Success stories of DWSR technologies at farmers' fields

भाकृअनुप
ICAR

Directorate of Weed Science Research

(Indian Council of Agricultural Research)

Maharajpur, Adhartal, Jabalpur - 482004 (MP), INDIA

DWSR

Content

Management of grassy & broad leaved weeds in wheat

SUCCESS STORY - 1

Sh. Rajendra Patel

SL	PARTICULARS	DETAILS	
1	**NAME OF THE FARMER**	**SH. RAJENDRA PATEL**	
2	**ADDRESS**		
	i	**VILLAGE**	Imlai
	ii	**POST**	Imlai
	iii	**TEHSIL**	Panagar
	iv	**DISTRICT**	Jabalpur
	v	**STATE**	Madhya Pradesh
3	**CONTACT DETAILS**	09302480675	
4	**DETAILS OF FARM (SIZE, LOCATION, WATER AVAILABILITY ETC.)**	10 Acres with irrigation facilities including tube well	
5	**MEMBERSHIP IN SELF-HELP GROUP**	Member of Sehkari Samiti Maryadit Sakha, Kushner	
6	**NAMES OF THE CENTRAL SECTOR/ STATE SCHEMES UTILIZED BY THE FARMER AND THE PERIOD**	Weed control technologies transferred by Directorate of Weed Science Research (DWSR), ICAR, Jabalpur, being adopted since last five years	
7	**TECHNOLOGIES/GOOD AGRICULTURAL PRACTICES/ FACILITIES/BENEFITS**	**Management of wild oat (*Avena ludoviciana*), *Phalaris minor* and other grassy and broadleaved weeds in wheat**	
	OBTAINED WITH DETAILS	using clodinafop (60 g/ha) at 25-30 DAS followed by 2,4-D (750 g/ha) at 30 DAS. This technology has increased total production, improved quality of produce, decreased the requirement of pesticides and increased net income.	

SL	PARTICULARS	DETAILS	
8	**DETAILS OF RESULTS OBTAINED DUE TO THE ADOPTION OF TECHNOLOGIES (SEASON-WISE CROPS GROWN, TECHNIQUES ADOPTED, RESULTS ACHIEVED ETC.)**	**Improved/ Present production technologies**	**Traditional/past production practices**
(I)	**PRODUCTIVITY PER HECTARE**	38-40 q/ ha	25-30 q/ ha
(II)	**COST OF PRODUCTION PER HECTARE**	Rs. 9000-10000/-	Rs. 9000-9500/-
(III)	**TOATL GROSS INCOME PER HECTARE**	Rs. 40000 per hectare (40 q X Rs. 1000/ q)	Rs. 28500/- per hectare (30 q X Rs. 950/ q less price as there was impurities like weed seeds)
(III)	**NET INCOME PER HECTARE**	Rs. 30000/- per hectare	Rs. 19000/- per hectare
(IV)	**PRICE REALIZED (RS. PER TON)**	Profit - Rs. 7500/ ton Cost Rs. 2500/ ton	Profit - Rs. 6330/ ton Cost Rs. 3160/ ton
(V)	**NATURAL RESOURCES SAVED/ CONSERVED LIKE SOIL, WATER ETC.**	High utilization of water by crop	Loss of water due to weeds
(V)	**PRODUCT QUALITY IMPROVEMENT**	Due to improved weed management technology, the attack of other pests was significantly minimized and the quality of the produce was better as the grain size was bold and it was free from weed seeds.	The quality of the farm produce was much contaminated with objectionable weed seeds along with irregular grain size.
(V)	**PRODUCT QUALITY IMPROVEMENT**	Due to improved weed management technology, the attack of other pests was significantly minimized and the quality of the produce was better as the grain size was bold and it was free from weed seeds.	The quality of the farm produce was much contaminated with objectionable weed seeds along with irregular grain size.
9	**MARKETING STRATEGY ACCESS TO MARKET (THROUGH PRIVATE, COOPERATIVE, CONTRACT FARMING ETC.)** **EXPORT MARKET (DETAILS OF EXPORTS MADE)**	Farm produce, obtained is marketed through Sehkari Samiti Maryadit Sakha operating at the block level	

SL	PARTICULARS	DETAILS
10	**FACTORS CONTRIBUTING TO SUCCESS**	• Major weeds of wheat such as wild oat (Avena ludoviciana), Phalaris minor and other grassy and broadleaved weeds have been reported to cause 30 to 50 per cent yield loss due to competition with wheat crop for light, moisture, space, nutrients etc, as a result the growth of the wheat was suppressed and the productivity was significantly reduced. The quality of the produce was also deteriorated. Due to adoption of improved weed management technologies advised/ demonstrated by the Directorate of Weed Science Research, ICAR, Jabalpur, the weeds were effectively reduced, resulting in significant increase in yield with good quality by 10 q/ha(approx.) over the traditional practice of cultivation adopted by farmer. • The wild oat and Phalaris minor which are usually not controlled by the continuous use of isoproturon and other traditional practices, were significantly controlled with the use of clodinafop 60 g a.i./ha. The produce obtained through traditional cultivation method was full of Avena, Phalaris and Lathyrus etc weed seeds, Because of these unwanted seeds this produce fetched lower price in the market. However, the produce obtained from clodinafop (60 g/ha) followed by 2,4-D (750 g/ha) treated field were free from these seeds and got relatively higher selling price.
11	**ANY OTHER RELEVANT INFORMATION**	The farmers around my field also took lot of interest in adopting the technology using the recommended herbicides for enhancing the productivity and quality.

Untreated field

Treated with clodinafop fb. 2,4-D

Management of grassy weeds in direct seeded rice

SUCCESS STORY - 2

Sh. Manoj Patel

SL	PARTICULARS	DETAILS
1	**NAME OF THE FARMER**	**SH. MANOJ PATEL**
2	**ADDRESS**	
	i **VILLAGE**	Tagar
	ii **POST**	Umaria Patra
	iii **TEHSIL**	Jabalpur
	iv **DISTRICT**	Jabalpur
	v **STATE**	Madhya Pradesh
4	**DETAILS OF FARM (SIZE, LOCATION, WATER AVAILABILITY ETC.)**	9 acres with irrigation facilities (tube well)
5	**MEMBERSHIP IN SELF-HELP GROUP, PRODUCERS, COOPERATIVE SOCIETY / COMPANY ETC.**	Kisan Credit Card, Allahabad Bank, Kushner, Panagar Jabalpur and Member of Cooperative Society, Panagar
6	**NAMES OF THE CENTRAL SECTOR/STATE SCHEMES UTILIZED BY THE FARMER AND THE PERIOD**	Weed control technologies transferred by Directorate of Weed Science Research (DWSR), ICAR, Jabalpur, being adopted since last five years
7	**TECHNOLOGIES / GOOD AGRICULTURAL PRACTICES/ FACILITIES/BENEFITS OBTAINED WITH DETAILS**	Management of Sawa (Echinochloa colona) and other grassy weeds in direct seeded rice using fenoxaprop (60 g/ha)

SL	PARTICULARS	DETAILS	
8	**DETAILS OF RESULTS OBTAINED DUE TO THE ADOPTION OF TECHNOLOGIES (SEASON-WISE CROPS GROWN, TECHNIQUES ADOPTED, RESULTS ACHIEVED ETC.)**	**Improved/ Present production technologies**	**Traditional/past production practices**
(I)	**PRODUCTIVITY PER HECTARE**	40 q/ha	30 q/ha
(II)	**COST OF PRODUCTION PER HECTARE**	Rs 9000/ ha	Rs 12000/ ha inclusive of hand weeding charges
(III)	**TOATL GROSS INCOME PER HECTARE**	Rs. 36000 per hectare (40 q X Rs. 900/ q)	Rs. 25500/ ha (30 q X Rs. 850/ q less price as there was impurities like weed seeds)
(III)	**NET INCOME PER HECTARE**	Rs. 27000	Rs. 13500
(IV)	**PRICE REALIZED (RS. PER TON)**	Profit - Rs. 6750/ ton Cost Rs. 2250/ ton	Profit - Rs. 4500/ ton Cost Rs. 4000/ ton
(V)	**NATURAL RESOURCES SAVED/CONSERVED LIKE SOIL, WATER ETC.**	-	-
(V)	**PRODUCT QUALITY IMPROVEMENT**	Due to improved weed management technology, the attack of other pests was significantly minimized and the quality of the produce was recorded with even and bold grain seed yield	The quality of the farm produce was much contaminated with objectionable weed seeds along with irregular grain size
9	**MARKETING STRATEGY ACCESS TO MARKET (THROUGH PRIVATE, COOPERATIVE, CONTRACT FARMING ETC.) EXPORT MARKET (DETAILS OF EXPORTS MADE)**	Farm produce, obtained is marketed through Sehkari Samiti Maryadit Sakha operating at the block level	
10	**FACTORS CONTRIBUTING TO SUCCESS**	Grassy weeds including as Echinochloa colona have been reported to cause 50-60 per cent yield loss in direct seeded rice due to competition like light, moisture, space, nutrients etc. As a result of which the growth of the crop is much suppressed and consequently the crop face huge loss in	

SL	PARTICULARS	DETAILS
		productivity. The quality of the produce was also found deteriorated. Due to adoption of improved weed management technologies advised/ demonstrated by the Directorate of Weed Science Research, ICAR, Jabalpur, the weeds were significantly controlled and the yield obtained was of good quality and increased the yield by 10 q/ha. The sawa (Echinochloa colona) was usually not controlled by the traditional practices but was significantly controlled by the use of Fenoxaprop (60 g a.i. /ha) as post emergence (25-30 days after sowing) using 500 litres of water and knapsack sprayer. The traditional methods also involve labour and time consumption.
11	**ANY OTHER RELEVANT INFORMATION**	The farmers of nearby villages visiting the fields were also acquainted with the latest development of improved weed management technology and took lot of interest in adopting the same using the recommended herbicides to reduce the cost of cultivation and increase total production and net profit. The technology also helped to overcome the labour problem/ crisis during weeding season.

Untreated field

Fenoxaprop treated field

Management of grassy weeds in wheat using zero tillage technology

Sh. Ashok Mishra

SUCCESS STORY - 3

Sh. Rajkumar Mishra

SL	PARTICULARS	DETAILS
1	**NAME OF THE FARMER**	**SH. ASHOK MISHRA AND SH. RAJKUMAR MISHRA**
2	**ADDRESS**	
	i **VILLAGE**	Khamaria
	ii **POST**	Ramkhiria
	iii **TEHSIL**	Sihora
	iv **DISTRICT**	Jabalpur
	v **STATE**	Madhya Pradesh
3	**CONTACT DETAILS**	09752550148/ 09826162426
4	**DETAILS OF FARM (SIZE, LOCATION, WATER AVAILABILITY ETC.)**	16 acres with irrigation facilities (tube well) and Canal
5	**MEMBERSHIP IN SELF-HELP GROUP, PRODUCERS, COOPERATIVE SOCIETY / COMPANY ETC.**	Cooperative Society Ghat Simariya and SBI Kisan Credit card, Sihora
6	**NAMES OF THE CENTRAL SECTOR/STATE SCHEMES UTILIZED BY THE FARMER AND THE PERIOD**	Technology generated by Directorate of Weed Science Research, ICAR, Jabalpur being adopted since last five
7	**TECHNOLOGIES / GOOD AGRICULTURAL PRACTICES/ FACILITIES/BENEFITS OBTAINED WITH DETAILS**	Management of *Phalaris minor* and other grassy weeds in wheat using zero tillage technology with recommended herbicide (metsulfuron 4 g/ha) as tilling land is a laborious and time-consuming operation. It has been estimated that on an average about 30% of the total expenditure of crop production is incurred on tillage operation

SL	PARTICULARS	DETAILS	
8	**DETAILS OF RESULTS OBTAINED DUE TO THE ADOPTION OF TECHNOLOGIES (SEASON-WISE CROPS GROWN, TECHNIQUES**	**Improved/ Present production technologies**	**Traditional/past production practices**
(I)	**PRODUCTIVITY PER HECTARE**	32 q/ha	23 q/ha
(II)	**COST OF PRODUCTION PER**	Rs 9000/ ha	Rs. 11000 (Inclusive of conventional tillage practice)
(III)	**TOATL GROSS INCOME PER**	Rs. 32000 per hectare (32 q X Rs. 1000/ q)	Rs. 21850 (23 q X Rs. 950/ q less price as there was impurities like weed seeds)
(III)	**NET INCOME PER HECTARE**	Rs. 23000	Rs. 10850
(IV)	**PRICE REALIZED (RS. PER TON)**	Profit - Rs. 7600/ ton Cost Rs. 2250/ ton	Profit-Rs.4717/ton Cost-Rs.4782/ ton
(V)	**NATURAL RESOURCES SAVED/CONSERVED LIKE SOIL, WATER ETC.**	• Saved one irrigation that is given at the time of land preparation in traditional method. • Saved fuel (diesel), time and ploughing as it did not require land preparation.	Did save any natural
(V)	**PRODUCT QUALITY IMPROVEMENT**	The produce was free from weed seeds and grain was bold.	The quality of the farm produce was much contaminated with objectionable weed seeds along with irregular grain size
9	**MARKETING STRATEGY ACCESS TO MARKET (THROUGH PRIVATE, COOPERATIVE, CONTRACT FARMING ETC.)** **EXPORT MARKET (DETAILS OF EXPORTS MADE)**	Farm produce, obtained is marketed through Sehkari Samiti Maryadit Sakha operating at the block level	

SL	PARTICULARS	DETAILS
10	FACTORS CONTRIBUTING TO	• Zero tillage technology with recommended herbicides resulted in conserving the soil moisture, saving fuel, no costs for land preparation, significant weed control, time saving and timely sowing of wheat. Risk of pests was significantly reduced. As a result of obtained higher yields and profit.
11	ANY OTHER RELEVANT	• The farmers of nearby villages visited the zero tillage fields and were surprised to see the fantastic performance of zero tillage with recommended herbicides and are showing their inclination to adopt the technology. • With the escalation in diesel price, the cost of production for wheat has increased. In M.P. nearly 1.06 m ha area in wheat is under rice-wheat cropping system, which requires approximately 89.38 million litres of diesel for land preparation. If only 10 % area is put under ZT planting, there can be a saving of Rs. 154.25 millions per year. Besides, this new technology is eco-friendly by reducing 195 kg C02/ha (assuming 2.6 kg C02 production/litre of diesel burnt), which is one of the major causes of global warming.

Zero-till seed-cum-fertilizer drill

Zero-till drilled wheat

Soil solarization : A non-chemical approach of weed management in vegetables and high value crops

SUCCESS STORY - 4

Dr. Satyendra Yadav

SL	PARTICULARS	DETAILS
1	**NAME OF THE FARMER**	**DR. SATYENDRA YADAV**
2	**ADDRESS**	
	i **VILLAGE**	Amkhera
	ii **POST**	Amkhera
	iii **TEHSIL**	Jabalpur
	iv **DISTRICT**	Jabalpur
	v **STATE**	Madhya Pradesh
3	**CONTACT DETAILS**	09425156062 / 09301491922
4	**DETAILS OF FARM (SIZE, LOCATION, WATER AVAILABILITY ETC.)**	110 acres with irrigation facilities (tube well)
5	**MEMBERSHIP IN SELF-HELP GROUP, PRODUCERS, COOPERATIVE SOCIETY / COMPANY ETC.**	Krishi Sahkari Sakh Samiti,Suhagi, Kisan Credit card,central bank,jabalpur. Krishna Krishi Utpad group(SHG), Jabalpur
6	**NAMES OF THE CENTRAL SECTOR/STATE SCHEMES UTILIZED BY THE FARMER AND THE PERIOD**	Technology generated by Directorate of Weed Science Research, ICAR, Jabalpur being adopted since last five years
7	**TECHNOLOGIES / GOOD AGRICULTURAL PRACTICES/ FACILITIES/BENEFITS OBTAINED WITH DETAILS**	Soil solarization in vegetables nursery and high value crops (The field is irrigated and brought to fine tilth. The transparent polyethylene (TPE) is laid close to the soil surface and sides are tucked in soil to prevent any heat loss. This is best practiced in summer months (April-June) when solar radiation is high, the sky is clear and the land is vacant. Duration of 3-6 weeks is sufficient.

SL	PARTICULARS	DETAILS	
8	**DETAILS OF RESULTS OBTAINED DUE TO THE ADOPTION OF TECHNOLOGIES (SEASON-WISE CROPS GROWN, TECHNIQUES ADOPTED, RESULTS ACHIEVED ETC.)**	**Improved/ Present production technologies**	**Traditional/past production practices**
(I)	**Benefits**	Gives excellent control of many weeds in kharif and rabi seasons. Control many soil borne pathogens responsible for causing root rot, wilt etc. Has proved effective against parasitic weeds. Obtained healthy seedlings. Ecologically safe and environmentally friendly method.	Due to attack of pests, mortality of vegetable seedlings to the tune of more than 50 per cent was observed due to which huge failure of plantation was recorded and what so ever plants remained for plantation were found very weak for further development.
(V)	**NATURAL RESOURCES SAVED/CONSERVED LIKE SOIL, WATER ETC.**	Saves energy as the requirement of secondary tillage operation is eliminated. Conserved soil moisture.	Did not save natural resources.
(V)	**PRODUCT QUALITY IMPROVEMENT**	Found improved quality and healthy nursery with adequate plant population for plantation.	Population reduces by 50 per cent with weak plants
9	**MARKETING STRATEGY ACCESS TO MARKET (THROUGH PRIVATE, COOPERATIVE, CONTRACT FARMING ETC.)** **EXPORT MARKET (DETAILS OF EXPORTS MADE)**	Produce, obtained is marketed through local means	

SL	PARTICULARS	DETAILS
10	FACTORS CONTRIBUTING TO SUCCESS	• Soil solarization involves covering the soil with transparent polyethylene (TPE) films which would trap the heat inside, resulting in raising of soil temperature to the lethal level to many soil pathogens, nematodes and weed species. • Soils mulched with transparent plastic films also contained higher levels of soluble mineral nutrients. Nitrate-nitrogen also significant increased. • Extending the solarization period usually to four weeks or longer enables control of weeds at deeper layers.
11	ANY OTHER RELEVANT INFORMATION	• It is possible to reduce the cost by re-using the plastic in the same or different years and by resorting the thinner films. Savings on land preparation and pest control (cost on herbicides insecticides and fungicides) in each season/ year and increased crop yield are to be taken into account. • Many rainy and winter season annuals as well as parasitic weeds like broomrape (Orobanche spp.) are effectively controlled by soil solarization. • Using this technology, yield increases of about 100-125 per cent in onion, 50-55 per cent in ground nut, 70-75 per cent in sesamum and 77-78 per cent in soybean have been observed by solarization.

Solarization by TPE sheets

Solarized nursery

Non-Solarized nursery

Management of Parthenium hysterophorus using Mexican beetle

Dr. Sunil Kaurav

SUCCESS STORY - 5

SL	PARTICULARS	DETAILS
1	**NAME OF THE FARMER**	**SHRI SUNIL KAURAV**
2	**ADDRESS**	S/o Shri Bhaiya Ji Kaurav
	i **VILLAGE**	Khairi
	ii **POST**	Chinchli
	iii **TEHSIL**	Gadarwara
	iv **DISTRICT**	Narsinghpur
	v **STATE**	MP
3	**CONTACT DETAILS**	09827780322 / 957790-226655
4	**DETAILS OF FARM (SIZE, LOCATION, WATER AVAILABILITY ETC.)**	20 Acre area on road side and near the crop fields
5	**MEMBERSHIP IN SELF-HELP GROUP, PRODUCERS, COOPERATIVE SOCIETY/ COMPANY ETC.**	Member of different societies operating in the tehsil
6	**NAMES OF THE CENTRAL SECTOR/STATE SCHEMES UTILIZED BY THE FARMER AND THE PERIOD**	Technology generated by Directorate of Weed Science Research, ICAR, Jabalpur being adopted since last five years
7	**TECHNOLOGIES / GOOD AGRICULTURAL PRACTICES/ FACILITIES/BENEFITS OBTAINED WITH DETAILS**	Management of *Parthenium hysterophorus* locally called Gajar Ghas in non-crop area was done successfully by releasing of host specific Parthenium eating Beetle *Zygogramma bicolorata* obtained from DWSR, Jabalpur free of cost.

SL	PARTICULARS	DETAILS	
8	**DETAILS OF RESULTS OBTAINED DUE TO THE ADOPTION OF TECHNOLOGIES (SEASON-WISE CROPS GROWN, TECHNIQUES ADOPTED, RESULTS ACHIEVED ETC.)**	**Improved/ Present production technologies**	**Traditional/past production practices**
(I)	-	After releasing of Mexican beetle in the Parthenium infested area, it started feeding on Parthenium which caused reduction in Parthenium vigour. Beetle also laid eggs from which soon tiny larvae emerged and eat Parthenium growing point thus checked the Parthenium growth. After about two month, the whole Parthenium infested area was found attacked by the beetle. Continuous attack of adult and larvae of the bioagent caused complete defoliation of the Parthenium in the area. Next year, larvae and adults of the bioagents were found attacking Parthenium which was germinated after monsoon rains. The attack of the beetle was so severe that Parthenium was defoliated in large area. The beetles from Parthenium of non-cropped area entered in the adjoining field of Jowar and defoliated Parthenium amidst the crop. Due to this technology, the	• Traditional practice was to uproot Parthenium which was costly and laboursome. Uprooting was not possible always due to harmful effects of Parthenium causing skin allergy besides asthmatic and many other problems. The seeds of Parthenium entered in the cropped field from the Parthenium infested non-cropped area and reduced the crop productivity. • Use of herbicide like metribuzine and glyphosate are very costly affair particularly in non cropped situation.	

SL	PARTICULARS	DETAILS	
		density and growth of Parthenium was significantly reduced by the action of bioagents in large area not only in non-cropped area but also in cropped fields on sustainable basis where. While in the area where the bioagents were not released, density and growth of Parthenium was high and Parthenium infestation was not checked. The infestation of Parthenium was also high in crops fields.	
(II)	**NATURAL RESOURCES SAVED/CONSERVED LIKE SOIL, WATER ETC.**	Saved biodiversity in the farm of environmental safety and sustainability	Loss of biodiversity which creates many problems like health hazards etc.
(III)	**PRODUCT QUALITY IMPROVEMENT**	Maintained the biodiversity.	Deteriorated growth of the plants suppressed by the Parthenium
9	**FACTORS CONTRIBUTING TO SUCCESS**	Parthenium was a great problem in the area but after releasing the Mexican beetles by DWSR, Jabalpur the Parthenium problem was reduced drastically not only in the released area but also in the adjoining area. Farmers were also facing health problems particularly of skin allergy. The labours were not ready to uproot Parthenium due to skin allergy problems. Soon after releasing of beetles, other farmers of the area also realized the effect of the technology given by DWSR. Many farmers collected the beetles from the infested area and released the same in and around their fields. This caused rapid spread of the bioagent in large area and subsequently the reduction in the density of Parthenium and reduction in health problems of farmers.	

SL	PARTICULARS	DETAILS
11	ANY OTHER RELEVANT INFORMATION	• Some relatives and farmers from other villages also saw the results of biological agents on Parthenium in Chinchli village. They took interest and collected the bioagents from the same village and releases were made in adjoining areas. Subsequently, they informed the establishment of the bioagent in their area and killing of Parthenium in large area. This is a free technology. At the time of population build-up of beetle, particularly during rainy season, farmers and interested persons may collect the beetles and may release on the Parthenium infested area. • In Sonpur village of Jabalpur also, a release of about 500 beetles against Parthenium was made during 2000-2001 met tremendous success. • Replacement plants like Cassia spp and others are going to be the other viable method of control.

Zygogramma bicolorata

Parthenium field before the attack of beetle

Same field after beetle's attack

Biological control of Water hyacinth

SUCCESS STORY - 6

SL	PARTICULARS	DETAILS
1	**EXTENT OF PROBLEM**	• Water hyacinth (Eichhornia crassipes (Mart Solmns) is a free floating, annual or perennial aquatic plant. It is native to Brazil and has been introduced in India as an ornamental plant in West Bengal in early twentieth century but now, it is one of the worst weeds of aquatic bodies in India. It is estimated to cover over 0.4 million ha of water surface. It propagates by vegetative and sexual methods. The plant is also reproduces by seeds. A single water hyacinth plant can produce a few to 5000 thousands seeds. The seeds may sink to the bottom mud where they can remain viable upto 20 years. • The losses caused by this weed are several times more than its beneficial role in purifying water. It may evaporate 3-8 per cent water. It is estimated that the 20-40 per cent of the total utilizable water in India is currently infested by this weed in the country, affecting directly irrigation, hydroelectric generation, navigation besides drastic reduction in fish production, aquatic crops (lotus, chestnut) and increase in diseases caused by mosquitoes.
2	**ADDRESS OF DEMONSTRATIONS**	
	i **VILLAGE**	Ponds of Mahanadda, Ranital, Guloua tal, Man Singh Tal
	ii **POST**	Jabalpur
	iii **TEHSIL**	Jabalpur
	iv **DISTRICT**	Jabalpur
	v **STATE**	MP

SL	PARTICULARS	DETAILS
3	**CONTACT DETAILS**	DWSR, Jabalpur
4	**DETAILS OF PONDS (SIZE, LOCATION, WATER AVAILABILITY ETC.)**	Five large ponds of about 3-5 acres (Approx)
5	**TECHNOLOGIES / GOOD AGRICULTURAL PRACTICES/ FACILITIES/BENEFITS OBTAINED WITH DETAILS**	Biological control is the most economical and practical way to keep the weed under check and it is environmentally safe and poses no threat to non-target organisms environment and biodiversity. Use of exotic weevils Neochetina spp, is a potential bio-agent for controlling this weed in aquatic bodies. Initially 500-1000 adults can be released in a water body infested with water hyacinth to establish and population build up of insects. Biological control of water hyacinth occurs in cycles. First cycle of control of water hyacinth may be achieved within 12 to 18 months after introduction of the bioagents. After first wave of control, subsequently regrowth or fresh growth may be controlled by the bioagents in less time. Adult feeds on leaf tissues while grubs make tunnels in petioles thus gradually killing the weed.
6	**DETAILS OF RESULTS OBTAINED DUE TO THE ADOPTION OF TECHNOLOGIES (SEASON-WISE CROPS GROWN, TECHNIQUES ADOPTED, RESULTS ACHIEVED ETC.)**	Neochetina spp. has controlled water hyacinth from 5 large ponds namely Mahanadda, Ranital, Guloua tal, Man Singh Tal, etc in Jabalpur after its introduction in 1995-1996 . In Mahanadda tal, no reoccurrence of water hyacinth has been observed till 2008. Inhabiting people in the surrounding areas of the pond appreciated the efforts of the institute in controlling of water hyacinth problem which was persisting for last many years.
7	**NATURAL RESOURCES SAVED/CONSERVED LIKE SOIL, WATER ETC.**	It can be managed effectively by manual, mechanical, chemical and biological methods but manual and mechanical methods are very costly and do not provide the permanent solution. It may effectively be controlled by some herbicides like 2,4-D, glyphosate and paraquat but this method has received little preference in India due to the cost and environmental implications.

SL	PARTICULARS	DETAILS
8	ANY OTHER RELEVANT INFORMATION	Recently, , introduction of bioagent in 2003 was made in a pond of village Junmani where 1000 weevils were introduced along with herbicide application in 15-25% area of the pond. The beetles were established throughout the pond within six month and controlled water hyacinth completely two times within a period of 22 months. This is a successful example of integrated approach of water hyacinth.

A pond full of water hyacinth before release of weevils

Grubs damage petioles Adults feed on leaves

Brown patches amidst the Water hyacinth indicating start of damage creating by weevils

The same pond cleared from water hyacinth by the weevils