

Stimulating Young Minds Shunning Stubble Burning



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Ministry of Agriculture and Farmers Welfare, Government of India, New Delhi



ICAR-Agricultural Technology Application Research Institute, Zone-II
भाकृअनुप-कृषि तकनीकी अनुप्रयोग अनुसंधान संस्थान, क्षेत्र-II

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Abbreviation

CRM	Crop Residue Management
NCT	National Capital Territory
HARSAC	Haryana Space Application Center
ICAR	Indian Council of Agricultural Research
ATARI	Agricultural Technology Application Research Institute
KVKs	Krishi Vigyan Kendras
SAUS	State Agricultural Universities
FSI	Farmers Scientists Interface
HS	Happy Seeder
ZT	Zero Tillage

1. Introduction

The minds of today's students are very fast, which are very active to understand new ideas, information and concepts. Of course, for a good result in a healthy society, children definitely have a great hand. Students learn discipline, good behavior and duty towards society in schools and whatever they learn in schools has a lasting impact on their minds. Therefore, catching these young minds at school level is considered to be an important component of the campaign against the burning of relics. To spread the message about issues of social welfare, school students can prove to be big property. School students can greatly help in crop residue management, these students can bring a huge change in their society, hence, these future students can be advised not to burn parali by giving information about crop residue management in the fields through school. The serious problem of air pollution can be reduced by running crop residue management awareness campaign for students in school.

Today's students are tomorrow's citizens and nation builders. The energy of school & college going children and youth must be well directed to reap expected benefits for the nation as a whole. These young minds way forward influence the decisions of their parents, schools & college managements etc. Moreover, these young minds will become teachers, parents, mentors, motivator, advisor, communicator, conveyer, innovator, guides etc. and influence future minds. They will become researchers, policy makers, government servants, politicians, social wishers etc. and influence the way not just the India but the entire world will be driven. School and college students will be specifically targeted as potential stakeholders under mass campaign against residue burning. KVKs one supposed to motivate students to influence their farmer parents, neighbours and villagers to give up the practice of residue burning and adopt different residue management technologies. Moreover, concerted efforts have also made to sensitize students to adopt and follow a climate friendly lifestyle for sustainable development.

The severe problem of burning of parali in the National Capital Territory of Delhi and Haryana states, due to which burning of crop residues in the fields has a negative effect on soil health. Air pollution is causing many diseases in the environment, this nation issue can be known to young people by now a days and young people can eliminate this serious problem, hence the youth should be given information about crop residue management, through which could build he knows a good society. It can be spread by harvesting the crop residue management programme in the school and the college; through the children, the parali could be prevented from burning, thereby increasing the fertility of the land and reducing the pollution could also be played in the school curriculum.

The rice and wheat system is one of the widely practiced cropping systems in Indogangatic plain regions especially northern India. About 90–95% of the rice area is used under intensive rice wheat

system in Haryana and Punjab. Widespread adoption of green revolution technologies and high yielding variety of seeds increased both, crop as well as crop residues. In the last few decades' intensive mechanization of agriculture has been occurring and combine harvesting is one such input, particularly in the RWS where relatively short period of time is available between rice harvesting and wheat sowing and any delay in planting adversely affects the wheat crop yield. This coupled with combine harvesting compels the farmers to burn the residue to get rid of stubble left out after the harvest. Wheat and rice crop residues are burnt during the months of April–May and October–November each year, respectively in the state of Haryana leading to impacts on different environmental components. Therefore, the present research has been carried out to identify the factors responsible for crop residue burning and to check the awareness level among farmers regarding residual burning and its impacts on environment.

All the Krishi Vigyan Kendra in Haryana and NCT of Delhi, organized awareness raids to make people aware of the harmful effects of residue burning to all sections of the society in which school children took part. Krishi Vigyan Kendra collaborated with rural schools involving students in the campaign against the burning of relics. Students shout slogans, that prevent residue from burning, and Krishi Vigyan Kendra have pledged to stop the students from burning the remains.

The students took out rallies by shouting slogans for not burning the straw and spreading the message to save the environment for the future. With this, the students were encouraged to spread the message in their villages and also exposed the harmful consequences of burning to their parents and relatives. He also urged the students to pursue their parents to use the recommended technologies to stop this curse of agriculture. The objective of the programme is to make rural people aware about the harmful effects of straw burning. Organization on rally of students to highlight the issue of the burning of relics and to make rural people aware about various resource conservation technologies and relocation management techniques.

According Krishi Vigyan Kendras have active involved school students in various competitions to allow them to express their ideas and understanding about the menace of residue burning. Essay writing competition have been meant to let the student is their concept of environmental damage done by residue burning and possible strategies to control the damage. Similarly, slogan writing competition was to encourage students to come up with effective ideas for sensitizing farmers about the ill effects of residue burning.

2. Efforts of Krishi Vigyan Kendras for Stimulating Young Minds

2.1 KVK, Ambala

India is an agriculturally dominated country or it will not be wrong to say that India lives in villages. Primary occupation of villagers is still agriculture and its allied ventures. India is the young nation in the sense that share of its youth in total population in 2011 stands at 34.80 %. India is also seen to remain younger than many other populous countries. This has provided a great opportunity for the country to reap this demographic dividend for making rapid agricultural growth.

The youth of the nation are the trustees of prosperity. Youth are defined as the group of people who are between childhood and adulthood, aged 15 to 29 in the national youth policy. Youth is a huge reservoir of energy which needs to be tapped and harnessed intelligently for the development of the society. Young children are often more sensitive than we realize therefore to streamline their energy we have to use their potential to guide their neighbours and farm families for horizontal expansion of the crop residue management. As for as KVK situated in the rural surroundings scientist to KVK youth and parents aim to youth for link between KVK and youth's parents, neighbours and farming community.



2.1.1 Awareness camp in school and colleges

For efficiently communicating the message of not to burn the paddy residue and its *in-situ* management and convince of the above message KVK had selected two schools in the adopted villages Sapeda and Landa, which are also situated in the rural background area of Ambala. KVK organized “Crop Residue Management, Awareness Camp” at Govt. Sr. Sec. School, Sapeda on dated 06.09.2018 in which 150 students were participated enthusiastically. On this auspicious programme, Dr. Mohar Singh Meena (Pr. Scientist, Agril. Ext. ATARI-II) took part and all the KVK staff were also actively

participated in the camp. Similarly, more than 100 students participated in the awareness camp from Govt. Senior Secondary School, Landa, 11.09.2018.

The programme was started by explanation of various objectives of the CRM project. KVK team briefed upon innovative machinery by which sowing of wheat could be done without burning the paddy residue. By incorporating the paddy residue, how can prepare our farms for vegetable cultivation was extensively covered.

Rajiv Gandhi Govt. College, Saha also situated in the rural area of Ambala and the students also came from nearby villages and tehsils, KVK has organized a big level awareness camp on dated 22.09.2018 at college campus. In this programme college principal, NCC and NSS volunteers of the college also participated and total of 250 students have taken part in this camp. The students also presented the cultural programme such as Giddha and Dance. In general, it is necessary to first aware a person, who is going to change in the thinking of farmers. For this students were encouraged to take part in different awareness campaign. The students were also made aware about ill effects of residue burning and available machinery and recommended techniques for residue management.

2.1.2 Poster, slogan and rally

Illustrations help children express their thought about the ideas and menace of residue burning. Therefore, various competitions were coordinate by KVKs for school and college children to allow them to express their ideas. A slogan and poster making competition and quiz was organized at Govt. Sr. Sec. School, Sapeda, Landa and Rajiv Gandhi Govt. College, Saha. In which 100 students each of higher secondary classes and graduation and post-graduation classes actively participated in order to create awareness against crop residue burning. The participants were also regarded with back bag and facilitated with educational material like charts, colours painting brush, note pad and extension literature etc. for smooth conduct of the activities.



In all the programmes, the students of school and college organized Chetna Rally. The objective of the programme is to display messages to farm families of villages on harmful effect of residue burning, save environment and maintain soil health. Slogans have been printed, written on walls and hoarding, or shouted at large gatherings. Extension literature were also prepared and distributed among the masses.

Exposure visits have helped the rural youths in getting convinced personally by seeing the live demonstration. Therefore, KVK also invited the school and college students during Kisan Mela on dated 02.11.2018 for their active participation. Detailed information on the use of machinery such as Happy Seeder, Straw Chopper/ Mulcher, Zero Tillage Seed Drill, Reversible Mould Board Plough, Super Straw Management system fitted on combine was also advocated to the students. During the programmes students were made aware for effective utilization of natural resources and efficient management of crop residue for sustainable agriculture to safeguarding the environment. The participants were briefed about the importance of either retaining the residue as mulch or incorporation in to the soil to improve soil health and fertility, which also help in decreasing the application of inorganic chemical fertilizers.



2.2 KVK, Bhiwani

Because most of the students in school and colleges belong to rural areas and from farming community it becomes very necessary to aware them about the CRM to stimulate their minds about this burning issue of CRM through organization of debate, slogan, essay and painting competition were organized at school and college level. Theme was given to students on environmental pollution, green India, soil health, save environment. 50 students participated in this with full enthusiasm and presented their views on this.

First, 2nd and 3rd prizes were distributed to the winners to encourage them to save environment. 2nd activity was painting competition with same theme. Students participated with great spirit and came out with several new ideas. Prabhat pheri by the school children of villages Jhinjar and Misri was also



organized to create awareness among the village people about this programme. 100 school children participated in prabhat pheri along with school staff and KVK staff. In prabhat pheri students along with staff took round the village with slogan, banners on save earth, save environment, stop residue burning. Refreshment, registration material, caps were distributed among the students.

CRM activities were also organized at colleges Govt. Girls College Bhiwani and Janta Vidya Mandir Baund, Charkhi Dadri with the aim to stimulate young minds to create awareness about the straw burning. Mainly 4 activities were held at colleges: essay writing, debate, slogan and painting competition with the theme of crop residue management.

80 students participated in essay competition and painting competition. In debate competition that reflect their views in front of jury in favour and against the theme. college staff gave their full support to organize these activities.



2.3 KVK, Delhi

Because most of the students in school and colleges belong to rural areas and from farming community, it becomes very necessary to aware them about the CRM to stimulate their minds about this burning issue of CRM through debate, extempore, slogan writing, poster making and general knowledge quiz competition were organized at school level.

Krishi Vigyan Kendra conducted mobilization of school awareness programme of school students at Government Girls Senior Sec. School, Ghumenhera Village dated on 14 August, 2018. The objective of the programme was to sensitize farmers by students about the deleterious effects of straw burning. In this programme sensitization create through lecture by expert on crop burning is very harmful for environment and human health. During this event, more than 330 students, teacher and farmers participated.

State level awareness competition “Delhi Enviro-Quest-2018” was organized by Krishi Vigyan Kendra, Delhi at Shishka Bharti Global School, Dwarka, Sector -8, New Delhi from 19-20 November, 2018 under Central Sector Scheme “In-Situ Crop Residue Management”.

During the “Delhi Enviro-Quest-2018” more than 800 students were participated from different 85 Central, Government and Public Schools of NCT Delhi. The details events-wise participation is as fallows:

Name of Events	Group	Theme	Number of Participants students
Debate	Group A (6 to 8 Class)	Can crop residue management in agriculture”.	75 (38 Favour & 37 Against)
	Group B (9 to 10 Class)	Can cleaning of crop burning control pollution in NCR Delhi	79 (39 Favour & 40 Against)
Extempore	Group A (6 to 8 Class)	Climate change, greenhouse effect, greenhouse gases, acid rain, air pollution, water pollution, benefits of crop residue management and global warming, source of air pollution. Management options of crop residue and organic farming	60
	Group B (9 to 10 Class)		58
Slogan Writing	Group A (6 to 8 Class)	Save lives by green environment through participation	92
	Group B (9 to 10 Class)	Air pollution control by crop residue management	79
Poster Making	Group A (6 to 8 Class)	Crop residue and save earth	103
	Group B (9 to 10 Class)		90
General Knowledge Competition	Group A (6 to 8 Class)	Agricultural and science based questions.	74
	Group B (9 to 10 Class)		90

The winner of these events have been honoured in mega events with cash prize of Rs 1000-2500/ and memento with certificate by the auspicious hand of chief guest. The school has been honour by trophy.



Conclusion:

Krishi Vigyan Kendra Delhi is actively involved in organization of different awareness programme for spread of message to farmers and students on harmful effect of crop burning for soil properties, structure, environment and human health KVK also conducted demonstration on wheat crops sowing Happy Seeder, Zero-till, Seed Cum Fertilizer Drill and uses the Mulcher Practices and found results zero burning of crop residue in NCT Delhi. The rice cultivation area cultivated by mulcher in 30 ha and wheat sown by zero till seed cum fertilizer drill in 30 ha and followed by happy seeder 10 ha under this programme. Wheat Crop is very good sown under the conservation technology the observation data recoding is in progress.

KVK team is visiting time to time at farmers fields which have been sown under CRM and suggesting their good management practices viz. weed management, insect management and nutrient management etc. The crop condition is very good sown under CRM project using of implement as compared to conventional method of wheat sowing.

Through Delhi - Enviro - Quest 2018 students, parents and teachers known the importance of residue burning and they become of KVK for environmental safety.

2.4 KVK, Fatehabad

Young minds of children are very active to grasp new ideas, information and concepts. Students learn discipline, good behaviour and duties towards society in schools and colleges and what they have learnt at these institutions have a lasting impact on their minds. Therefore, catching these minds were considered as an important component of campaign against residue burning. School and college students can prove to be great assets when it comes to spreading messages about social issues. Therefore, mobilization of school & college students to create awareness about ill effects of residue burning and to acquaint them about CRM, activities like prabhat pheri, essay competition, paintings, slogan writing and debate competition on CRM were conducted at college and schools under the project.

2.4.1 School activities organized under CRM

A. Prabhat pheri

Krishi Vigyan Kendra Fatehabd organised prabhat pheris in both the adopted villages to sensitize villagers about harmful effects of residue burning by involving school students. Students raised slogans, held banners, delivered messages to stop paddy straw burning. The students raised the slogans “Dharti Maata Kre Pukar, Parali Na Jalao Abki Baar”, “Paraali Nahi Jalayenge, Vatavaran Ko Bachayenge” to convince the farmers to this life threatening practice.



B. Essay and painting competitions

Essay & painting competitions have been organised by the KVK for school children to express their ideas and understanding about the residue burning and crop residue management. These competitions have been meant to let the students' synthesis their concept of environmental damage done

by residue burning and possible strategies to control the damage. The students have expressed wonderful ideas and delivered meaningful message through paintings about ill effects of residue burning on soil & health. Students were awarded by giving them prizes.



2.4.2 College activities under CRM

Like the school students, college students of KTC Government College, Ratia, Fatehabad have been organized to mobilize towards creation of awareness about crop residue management under the project. KVK, Fatehabad organised debate, essay and slogan writing competitions on crop residue burning, its ill effects on soil & health. Students participated very enthusiastically in these activities.



Essay competition



Slogan Competition

2.4.3 Impact of efforts done by KVK on crop residue management

The practice of burning rice crop residue was very dangerous during the year 2016 and Fatehabad district ranked 1st in straw burning among 20 paddy residue burnt district of Haryana. 3800 locations of paddy residue burning were identified in the district (HARSAC, Hisar).

KVK, Fatehabad started its campaign against paddy stubble burning about two years back in 2016-17. During this third-year period this campaign get transferred into a momentum through a large number of initiatives and concerted efforts in this direction. KVK organized different awareness

programmes to motivate farmers to not burn the residues themselves and to demotivate others too as well as to opt for alternative residue management techniques. KVKs actively collaborated with the State Department of Agriculture and other government and non-government institutions and organizations to convince farmers to quit the practice of crop residue burning. As a result of these activities and efforts, during this year, 2911 burning location of paddy residue identified by HARSAC, Hisar as compared to 3800 locations identified in 2017. There is about 24 per cent decrease in crop burning locations as compared to the year 2017. Farmers of adopted villages Haroli and Dangra participated enthusiastically in campaign against paddy residue burning and almost zero burning was observed in these adopted villages. Farmers of nearby villages also have shown significant impact of these activities as they have been involved in activities like Kisan Mela, F-S interactions and CRM related activities.

2.5 KVK, Jhajjar

For stimulating the minds of young generation mobilization of school and college students have been done by KVK, in the schools of operational villages. The students have been motivated through essay writing competition, painting and slogan competition. Hundred students from each school actively participated in these events and to encourage these students they were awarded by some prize.



A Parbhat-pheri has been also organized in each village by school students for creating awareness among the village people by holding some slogan in their hands i.e. “Parali Na Jalao Vatavaran Ko Bachao”, “Khet Ke Avshesh Khet Mein Milao” and “Dharti Mata Kare Pukar Na Jalao Parali Ab Ki Bar”. Similarly, college students have been mobilized through organizing one-day awareness campaign in collage and by organizing different activities viz. essay, painting, debate and slogan competition.



A total of 280 students of Maharaja Aggarsen College, Jhajjar participated in these activities and three best students in each activity have been awarded with prizes. Awareness has also been organized through newspaper coverage of each and every activity implemented by KVK. A chopal charcha was also organized in one of operational village (Baghpur) through Doordarsan Kissan, New Delhi and was broadcasted two time through their channel. Several group meetings were also conducted by involving young generation to stimulate their mind.



2.6 KVK, Jind

Interaction have been one in schools of village Ghimana, Durana, Dhathrath etc. Essay writing, painting competition etc. have also been organized in these schools. The students have been shown importance of implements and their role in CRM like HS, ZT machine, mulcher, SMS etc.

One student Miss Parul at village Durana said that I will definitely change the views of my family at any cost for zero stubble burning. It was like the case of Miss Sonali of village Dhakal who was honoured by NGT, Delhi. Moreover, Parbhat Pheri has been conducted in both villages by school children.



2.6.1 Parbhat Pheris

The school students participated in parbhat pheris along with the staff of schools and scientists of KVK, Jind in the streets of selected villages and disseminated the message 'Parali Na Jalao-Khet Ke Avshesh Khet Me Milao' to the villagers. Students raised slogans, held banners, hoardings and delivered messages to villagers on not to burn rice and wheat straw.



Prabhat pheri at Govt. Senior School Village Dhathrath, Jind

2.6.2 Nukar Nataks

Nukar nataks have been prepared by joint ventures of School Headmasters, school children's, and KVK scientists. During this activity the message of ill effects of crop residue burning and methods of *in-situ* crop residue management have been executed at two places of selected villages Durana and Dathrath.

2.6.3 Poster making, essay & slogan writing competitions

Different types of competitions like poster making, slogan writing and essay writing were organized among the school children's by KVK, Jind at GHS, Durana and GHS, Dathrath. The theme of all the competitions was *Not to burn the crop residues or Don't burn it- turn it*. KVK team Jind motivated the students to take part in these competitions and to express their views on this burnt topic. The students have been given prizes by nodal officer.



Painting and essay writing competition at Govt. High School Village Dathrath, Jind

2.6.4 Debate competition

A debate has been organized among students of GHS, Ghimana. First of all, the positive and negative views of young minds were listened carefully and afterwards all the misconceptions regarding *in-situ* crop residue management were resolved by KVK team. The focus of the programme was on creating awareness about the hazards of straw burning at fields after harvesting paddy and wheat. Moreover, a visit of the students was organized at KVK, Jind for showing the implements of CRM.



2.6.5 Motivational lectures and religious saints lead campaign

The religious people of Gurudwara of village Durana have been instrumental in our campaign for CRM. One contact farmer Sh. Rohtash village Jalalpura has demonstrated HS for the last seven years under the supervision of KVK, Jind. He has been selected farmer representative member of district level team. His experience is very helpful as farmers believe the farmers more.

Sh. Angrej Singh (Village Durana) purchased Happy Seeder but earlier nobody was ready to use this in wheat sowing. A demonstration was conducted on the field of Sh. Sukha Singh. The paddy was

harvested by combine harvester without SMS, and mulcher was used and then sowing was done by Happy Seeder in the presence of DDA, AAE and of course KVK with sizeable farmers.

After good germination, the farmers of village Durana agreed for happy seeder sowing and Sh. Angrej Singh took only diesel for wheat sowing in the whole village without any other charges. The end result is that the village which used to burn stubbles in more than 90% fields in the past, this year it was below 5%.

2.7 KVK, Hisar

Young minds are prone to stimulate towards a positive approach and youngsters are flag bearer of any change in society. This idea is used by KVK scientists to build up the positive environment on *in-situ* crop residue management. The school and college students have been mobilized by organizing two school programmes by involving the students from Govt. High School, Khokha & Ghirai and one college programme at College of Agriculture, CCS HAU, Hisar.

2.7.1 Parbhat Pheris

The school students have participated in parphat pheris along with the staff of schools and scientists of KVK Sadalpur in the streets of selected villages and disseminated the message 'Parali Na Jalao-Khet Ke Avshesh Khet Me Milao' to the villagers. Students have raised slogans, held banners, hoardings and delivered messages to villagers on not to burn rice and wheat straw.



2.7.2 Nukar Nataks

Nukar nataks have been prepared by joint ventures of School Headmasters, KVK, Scientists and school students on the message of ill effects of crop residue burning and methods of *in-situ* crop residue management and executed at prominent places of selected villages Khkha & Ghirai.



2.7.3 Poster making, essay & slogan writing competitions

Different types of competitions like poster making, slogan writing and essay writing have been organized among the school and college students. KVK, Sadalpur organized essay writing and poster making competitions at GHS, Khokha and GHS, Ghirai for school students and essay writing, poster

making and slogan writing competition for B.Sc. Hons. (Agri.) students of COA, CCS HAU, Hisar. The theme of all the competitions was *Not to burn the crop residues or Don't burn it- turn it* motivated the students to take part in these competitions and to express their views on this burnt topic. The students who expressed his/her views brilliantly were also distinguished and prized for further motivation.



Team has also made an appeal to all the youngsters to spread the message of *in-situ* crop residue management to their parents, neighbours and other contact farmers and to provide this campaign a widespread publicity.

2.7.4 Debate competition

A debate competition has been also organized among college students and NSS volunteers from College of Agriculture, CCS HAU, Hisar took part in this competition. First of all, the positive and negative views of young minds have been interested carefully by the scientists and afterwards all the misconceptions regarding in-situ crop residue management have been resolved. The focus of the programme was on creating awareness about the hazards of straw burning at fields after harvesting wheat and rice and on changing the existing mind set towards straw burning.

2.7.5 Motivational lectures

To build the mind set of students, scientists of Krishi Vigyan Kendra, Sadalpur delivered interactive lectures to make them aware about the seriousness of the issues of residue burning and different ways to manage crop residues. Total school & college students to take active part in this anti-straw burning campaign and try to encourage the farmers to manage the crop residue in an eco-friendly manner. Team also elaborated the schemes, subsidies and incentives for the farmers who pave the way towards *in-situ* crop residue management.



KVK team told the students about ill effects of straw burning on soil and human health and urged the students to convince their parents to use recommended technologies for residue management.

The whole KVK, Sadalpur team also motivated the students to spread the message of “No Residue Burning” in their villages and also to convey the harmful outcomes of stubble burning to their parents and relatives.

2.8 KVK, Kaithal

Interactive lectures have been delivered in schools of village Kharkan, Kural, Barot, Patti Afgan, Hajwana, Rasina etc. Essay writing, painting competition etc. were organized in these schools. The students were shown the implements and their role in CRM like HS, ZT machine, mulcher, SMS etc. Moreover, Parbhat Pheri were conducted in both villages by school children.



2.8.1 Parbhat Pheris

The school students participated in parbhat pheris along with the staff of schools and scientists of KVK, Kaithal in the streets of selected villages and disseminated the message 'Parali Na Jalao-Khet Ke Avshesh Khet Me Milao' to the villagers. Students raised slogans, held banners, hoardings and delivered messages to villagers on not to burn rice and wheat straw.



2.8.2 Nukar Nataks

Nukar nataks have been prepared by joint ventures of School Headmasters, School Children's, and KVK Scientists. During organization of activity the message of ill effects of crop residue burning and methods of *in-situ* crop residue management were executed at villages Hajwana, Rasina, Kharkan, Kural, Barot, Patti Afgan.

2.8.3 Poster making, essay & slogan writing competitions

Different types of competitions like poster making, slogan writing and essay writing were organized among the school children's by KVK, Kaithal at Hajwana, Kaul, Rasina. The theme of all the competitions is *Not to burn the crop residues or Don't burn it- turn it*. Coordinator, KVK, Kaithal motivate the students to take part in these competitions and to express their views on this burnt topic. The students have been awarded prizes by nodal officer.



2.8.4 Debate competition

A debate has been organized among students of Rasina, Hajwana, Kaul. First of all, the positive and negative views of young minds were listened carefully and afterwards all the misconceptions regarding *in-situ* crop residue management were resolved by KVK team. The focus of the programme was on creating awareness about the hazards of straw burning at fields after harvesting paddy and wheat. Moreover, a visit of the students was organized at KVK, Kaithal for showing the implements of CRM.

2.8.5 Motivational lectures and religious saints lead campaign

The religious people village Hajwana and Rasina have been instrumental in our campaign for CRM. The paddy has been harvested by combine harvester without SMS, so mulcher has been used and then sowing has been done by Happy Seeder in the presence of DDA, AAE and of course KVK with sizeable farmers.



S.No.	Name of activity (School/College)	Date	Place of activity	Participants
1	Essay competition	06.10.18	Govt. School, Hajwana	50
2	Painting competition	08.10.18	Govt. School, Hajwana	50
3	Parbhat Pheri	11.10.18	Govt. School, Hajwana	104
3	Essay competition	09.10.18	G.S.S. School, Rasina	50
6	Painting competition	09.10.18	G.S.S. School, Rasina	50
8	ParbhatPheri	12.10.18	G.S.S. School, Rasina	150
4	Essay competition	11.09.18	COA, Kaul	77
4	Painting competition	12.09.18 22.10.18	COA, Kaul	48
9	Debate	13.09.18	COA, Kaul	73
10	Slogans	22.10.18	COA, Kaul	48

After good germination, the farmers of village Hajwana, Rasina, Kharkan, Kural, Barot, Patti Afgan agreed for happy seeder sowing. The end result is that the village where farmers used to burn stubbles in more than 70% fields in the past, this year it has been below 5%.

2.9 KVK, Karnal

KVK mobilized school children to convey message in the villages and exert with their family and relatives not to burn paddy stubble by organizing prabhat pheries and drawing competition. KVK organized four prabhat pheries in village Dabri, Kunjpura, Kulwehri and Nilokheri apart from drawing competition on crop residue management in Govt. Sr. School Gharaunda.

KVK developed leaflets and folder in Hindi on effects of crop residue burning on soil and environment and use of different machines for *in-situ* management of paddy straw in the fields. The literature has been developed in simple to understand local language.



Slogans on harmful effect of paddy burning and alternatively its use in fields, to enhance soil health, have been wall painted in various villages. KVK also placed banners and hoardings crop residue management at prominent places in different villages of Karnal district apart from main entrance of ICAR Institutes which are visited frequently by the farmers.



KVK has also organized farmers scientists interface on 16.11.2018 in which more than 90 farmers participated KVK organized a Kisan Mela on Crop Residue Management on 28.12.2018 which was visited by more than 500 farmers from Karnal district. In this Mela, Report person from State Government and ICAR Institute delivered interactive lectures to the students & farmers and sensitized them on *in-situ* management of crop residue. An exhibition on latest varieties and technologies developed by various ICAR Institute located in Karnal and state departments was also arranged. Farmers who used the machines in their fields and adopted *in-situ* management of paddy straw were also honoured in the Mela.

With also these anti-stubble burning campaigns in Karnal district farmers are pledging not to burn crop residue in the fields particularly young farmers. There had been fewer cases of paddy stubble burning this year in Karnal district.



Farmers who sowed their fields after mixing the paddy stubble in the soils with machines have also been mentioned less weeds infestation in their wheat crop and increase in the organic matter in the soil. However, the less number of machines in the district are the major hurdle in adoption of *in-situ* management of crop residue.

2.10 KVK, Kurukshetra

Crop residue burning has been identified as a major health hazard and one of the biggest challenges that Haryana is facing now a day. Good management of field residues can increase efficiency of irrigation and control of erosion. So what is necessary to change a person is to change his awareness of himself. For this purpose, awareness among students of colleges, schools, ITI students were encouraged to take active participation in different awareness campaign on crop residue management.

2.10.1 Awareness rally

KVK, Kurukshetra organized awareness motorcycle rally in village Barna and 5 rallies of children to stimulate people from all the section of the societies about the harmful effects of residue burning.

2.10.2 Motivation lectures

Scientists of this centre delivered number of motivational lectures particularly on crop residue management to the participating farmers, trainees in the different programmes organized by this centre for the benefit of farmers, unemployed youth. Interactive lecture by Senior Coordinator on this aspect has been also delivered to the 600 girls students of D.N College, Kurukshetra.



2.10.3 Essay and slogan writing competition

Essay and slogan writing competition have been organized in Kuruskhetra Model School, ITI, Government Sr. Secondary School Kamoda, Government Senior Secondary School, Umri and Government Primary School Barna. More than 500 students participated in these programmes and the best students for making posters and beautiful slogans have been given prizes.



2.11 KVK, Panipat

The domain of crop residue management technologies is comparatively new to the farmers and in cases have conflict with the traditional wisdom of farmers. Starting with the zero tillage in wheat in late 1990s, it was quite difficult to convince the farmers that wheat crop could be successfully raised without any preparatory tillage. The CRM technologies like Happy Seeder are a step ahead over the zero tillage wherein the farmer has to be convinced that raising wheat crop is possible while retaining the full straw load of paddy '*in situ*'. There is no denial of the fact that residue burning could not be controlled unless we offer a reliable, credible and feasible alternative with favorable economics to the farmers within his resources and managerial. The whole matrix of CRM technologies requires paradigm shift and a mental twist to facilitate their adoption. Having regard to all these socio-technological issues, KVK approached the young minds right from its campaign. Young farmers have been given priority in training programmes, demonstrations and farmer scientist interactions. In our interaction with youth associations, college and school students, the issue of residue burning and its replacement with CRM technologies has been discussed at length even when such discussions happened for other purposes and



with different agenda. KVK has also organized programmes in four schools wherein the students mostly hail from farming families. Painting and debate competitions have been organized and with all these efforts the message travelled well and KVK has been able to counter the menace of crop residue burning to a large extent.

Among the custom hiring centers established, it has been quite noticeable that CHCs owned by young farmers did commendable work. Hence, it should be focal issue that young minds having broader world view, more open to new ideas and energy and aggression to the positive agenda would be pioneer and harbinger of a revolution where the residue burning would be a thing of past and majority of cultivated area would be under conservation agriculture with CRM technologies in its fold.



2.12 KVK, Rohtak

Different programmes aimed at sensitization of youths on leadership and role modelling, developing mind set with relevance to *in-situ* crop residue management. The school and college students have been mobilized by organizing two school programmes with the involvement of students from Govt. High School and Govt. Senior secondary school, Bainsi and Sanghi and one college programme at Govt. Women College, Lakhan majra, Rohtak.

2.12.1 Training program

One-day training program was organized by KVK, scientist for 110 college going youngsters of Rohtak district to stimulate a positive approach towards *in-situ* crop residue management.



2.12.2 Parbhat Pheris

The school students participated in parbhat pheris along with the staff of schools and scientists of KVK Rohtak in the streets of selected villages and disseminated the message 'Parali Na Jalao-Paryawarn Ko Bachao' to the villagers. Students with banners, hoardings, caps with slogan took out a prabhat pheri in both the selected village. An oath has been taken by students to extend over the message regarding residue burning impacts and its management options with slogan '*Don't burn it- turn it*'.



2.12.3 Poster making, essay & slogan writing competitions

KVK, scientists organised various competitions like poster making, slogan writing, debate/declamation and essay writing among the school and college students of selected villages. The theme of all the competitions is “Promotion of agricultural mechanization for management of crop residue”. A successful awareness program has been organised at government model sanskriti senior secondary school, Sanghi. Various events viz. painting/slogan, essay writing competition and prabhat pheri in village have been organised for student. All students participated with full of energy and enthusiasm in each and every event. KVK team has never seen this type of government school before. Principal of school is extraordinary hardworking and dynamic personality. Students in the school are talented and highly versatile. The students who have expressed their views brilliantly are also distinguished and awarded with prizes.



2.12.4 Debate competition

A debate competition has been organized among college students of Govt. Women College, Lakhan majra, Rohtak. The declamation/debate are very interesting as most of the students belong to village and they have known about this burning issue round the country. After completion of competition, all the queries of students have been resolved by KVK, scientists. KVK, scientists delivered interactive lectures to make them aware about the ill effects of residue burning and sustainable methods to manage crop residues.



2.13 KVK, Sirsa

The school and college students have a great influence and emotional attachment with their parents. Keeping in mind this approach, manipulating the thinking of young students is a great concept. Krishi Vigyan Kendra Sirsa organised prabhat pheri, essay competition, drawing competition and debate competition in schools of both the adopted villages Mallewala and Umedpura. The students of the schools took a keen interest in the competitions and activities organised by KVK, Sirsa. All the students have been convinced that it is very necessary to save the environment so that the new generations can take best of it. If the students don't convince the parents against residue burning, the next generation will suffer huge in terms of air pollution and soil pollution resulting in low crop yield.



By essay competitions and paintings, it has been highlighted among the students that residue burning is an evil and threat and it should be curtailed. The students have been told to mound the thinking of their parents so that the residue burning may be ended up. A similar programme has been organised in the college and large number of students took part in various activities organised. Prizes have been given to the students who performed best in the competitions. The students have been convinced by the campaign against residue burning.



While debating the student's emphasis has been given on residue burning as harmful to the environment and it should be banned immediately. Majority of students have assured that they will convince their parents about the harmful effect of residue burning. Some of the students are eager

towards the machinery and other practices used in managing the residues. In painting competitions students highlighted the bad effects of residue burning in terms of environment pollution. They also assured that not only they will convince their parents towards non burning but they will come in farming profession after growing up, they will never burn the residues rather conserve for environment security and soil health.



2.14 KVK, Sonipat

Funds have been provided to KVK for creating awareness amongst school and college students about the harmful effects of crop residue burning on soil, environment and water. The school children of these two selected villages have been made aware by conducting essay writing competition, painting competition and parbhat pheri. School students shown keen interest during these activities. They draw paintings on effect of crop residue burning on environment and how to save our environment by adopting straw management technologies. Hundred students (100) from each village participated in these events and best students in essay writing and painting was awarded prize to encourage the moral of the students to convince their parents and fellow farmers not to burn crop residue. During parbhat pheri all the main path ways of the two villages were covered and students raised slogans about 'Parali Na Jalao Vatavaran Ko Bachao, Khete Ke Avshesh Khet Me Milao'.

Govt. Girls College, Kharkhoda has been selected to organize crop residue management programme in form of essay, painting, debate and slogan competition etc. and 80, 80, 80 and 40 students participated in these activities, respectively.



Three best students in each activity have been awarded prizes. The girl students have much convinced and impressed by govt. initiative to save the environment, soil, water and flora & fauna by adopting IEC activities organized by KVKs.



2.15 KVK, Yamunanagar

2.15.1 Crop residue management week (May 13th -19th, 2018) celebrations in schools

Krishi Vigyan Kendra Yamunanagar team visited Government Senior Secondary School in Damla on May 8th, 2018 to sensitize students and the teachers about harmful effects of stubble burning and sustainable options to manage it. Team insisted students and teachers alike to stop burning of leaves and school waste and instead use it for compost making in the school premises itself. The interactions ended with an oath by the students to save our planet and serve as an example.



2.15.2 Another visit was made to Government Senior Secondary school, Khurdi on May, 22nd, 2018

A team of KVKs scientists informed to students about various techniques for sustainable waste management. To create awareness and instil environmental responsibility among future generations of India, KVK, Yamunanagar team organised school student's awareness programmes on crop residue management along with organizing several competitions viz. slogan writing, painting competition, essay competition covering issues related to burning problem and how to address them.



2.15.3 Students awareness program on crop residue management (22-11-2018)

To create awareness and instil environmental responsibility among future generations of India, KVK, Yamunanagar team organized school student's awareness program on crop residue management in Govt. Senior Secondary School, Damla and Govt. Senior Secondary School, Khurdi.



Painting and essay competition have been organized among the school students to develop/create interest and awareness towards harmful effects of stubble burning and the steps to be prevented to create awareness among college students crop residue management awareness program to students of SJP Polytechnic college, Damla was organized by KVK, Yamunanagar on 4th December, 2018. Brief introduction to what crop residue are, ill effects of stubble burning and how to manage them followed by essay and slogan writing has been organised to sensitize the students about the problem of pollution happening due to stubble burning.





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