



# Millets in Natural Farming

## *Can Higher Yields be Achieved with Local Varieties Under Natural Farming?*

**C**rop Cutting Experiment (CCE) done in the field of **Shri. Killo Govind** recorded 20.64 quintals per ha yield in little millet at 12% moisture. This was achieved without any chemicals and using Traditional Varieties under rainfed conditions. The CCE was supervised by scientists from ANGRAU, officials from Department, Andhra Pradesh Community Managed Natural Farming (APCNF) and WASSAN team.

This yield is 3.65 times higher than that of the adjacent control plot; it is no big news! Such jumps are normally observed in most of the natural farming millet fields in this area.

The yield levels are higher than 17.45 kg per ha yield recorded in the Regional Research Station of the ANGR Agriculture University at Vizianagaram (18% higher), the nearest AICRP centre. The yields are also 39% higher than the mean yield (14.83 q/ha) in the Front-Line Demonstrations of the AICRIP- Small Millets across India. This is something to take notice of.

- **Crop:**  
Little Millet
- **Variety:**  
Pedda Sama (long duration)
- **Farmer:**  
Sri. Killo Govind
- **Location:**
  - Korrai village,
  - Dumbriguda mandal
  - Alluri Sitharama Raju district,
  - Andhra Pradesh



Resulting in 18% or 39% higher yield over that in the all India AICRP- Small Millets program apart, the fact that this was achieved **without using any chemicals** (no fertilisers and no pesticides) and using only **Traditional Varieties** under natural farming methods is something to reckon with.

What is to be noticed is that there are consistent yield achievements under Natural Farming observed in the north coastal tribal areas in finger millet and now in little millet comparable or higher than the yields reported in research stations/ FLTs – and in several cases these are even surpassing the outliers in the research station yields. The practices follow **Natural Farming inputs combined with SRI principles**. Why such yields are obtained and, if they are consistent across soil types / farm situations and other such questions need to be explored by the scientific community. Even if these are outliers, they merit systematic exploration.

The evidence on ground that we can achieve equal or higher yields and net returns with no chemical inputs is breaking the myth of ‘low yields in natural farming’ or we have to wait for 3 years to get comparable yields; something that is worth exploring in these tribal agro-geographies.

## Here, we provide the details of the practices followed by Killo Govind

**Killo Govind** followed transplantation method in *Sama* (Little Millet), with long-duration Traditional Variety known as *Pedda sama* in his 2 acres of red soil land under rainfed conditions. He used 21-day-old seedlings of *Pedda sama* for transplantation and maintained 30 cm distance between row to row and plant to plant spacing. Transplantation was done on 12th July 2023 and harvested on 28th October 2023. He applied 800 kgs of type-2 (FYM mixed with *drava jeevamrutam*) *Ghana Jeevamrutham* during the last ploughing. Ten days after transplantation 400 liters of *Drava Jeevamrutam* with a dilution of 1 0% was applied.



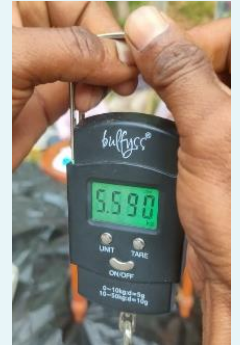
On 28th October 2023, CCE experiment was organized by WASSAN & Sanjeevini team in the presence of scientists from RARS Chintapalli, KVK Kondempudi, Mandal Agriculture Officers from Araku Valley, Dumbriguda Mandals and RySS field cadre including the District Project Manager of APCNF and 20 Millet farmers.



The above team also conducted CCE on the control Plot of Karabali village of Mr. Killo Mahadev field (control plot) on 28-10-2023. Mahadev followed the broadcast method in his half-acre land of red soil. The sowing was done on 6th June 2023 and applied 500kg of FYM, 200 litres of *Drava Jeevamrutham* while weeding was not done in this plot.

The yields recorded were as follows. \* Plot size: 5 \* 5 m<sup>2</sup>

| Plot | Crop              | Group        | Actual moisture % | 5*5 m <sup>2</sup> yield in kgs with 12% moisture | Net grain yield in Q/acre (@12% moisture) | Net grain yield in Q/ha (@12% moisture) |
|------|-------------------|--------------|-------------------|---|---|---|
| 1    | <i>Pedda Sama</i> | Experiment   | 13                | 5.16  | 8.36                                      | 20.64                                   |
| 2    | <i>Pedda Sama</i> | Control Plot | 17                | 1.41  | 2.29                                      | 5.66                                    |



The data reveals that 3 times more yield was recorded from the *Pedda Sama* through the Intensification method when compared with the broadcast method under similar conditions followed in similar conditions using the same Traditional variety and in similar soil type.

As per the report of front-line demonstration – Annual report of AICRP-SM 2022<sup>1</sup>, Vizianagaram ARS recorded **1745 kg / per ha** through the improved variety of BL-6. Killo Govind achieved **2064 kg / per ha** with traditional variety. There is a high potential for local varieties to enhance crop productivity through better agronomy practices under natural farming.

## Experts Participating in the CCE

- Smt. Ujwala  
*RARS, Chinthapalli, ANGRAU*
- Sri. Rajakumar  
*KVK Kondempudi,*
- Smt. Neelaveni  
*Mandal Agrl Officer, Dumbriguda*
- Mr. Jagannadh,  
*DOT center, ANGRAU Paderu,*
- Mr Devullu,  
*SRP from RYSS*
- Mr. Bhaskar Rao  
*DPM from RYSS*
- Mr. T. Narsinga Rao  
*PO, WASSAN*

<sup>1</sup> Ref: Frontline Demonstrations- Annual Progress Report, 2022-23, AICRP-Small Millets, IIMR).

WASSAN under its program on natural farming supported by **Azim Premji Foundation** has been following up on the *Kharif* season's natural farming plots. Following Table provides the schedule of CCE planned in the participant farmers' fields.

**Upcoming Plan on Pedda Sama (Traditional Variety of Little Millet) CCEs In November 2023**

| Date of CCE | Mandal       | Village       | Farmer Name | Contact person  | Contact Number |
|-------------|--------------|---------------|-------------|-----------------|----------------|
| 30-10-2023  | Dumbriguda   | Odiyavalasa   | K Sriramulu | T. Narasingarao | 9491787476     |
| 01-11-2023  | Dumbriguda   | Killoguda     | K Dayanidhi | T. Narasingarao | 9491787476     |
| 02-11-2023  | G. Madugula  | Solabham      | Venkatarao  | DPM Bhaskararao | 9494770629     |
| 02-11-2023  | G. Madugula  | Solabham      | Venkatarao  | DPM Bhaskararao | 9494770629     |
| 04-11-2023  | Hukumpeta    | Rangasila     | K. Dharma   | T. Narasingarao | 9491787476     |
| 04-11-2023  | Dumbriguda   | Pedda Anjoda  | P. Govind   | T. Narasingarao | 9491787476     |
| 05-11-2023  | Dimbriguda   | Chinna anjoda | Rajarao     | T. Narasingarao | 9491787476     |
| 05-11-2023  | Araku Valley | Garadaguda    | Budra       | T. Narasingarao | 9491787476     |

We invite any researchers and scientific institutions to participate in the CCEs planned and share their observations. We immensely appreciate if this could inspire the scientific community to engage with collaborative research on farmers' fields in exploring consistency of the results of natural farming across multiple farm situations; and explaining the results.

WASSAN is also taking up a program along with interested farmers to replicate the yield levels across multiple plots during the *Rabi* 2023-24 season. We invite scientific institutions to join us in this.

The exciting point for us, however, is not the yields – but moving away from mono-cropping to intensive multiple cropping systems that cover soil for a longer period, increasing net income of the farmers. While we are moving in that direction, we also want to flag the results we are seeing in natural farming having potential to achieve substantial yields without chemical inputs. ■

