



# Tagar Mahagawa - A WEED FREE VILLAGE

*Adopted by DWSR for  
Transfer of Weed Management Technologies*



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## Preface

Weeds are more problematic to crop production than insects and diseases, as the crop may or may not be attacked by the latter agents but it is invariably infested by former one which causes invisible damage till the crop is harvested. It is a widespread biological constraint and is responsible for reduction not in crop yield as well as quality of produce but robbing of soil moisture and nutrients too. Removal of weeds manually is a time consuming, tedious process which involves huge expenditure. Improved weed management techniques must cut down production cost. The Directorate of Weed Science Research (DWSR) has developed crop- and situation-specific weed management technologies involving chemical, non-chemical and biological approaches. The real benefit and significance of these technologies could be observed once the farmers adopt these technologies. Hence, an attempt was made to transfer these technologies on pilot basis, with the motto of *weed free village*, by adopting an agriculturally backward village named Tagar Mahagawa (Jabalpur). The attempt was a huge success within a mere three years time span and it helped the village people to improve their crop production, to secure livelihood and to become economically prosperous.

This success story is being compiled with the expectation that it will encourage the farmers of other regions to become aware about the benefit of improved weed management technologies. It will also help to sensitize the local administration and policy makers to formulate more suitable plan for the all round development of village people.

The appreciable contribution made by the scientific and other technical staffs of DWSR towards technology development and technology transfer process is highly acknowledged. We also thank the other agencies like state agriculture/horticulture departments, Mahyco Seed Company and IFFCO, etc. for their positive help in our endeavors.

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## Weed free village - Adopted by DWSR for Transfer of Weed Management Technologies

The agricultural technology transfer is a process wherein the proven agricultural technologies are demonstrated with an aim to increase crop productivity and thereby enhancing farmer's income level. One of the major pests of crop field is weed which at one hand enhances the cost of production and on the other reduces the productivity. Weed also hinder the carrying of operations in the fields besides affecting the quality of produce adversely. Weeds also harbour insect pests and diseases. Hence, an attempt was made by the Directorate of Weed Science Research, Jabalpur (MP), to show the farmers, how the effective weed management could bring visible significant change in the economic situation of the farmers of an agriculturally backward village by transferring the weed management technologies, keeping in view the local needs in terms of practicability and commercial viability. The present success story outlines how transfer of weed management technologies helped village people to improve their crop production, secure livelihood and become economically prosperous.

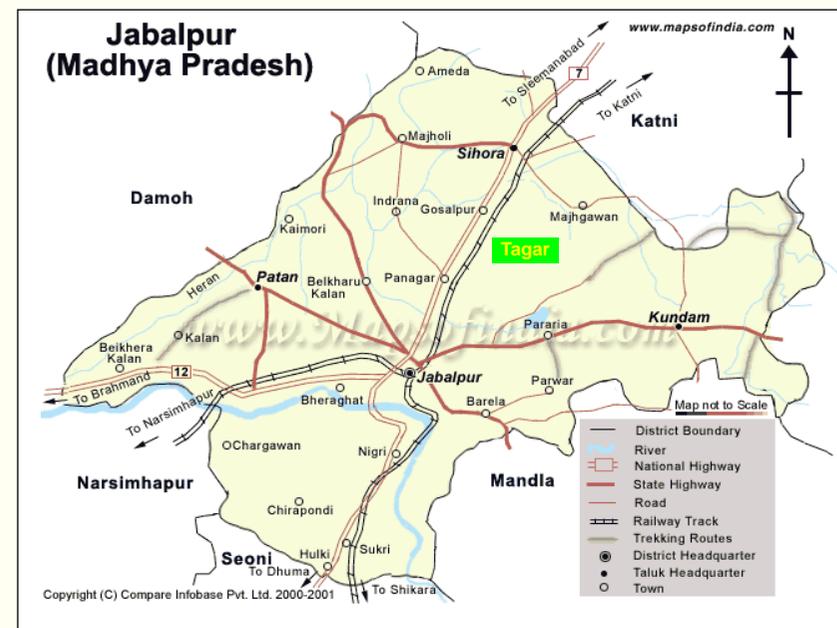


Adopted village Tagar

### Adopted village Tagar

The Directorate had adopted a village named Tagar-mahagawa under the Block Panagar of district Jabalpur in Madhya Pradesh with an objective to make the farmers aware about importance of weed management for increasing the crop yield and income level. Prior to adoption, this

agriculturally backward village was totally untouched by modern weed management technological interventions. Rice-wheat system was the major cropping pattern of the village, and none of the farmers practiced commercial cultivation of vegetables and other cash crops due to severe weed problem. In general the farmers practiced manual weeding up to the extent possible through their family members during kharif season and normally no weeding operation was practiced by them during rabi season.



Location of Tagar Mahagawa Village, Jabalpur (MP)

Detailed survey was made by the DWSR team through personal interaction with the villagers to assess various aspects like population, size of holding, socio-economic status, prevailing agricultural and horticultural practices, knowledge level about weed management and other agricultural technologies, animal husbandry, etc.



Discussion with villagers during preliminary survey at Tagar



Preliminary survey of field sites

On the basis of survey data, the real situation was analysed and accordingly strategies to transfer the improved weed management technologies were formulated. At the outset, the action plan was initiated by conducting few preliminary demonstrations for showing performance, practicability and profitability of improved weed management technologies to the villagers. The villagers especially the youth showed high enthusiasm and responded very positively after seeing the performance of the given technological interventions. Consequently, DWSR initiated massive awareness programme, group discussion, farm & home visits, technical campaign and need based trainings on regular basis, and further intensified field demonstrations, with an objective to bring the whole village under weed free village concept in the year 2008.



Monitoring of demonstration sites

The efforts made by the Directorate and the cooperation extended by the villagers to the weed free village campaign are giving highly encouraging outcome (Table 1). The level of weed management in crops increased above 80 % in Tagar village in the year 2010 from its earlier level of 4-5 % prior to its adoption. The area under soybean and vegetable crops was also increased from 0.6 % to 8 % and 1 % to 7 %, respectively.

Table 1: Acreage under different crops before and after adoption of village (Total cultivated land 200 hectare)

Particulars	Status		
	2008	2009	2010
Crop coverage (hectare)			
Paddy	88	136	164
Soybean	1.2	4.8	16
Wheat	24	96	148
Chick-pea	4	12	20
Vegetable	2	4	14
Other crop	0.6	4	10
Increase in use of improved weed management Technology (%)	5	30	85
Use of improved seeds (%)	2	40	95

Table 2: Crop Productivity scenario before and after adoption of village

Particulars	Improved Weed Management Technologies	Average productivity status (q/ha)			
		BAV	AAV		
		FP	2008	2009	2010
Rice	Chlorimuron + Metsulfuron methyl fb Fenoxaprop - p-ethyl @ 4 + 60 g ai/ha (PO) Pretilachlor @ 750 g ai /ha (PE) Bisbyribac sodium @ 25 g ai /ha (PO)	30	33	37	42
Soybean	Chlorimuron + Fenoxaprop @ 10 + 75 g ai /ha (PO) Imazethapyr @ 100 g ai /ha (PO)	9	10.5	12	14
Maize	Atrazine @ 1000 g ai /ha (PE)	29	32	36	40
Wheat	Clodinafop + Metsulfuron methyl @ 60 + 4 g ai /ha (PO) Isoproturon + 2, 4-D @ 500 + 500 g ai /ha (PO) Sulfosulfuron + Metsulfuron methyl 25 + 4 g ai /ha (PO)	18	20	23	27
Chick-pea	Pendimethalin @ 1000 g ai / ha (PE)	10	11.5	13	14
Average Increased in yields (%)		-	10-12	23-25	38-40

\* BAV Before adoption of village, AAV-After adoption of village, FP-Farmer's practice

## Changes after adoption of the village

### (A) Increased area under cultivation

The farmers of the Tagar village have started adopting weed management technology in paddy, wheat, soybean, chick-pea and vegetable crops and getting on an average 10-38% higher yield and an additional average profit of Rs.20000-25000 per hectare since 2008. The kharif cropping area increased from 89.2 hectare (45%) in 2008 to 180 hectare (90%) in 2010, and similarly the area under rabi season crops increased drastically from 30.6 hectare (16%) as recorded in 2008 to 192 hectare (96%) in 2010. This has happened due to confidence building in them that they can manage weeds effectively. Earlier, through traditional weeding practices, the cultivation of rice, wheat and other crops was difficult.



Rice crop without weed management      Rice crop with weed management

Prior to adoption, majority of the farmers of Tagar village almost gave up cultivating wheat due to heavy infestation of Phalaris minor, wild oat and other broad leaf weeds. Demonstration of zero tillage technology in combination with chemical weed management techniques encouraged the farmers to use zero till seed drill machine and herbicides like, clodinafop, sulfosulfuron, 2,4-D & isoproturon in wheat. Inspired by the performance of the above technologies, virtually the entire farming community of this village shifted to large scale cultivation of wheat and currently harvesting an average yield of 26 q/ha.



Wheat and chickpea crop after adoption of village

### (B) Vegetable cultivation

The success achieved in the cultivation of cereals has also changed the view of farmers about the overall agricultural practices. Earlier they grew some vegetables in their kitchen garden for household consumption only. DWSR demonstrated Soil Solarization technique for weed free seed bed preparation and also introduced the farmers of this adopted village to many

other agricultural agencies like state agriculture/horticulture department, Mahyco Seed company, IFFCO, etc. Consequently, along with the improved weed management techniques, many farmers have also adopted other modern agricultural technologies and started growing vegetables in commercial scale from last 03 years.

Presently by spending a sum of Rs. 10,000 to 12,000 for cultivation of brinjal, cauliflower, cabbage, tomato and chilli, the farmers are earning a profit of approximately Rs. 38,000 to 44,000 per hectare. Cultivation of Brinjal alone gave a return of almost Rs. 35,000 to 40,000 per hectare to a successful farmer for an investment of only Rs. 8000/-. All these successes have created an environment of diversification in agriculture in this village.



### (C) Social change in the village

Prior to the adoption of Tagar village by DWSR, the villagers mainly the youth were migrating to town areas due to unprofitable farming and consequent unemployment in this village. The outcome of the technological support provided by the directorate gave a confidence and new ardor to them and they are now seriously occupied in agriculture.

## EPILOGUE

Weed causes on an average of 37% damage to the crop productivity. The extent of loss may even go up to total crop failure. The success made in Tagar-mahagawa clearly indicates that the weed menace, which compelled the farmers to leave the fields un-cropped, could well be managed through adoption of improved weed management technologies. Systematic implementation of strategies to transfer improved weed management and other technologies has infused enthusiasm in farmers towards farming and discouraged the youngsters for migrating to towns. Besides more than two and six folds increase in kharif and rabi cropping areas, respectively, a significant increase in the productivity by 10-38 % in rice, soybean, maize, wheat and chick-pea crops was also achieved in Tagar village within a short span of 3 years of its adoption by DWSR.