



## A lifetime of creativity

**Annasaheb Bhavu Udgavi**  
Belgaum, Karnataka

An enterprising farmer and a prolific innovator, Annasaheb is a 'young man' of seventy eight years. His creativity spans over last few decades, where he came up with a number of useful ideas and implements, some out of need and some simply out of a desire to do something different.

He has a small close knit family and twenty acres of land. The family earns a reasonable income because of their hard work and innovative farming practices. Annasaheb did not go to school, as he had to assist his parents in work. The innovator in him started to surface when he was in late twenties and the urge to innovate has become stronger in last five decades. Over the years, he has had the support of his wife and grandchildren in his long journey of innovations, and this has inspired him in all his endeavors.

## The early sixties

Way back in 1960, he made his first innovation, a clock, which ran on drops of water. The second's hand of the clock moved forward when a drop of water fell on it from a dispenser, which had been timed properly. For this innovation, he received an appreciation certificate from the then Prime Minister, Mr. Jawaharlal Nehru, which can still be found adorning a wall in his house.

In 1962, he made a horizontal charkha that was foldable and could fit into a suitcase. He displayed this at Sabarmati Ashram, which improvised on his design, and increased number of *belanis* from three to eight in conventional one, in order to increase the output.

### The mid seventies

In mid 1970's, to save his betel vine orchard from acute water scarcity, he fitted PVC pipes used in electrical fittings with perforations made on them using nails. By irrigating each day for one hour, he ran the crops for seven years. This was Annasaheb's innovativeness more than thirty years ago, probably only a few then may have had an idea about drip irrigation, which he had pondered over and developed in his own way.

### The eighties

Poor prices of betel leaf made him switch to sugarcane. He believed that the best method to solve the problem of aphids and white flies was a high-pressure water spray. It was then, during 1980s, that he innovated the rotor sprinkler system that could cover a radius of 140 feet. He named it after the goddess Chandra Prabha. Thus was born the Chandra Prabha Rotor sprinkler - the Rain Gun.



The advantages of the Chandraprabha rain gun are manifold. It can irrigate one acre in about one and half hours. Since it has a pipe of three inches and a wide nozzle, even composts such as biogas slurry can be applied to the crop through it. When water is applied with force, pests like aphids and white flies can be washed down. It does not even need additional pipelines because of its ability to cover a radius as much as 140 feet. For this innovation, he was awarded in the First National Grassroots Technological Innovation and Traditional Knowledge Awards of NIF in 2001.

### The nineties and beyond

In early 1990s, Annasaheb made a foot-operated milking machine using a suction pump.

Apart from his mechanical innovations, he has also been innovating in farming by developing new varieties. He received the state award for the high yielding "Gangavathi-6081" sugarcane variety from the

University of Agricultural Sciences, Dharwad during the year 2001-02.

In 2005, he tried his hands on generating electricity from sea waves. He took his machine to seashore near Ambaghat on the Goa-Maharashtra border and successfully operated his machine by generating enough electricity through sea waves to light up four bulbs of 100 watts each. The machine worked on the principle of compression of air through the force of sea waves and thus using it to move the turbine and to generate electricity.

Annasaheb was involved with sugarcane cultivation. He encountered difficulty in getting farm workers in his area, particularly in peak season when he needed over fifteen people and twenty liters of diesel per acre for sowing and adding manure. The manual methods of operations like planting, applying manure and stubble shaving takes about 30-35 man-days/hectare/day for each operation. He found that the tractor drawn rotovators available in the market would not



give the shaving effect on the sugarcane ratoon crop and manual cutting did not give uniform height. Ideally, farmers would like to have a machine that would do multiple operations such as stubble shaving, fertilizer drilling and earthing simultaneously. This would not only save time, cost and effort, by reducing number of

passes, but also preserve health of the soil (since too much of tractor movement compacts the soil).

The solution developed by Annasaheb had the advantages of three simultaneous operations for better mulching in sugarcane cultivation. He came up with a multipurpose equipment that can be attached to a 30-40 hp tractor. This machine can simultaneously perform the farm operations like bund forming, seed sowing, manure application and harvesting in sugarcane cultivation. He filed a patent for this innovation and has been using it for many years.

## Life beyond innovations

Inspite of age, he remains active doing something or the other. While he is not working Annasaheb likes to spend time with his family especially with his grand children. He is also an outstanding sculptor and specializes in repairing old Buddhist statues.

