field for lease from 2003 onwards where he specifically using double men operated machine for harvesting. The details of labour output and cost are given below:

<b>Method of plucking</b>	<b>Worker out put /hr (Kg)</b>	<b>Worker output/day( Kg)</b>	<b>Cost of harvesting per kg (Rs.)</b>
Hand plucking	5	30	5
Machine plucking	35	210	2.5

\* calculated six working hours per day

The details of green leaf harvested and labour utilization are given below

<b>Year</b>	<b>Area</b>	<b>Green leaf harvested (Kg)</b>	<b>Labour utilized</b>		<b>Cost of hand plucking @ Rs 5/Kg</b>	<b>Cost of machine plucking @ Rs 2.5/Kg</b>
			<b>Hand</b>	<b>Machine</b>		
2000 - 2002	5 acres (Own)	22,500	750	112.5	112500	59062.5
2003 - 2005	5 acres (Own) + 70 acres leased	3,45,000	11500	1725	17,25,000	8,62,500
2006 - 2012	5 acres (Own) + 95 acres leased	4,30,000	14333	2150	21,50,000	10,55,000
2013 - 2015	5 acres (Own) + 110 acres leased	5,17,500	17250	2587.5	25,87,500	12,93,750

Year	Area	Green leaf harvested (Kg)	Labour utilized		Cost of hand plucking @ Rs 5/Kg	Cost of machine plucking @ Rs 2.5/Kg
			Hand	Machine		
<b>Total</b>		<b>13,15,000</b>	<b>43833</b>	<b>6575</b>	<b>65,75,000</b>	<b>32,11,250</b>

He has started using machines from 2003 and harvested 13,15,000 kgs of green leaf. Since he has started using machines instead of hand plucking he could earn Rs.33,63,750/-. Moreover he has given jobs for 23 permanent workers. They are earning Rs.12,000/- to Rs.15,000/- per month.

He has given demonstrations on mechanization in tea for Corporate officials, many Self Help Groups and progressive farmers in the district.

He has received Tea Board best award for effective utilization of machines in tea in 2012 and 2013. He also received Malarum Velanmai award in 2014 by Tamilnadu Agricultural University, Coimbatore. Moreover he has done refinement in machine blade

**Refinement of the blade in tea harvesting machine:**

The plucking average in two men operated machine is 210kg/worker/day for six hours. The cost of harvesting per kg of green leaf by using two men operated machine is Rs.2.5. Now he is able to manage to harvest the crop on proper interval and is also getting quality green leaf. The output of the machine is 1200 kg/ six hour.

The Two men operated machine knife support blade is normally made up of Aluminium and is fixed with bolt and nut more than 10 nos. Since the knife supporting blade is having more bolt and nut the movement of blade was restricted and this caused poor cutting. Inorder to increase the efficiency, he has made a refinement by changing the Aluminum blade to stainless steel support blade and reduced the number of bolt & nut from 10 to 3nos. By this refinement he is able to increase the efficiency of the machine.

The following are the details of benefit gained by the refinement of knife supporting blade;

<b>Before refinement-green tea leaf harvested per day</b>	<b>After refinement-green tea leaf harvested per day</b>	<b>Additional leaf harvested per day</b>	<b>Working hours saved per day</b>	<b>Labour savings per day</b>	<b>Fuel savings per day</b>
1200kg	2100kg	900kg	4.3hrs	4.5 workers	4.5litres

By this change he was able to harvest 350 kg per hour, as compared to 200kg per hour before refinement which enhanced output of the machine 2100kg/six hours and increased the output of the machine 900kg/day. Through this he could save 4.5 labours/day, 4.5 litres. petrol and 180 ml of oil per day. Apart from this he saved one fourth of maintenance cost per year ie., usually Rs.50,000 is spent as maintenance cost and he saved Rs.16,380 per year through longer extended life of harvesting blade.

He has disseminated this technology to 130 farmers who were using two men operated harvesting machine in the district. Other farmers are still following this refinement and managing the labour scarcity prevailing in the district.



**Mr Munusamy is supervising double men operated harvesting machine**



**Machine harvested  
tea field**



**Supporting blade made up of  
Aluminium before refinement**

**Supporting blade made up of  
Stainless Steel after refinement**





**More supporting bolt and nuts  
before refinement**



**Less supporting bolt and nuts after  
refinement**

### **Declaration by Head of the Institute/ Organisation**

I, Dr.G Ramamoorthy, Programme Coordinator i/c of UPASI Krishi Vigyan Kendra, Coonoor, The Nilgiris declare that the information provided here is true to the best of my knowledge and belief.

Place: Coonoor, the Nilgiris  
Date : March 14, 2015

Signature