

Line sowing and seed treatment with *Rhizobium* in *kharif* groundnut and *kharif* soybean cultivation

District	Bishnupur
Crop and Variety	Groundnut var. ICGS-76 and Soybean, DSb-19
Name of farmer & Address	Thoudam Tomba Singh , Salan Konjil, Bishnupur District, Manipur.
Background information about farmer field	Shri Thoudam Tomba Singh aged 42 years inhabited in Salan Konjil village in Moirang block about 25 km from the district headquarter, Bishnupur, Manipur. His field was located at 24 ⁰ 26'27.4" latitude and 93 ⁰ 47'46.0" longitude covering a total area of 1.5 ha. Because of varied reasons such as lack of irrigation facilities, uneven distribution of rainfall, late onset of monsoon, etc. he was unable to get good benefits from farming despite of his hardworking. Also he had little knowledge about the type of crop that could be successfully planted in midland and upland, thereby leaving such areas barren.
Details of technology demonstrated	<ol style="list-style-type: none"> 1. Improved cultivation practices of groundnut cultivation. Seed rate 80kg/ha, Spacing 45cm X 15 cm, Seed treatment with Carbendazim 50% and Mancozeb 50 % @ 2g/kg seed, , NPKS@20:40:20:20 kg/ha. 2. Improved cultivation practices of soybean cultivation. Seed rate 60kg/ha, Spacing 45cm X 15 cm, Seed treatment with Carbendazim 50% and Mancozeb 50 % @ 2g/kg seed, <i>Rhizobium japonicum</i> @ 50g/kg seed, NPKS@20:40:20:20 kg/ha.
Institutional Involvement	Scientists of KVK Bishnupur paid a visit to the village to have a feel of the villager's problem. At an interactive session with the villagers, Thoudam Tomba Singh didn't hesitate to put forth his problem outright. SMS(Agronomy), KVK, Bishnupur took upon the task of providing training on "Improved cultivation practices of groundnut and soybean" and made them to realize that even the upland barren could be cultivated and farmers were acquainted with latest technique like <i>Rhizobium</i> inoculation. Critical inputs such as seed, pesticide and <i>Rhizobium</i> were given to them for conducting Cluster Front Line Demonstration Programme on <i>kharif</i> oilseeds under National Mission on Oilseed and Oil Palm (NMOOP). During the crop growing period, Senior Scientist & Head as well as scientist of Agronomy, Plant Protection and Agril. Extension regularly visited his field in every critical stages of the crop growing period. Also encouraged him to go for seed production and guided him for the availability of market for sale of groundnut and soybean seeds.

Success Point	The programme has promoted efficient use of cultivated land in groundnut as well as soybean areas, optimized use of available resources i.e., water, labour and other inputs. It has not only provided additional yield of oilseed but also improved soil health due to fixation of atmospheric nitrogen by root nodules of soybean. The farmer could reap groundnut and soybean, which till yesterday was wasteland for him. Groundnut and soybean cultivation had also improved the water retention capacity of the upland areas as well as making the soil more fertile for the next crop.	
Farmer Feedback	The results have taken the farmer by surprise and farmers from neighbouring village would like to grow like him. He was satisfied with the technology because he could see the difference of his field where before it lies barren for almost three years due to non-productive of the soil.	
Outcome Yield (q/ha)	Groundnut	Soyabean
- Demonstration	10.62	8.94
- Potential yield of variety/technology	25.0	19.69
- District average (Previous year)		
- State average (Previous year)		

Performance of technology vis-à-vis Local check (Increase in productivity and returns)

Specific Technology	Yield (q/ha)	Gross cost (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Groundnut var. ICGS-76					
Farmer practices	8.4	25800	67200	41400	2.60:1
Demonstration	10.62	30800	84960	54160	2.75:1
% Increase	26.43	19.38	26.43	30.82	



1 Groundnut seedling stage



2 Groundnut vegetative stage



3 Groundnut vegetative stage



4 Groundnut fruiting stage



5 Groundnut peg formation stage



6 Harvested pod and seeds of groundnut Var ICGS-76

Soybean var. DSb-19

Farmer practices	5.46	22500	32760	10260	1.46:1
Demonstration	8.94	27500	53640	26140	1.95:1
% Increase	63.74	22.22	63.74		



1 soybean line sowing



2 soybean vegetative sstage



3 Soybean fruiting stage



4 Harvested pod



5 Seeds of DSb-19