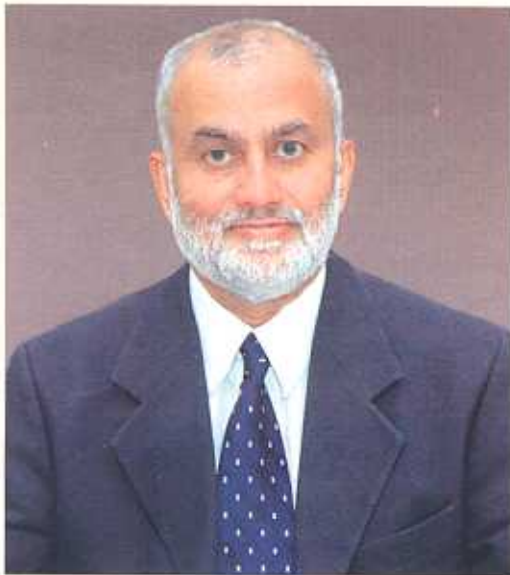




Number 42

JUNE - 2010

### ICAR Gets new DG



Dr. S Ayyappan has taken over as the Secretary, Department of Agricultural Research and Education (DARE) and Director General, Indian Council of Agricultural Research on January 1, 2010.

Dr. Ayyappan is a noted expert in Fisheries Sciences and has served with distinction in various capacities, including Deputy Director General (Fisheries) in ICAR (2002-09), Director, CIFE, Mumbai (2000-2002) and Director, CIFA, Bhubaneswar (1996-2000). He is decorated with several awards and honours that include Zahoor Qasim Gold Medal, ICAR award for team research, ZSI Gold Medal, Special ICAR Award, VG Jhingran Gold

Medal, HPC Shetty Award, SR Bhargava Medal, SL Hora Gold Medal, ASET Gold Medal, besides being Fellow of various prestigious societies. Presently he is the Vice President of NAAS.

Entire potato fraternity extends good wishes to Dr. Ayyappan. We are confident that under his able guidance and leadership, National Agricultural Research System will achieve new heights.

#### ISSUE HIGHLIGHTS

From the Director's Desk	2
Research Highlight	3
Training & Technology Transfer	6
Important Meetings	8
Invited Lectures & Visitors	9
Human Resource	10
Honours, Awards & Foreign Visits	11
Future Activities	13
International Potato Events	14
Articles on Potato	14
हिन्दी समाचार	18

## Dr. BP Singh is the new Director of CPRI\*



Dr. Bir Pal Singh has joined as the new Director of CPRI, Shimla on 30.6.2010. He had been working as Joint Director of CPRI Campus, Modipuram for almost 10 yrs and took charge from Dr. SK Pandey, the former director on his superannuation. Dr. Singh did Masters and Ph.D from Aligarh Muslim University in Botany with specialization in Plant Pathology and has research experience for over 32 years in potato. He has specialization in late blight management and has developed ten potato varieties in partnership with other Scientists. He also developed computerized Late Blight forecasting system "JHULSACAST" and mathematical model of applying need based fungicides for managing Late Blight. He established the sexuality in *Phytophthora infestans* for the first time in India and

developed botanicals for eco-friendly management of potato late blight. He has also worked on PVY resistant Triplex Parental lines development and standardization of aeroponic system of Potato Seed Production. There are 167 research papers, 11 Technical Bulletins and 7 Books to his credit.

Dr. Singh has immense International exposure. He has visited twelve countries viz., USA, UK, Germany, Italy, China, Peru, Thailand, Nepal, Ecuador, Bhutan, Sri Lanka and Mangolia. He is the recipient of prestigious awards like Hari Om Ashram Trust Award, Late LC Sikka Endowment Award, IPA Kasushalaya Sikka Memorial Award, S Ramanujam Award, Merit Award of CPRI, Professor MJ Narsimhan Medal (Indian Phytopath. Soc.), IPA Medal for best paper presentation (6 times), Award of appreciation from CPRI, Distinguished Achievement Award from CPRI and appreciation letter from Director General, ICAR.

He has also been member of several recognized societies and committees and has generated resources worth Rs. 1520 Lakhs while working as Joint Director at CPRI Campus, Modipuram. The Institute staff wishes Dr. Singh all the best for his new assignment and tenure as Director of the Institute.

### From the Director's Desk

Potato being a vegetatively propagated crop, a large number of plant pathogens perpetuate through seed tubers. Bacterial wilt or brown rot pathogen (*Ralstonia solanacearum*) is one such organism that spreads through seed tubers from one location to another. Bacterial wilt is an internationally important disease of solanaceous crops which limits potato production in tropical, subtropical and

warm temperate regions of the world. In India, though the disease is known since long time but it has emerged in the recent past as a major bottleneck to potato production in almost all the states except north-western high hills (excluding Kumaon hills) and north-western and north-central plains. Malwa region of Madhya Pradesh has been declared as "Agricultural Export Zone" and is emerging as a

potential belt for growing processing potatoes as it contributes to about 70% of the total requirement of processing units in the country. But the processing industry is under threat due to devastating bacterial wilt disease which is spreading rapidly in the region and may force the farmers to abandon potato cultivation, if suitable measures are not taken immediately. No sources of resistance have been

reported against this disease. Infected seed tubers are considered as the main source of dissemination of the pathogen. Nevertheless, the disease can be curtailed down if farmers procure potato seed from bacterial free areas coupled with use of recommended agronomic practices developed by the institute. In this issue of Newsletter, the measures to overcome this problem have been highlighted.

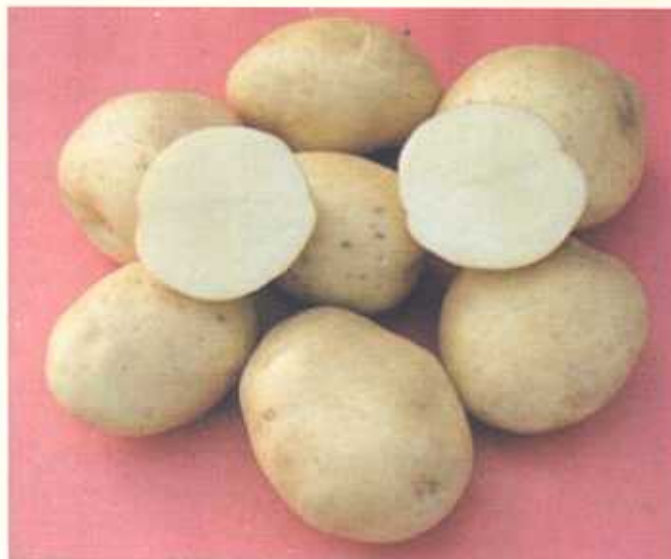
Availability of quality planting material has always been a limitation in vegetatively propagated crops. The conventional seed potato production system involving tuber indexing and multiplication of breeder seed through different stages is laborious, space consuming and exceedingly expensive. But with the advent of new technologies like Aeroponics it would become possible to produce three to four times higher quantity of quality planting material than the traditional or tissue culture based system. This system also seems to be more economical. In this direction, scientists of CPRI Campus, Modipuram have standardized the technology of aeroponic which would help in revolutionizing the potato seed industry in the years to come.

## Research Highlights

### CPRI Develops a New Late Blight Resistant Chipping Hybrid for Karnataka, West Bengal and Madhya Pradesh

Development of the Chipsona varieties has provided a boon to the potato processing industry in India; however industry still feels a crunch

of raw material in the months of September to November. In these months potatoes stored at elevated temperatures (10-12°C) with CIPC develop high levels of sugars and become unsuitable for processing into chips. Therefore, the industry depends heavily on the fresh produce from the *Kharif* crop of Karnataka especially from Hassan and Chickmagalur districts. The industry was sourcing exotic cultivar Atlantic from these areas but in the last few years, Atlantic crop has been devastated by late blight infection causing heavy losses to the farmers and the industry. Further, the most popular variety of the region namely Kufri Jyoti has very poor processing quality. The total area in Kharif crop has come down from 70,000 ha to 30,000 ha because of recurrent attacks of late blight. Therefore, there was an urgent need to develop a chipping variety for this region having early maturity and resistance to late blight, to complete round the year cycle of raw material availability. Similarly, West Bengal is becoming a hub of potato processing industries, but raw material availability is a problem as prevalent variety Kufri Jyoti is not suitable for chipping and exotic cultivar Atlantic is late blight susceptible. Due to paddy crop harvest in November, only shorter crop window is available for potato requiring an early maturing and late blight resistant variety. Because of changing climatic



*Tubers of Kufri Chipsona-4*

conditions and requirements of the industry, early maturing potato varieties are also required in Malwa region of Madhya Pradesh.

Extensive trials were conducted in these three states in last few years and hybrid MP/01-916 has been identified as the most suitable hybrid for these regions. The hybrid has ideal round shape, shallow eyes and white flesh. The hybrid yields >75% chipping grade potatoes at 90 days harvest with total and processing yields being higher than cv. Atlantic. The hybrid has better or at par chipping quality as compared to Atlantic. The hybrid is free from external defects like cracks and internal defects like hollow heart, which are very prevalent in cv. Atlantic. Most importantly the hybrid has field resistance to late blight, which will save the farmers from economic losses in terms of yield and reducing the number of sprays of fungicides. Secondly, it will provide raw material to the industry in the lean period, which is very essential for growth and sustenance of industry in the country. This hybrid has been christened as Kufri Chipsona-4.



*Chips made from Chipsona-4*

**- SK Pandey and Group**

### **A Nutrient Use Efficient Variety Kufri Gaurav Released for Indian Plains**

JX 576 is a high yielding medium maturing white tuber hybrid having moderate resistance to late blight. Other striking feature of this hybrid include high nutrient use efficiency. After initial evaluation at Central Potato Research Station, Jalandhar, it was tested along with other medium maturing hybrids in multi-location trials spread over different agro-ecological regions of the country under the All India Coordinated Research Project (AICRP) on Potato from 1999 to 2005. Under AICRP it was evaluated for four crop seasons in replicated yield trials under 75 and 90 days harvest. Under On-Farm trials it was evaluated for 2 consecutive years for yield at 90 days harvest. It has performed well for yield at 75 and 90 days in northern and eastern plains of India in replicated trials. It has performed better than best control Kufri Pushkar in Northern plains under On-Farm trials. Nutrient use efficiency studies were carried out at Central Potato Research Station, Jalandhar from 2007 to 2010 and at Central Potato Research Station, Patna in autumn crop season 2009-2010. Studies revealed that hybrid JX

576 performed better under nutrient (N, P and K) stress conditions than other control varieties like Kufri Jyoti, Kufri Pukhraj and Kufri Pushkar. Moreover, it also responded to high doses of N, P and K. Better nutrient use efficiency of JX 576 is not due to more uptakes of nutrients but due to better utilization of absorbed nutrients. It showed about 10-24% higher use efficiency of N than control Kufri Pukhraj and Kufri Pushkar during different years. It also showed 12-23% higher agronomic use efficiency of P and 16-26% higher agronomic use efficiency of K than control Kufri Pukhraj and Kufri Pushkar during different years. Research Advisory Committee (RAC) of Central Potato Research Institute, Shimla recommended that possibility of releasing JX 576 as a variety may be explored as the Committee was of the opinion that JX 576 appears to be a poor man's culture for getting high potato production at low levels of nutrition. JX 576 possesses high tolerance to nutrient stress. The hybrid required lower doses of N, P and K than other cultivars to produce a particular fixed yield in the same field. Although JX 576 performed well in entire plains of India, the specific areas for its adaptation are northern plains comprising Punjab, Haryana, Utrakhand plains and Western Uttar Pradesh. JX 576 has very attractive white skinned oval shape tubers. The tuber flesh is creamy in colour. It has good cooking quality and the texture of tuber on cooking is waxy. This variety is likely to be a good replacement for medium maturing varieties like Kufri Pukhraj and Kufri Pushkar. This variety will be useful for resource poor farmers as this hybrid produce yield similar to other released varieties at lower doses of N, P and K.



*Tubers of Kufri Gaurav*

**-Raj Kumar, GS Kang, SK Pandey, J Gopal, SP Trehan & M Kumar**

### **Industrial Evaluation of Heap Stored Potatoes of Processing Cultivars**

CPRI has developed an improved heap storage technology for short-term storage of table and processing potatoes. It involves essentially pre and post-harvest measures *viz.* tuber maturity and haulm cutting prior to harvest, curing and selection of potatoes prior to storage, providing ventilation during storage and sprout inhibition with the use of CIPC (isopropyl N-(3-chlorophenyl) carbamate). Potatoes of four processing cultivars *viz.* K. Chipsona-1, K. Chipsona-3, Kufri Himsona and Kufri Lauvkar stored in heaps with CIPC spray treatment up to 90 days were evaluated for processing quality by ITC, Ltd at their laboratory in Roorkee. To make international quality potato chips undesirable colour (UC) should not exceed 5% and total potato defects (TPOD) which includes UC and external and internal defects, should be less than 15%. UC and TPOD was nil in cvs, Kufri Chipsona-1 and Kufri Chipsona-3 and less than 5% in Kufri Himsona and Kufri Lauvkar (Table). The potatoes were declared

**Table: Processing quality of potatoes stored in heaps for 90 days.**

Parameter	K. Chipsona-1		K. Chipsona-3		K. Lauvkar		K. Himsona
	CIPC	Control	CIPC	Control	CIPC	Control	CIPC
Specific gravity	1.080	1.078	1.091	1.092	1.073	1.075	1.012
Dry matter %	20.0	19.89	22.73	22.86	18.83	19.20	24.51
Undesirable colour	0.0	0.0	0.0	0.0	2.8	4.2	2.5
Total potato defects	0.0	0.0	0.0	0.0	3.6	5.8	2.5
Total weight loss %	10.23	16.02	9.29	14.88	8.28	14.37	14.40
Reducing sugars	19.3	52.8	38.0	97.2	59.9	85.9	102.6
Chip colour	1.75	2.00	1.25	1.75	5.00	5.50	1.50

by the industry as highly acceptable for processing. Our laboratory analysis also showed that reducing sugars decreased and chip colour improved during storage in heaps. Total storage losses in CIPC treated potatoes ranged between 8-10% as compared to 14-16% in control. Treated potatoes remained firm and sprout free whereas untreated (control) potatoes with multiple sprouts appeared shriveled. The CIPC residues were within the acceptable limits.



Condition of tubers after 90 days of storage

Short-term storage of potatoes in heaps with CIPC is thus a viable alternative for the industry to improve upon the processing quality of erstwhile unsuitable potatoes. Improved heap storage technology can beneficially be used to preserve the quality of processing potatoes at lower storage cost (approx. 35 Rs/q)

as compared to 10-12°C storage (100 Rs/q).

- *Ashtu Mehta, TPS Tomar, Brajesh Singh & R Ezekiel*

### Advisory System for Nitrogen Management

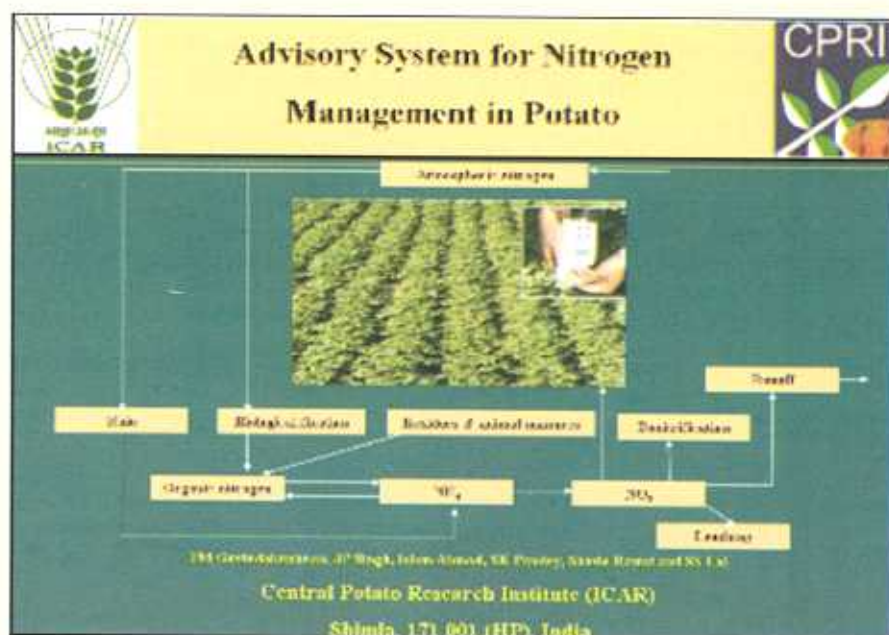
Nitrogen is the first limiting nutrient in potato production. Accurate estimation of its dose to be applied is essential since lower than required dose adversely affects the

yield while higher than the required dose increases the cost and also causes environmental pollution.

The N dose to be applied is determined by the yield level, dry matter content of haulms and tubers, soil N content, the contribution of N by rains and biological N fixation as well as the efficiency of applied N. Thus, determining the situation specific N application rate through field experiments taking into consideration the effects of so many factors is very difficult.

Models quantifying the nitrogen transfer among different components of the nitrogen cycle have been developed. This decision support tool considers the transfer to the crop from labile organic carbon pool, contribution by rains and biological fixation as applicable under good growing conditions *i.e.* low risk of N losses.

The user inputs include expected yield, tuber dry matter content and soil organic carbon content, quantity of



FYM applied *etc.* Default values have been provided and may be replaced by appropriate values as applicable to the location specific situations if available.

- **PM Govindakrishnan and Group**

### CPRI Predicts Record Potato Production this Year

The institute has standardized a methodology for forecasting potato acreage and production through remote sensing, GIS and crop modeling in collaboration with Space Application Centre (ISRO), Ahmedabad. This methodology has been operationalized and the institute has been forecasting the acreage and production for the states of Punjab, Uttar Pradesh, Bihar and West Bengal since last five years. The comparison between the official figures and that forecasted with this methodology has been quite good. This year's (2009-10) forecasts indicate an increase in both acreage and productivity of potato, consequently a quantum jump in production is expected. The production figures for winter potato expected are 1739.2, 11373.1, 1726.0 and 8375.6 thousand tones in Punjab, UP, Bihar and West Bengal, respectively.

- **PM Govindakrishnan and Group**

## Training & Technology Transfer

### Farmers Training at Shimla

Division of Social Sciences organized a three days training course on "Improved techniques for seed potato cultivation" at CPRI, Shimla during 29-31 May, 2010. This training course was attended by 10 farmers & officers duly sponsored by ATMA, Aurangabad. During the training, participants were exposed to a series of theory lectures comprising of diseases & pests management, integrated nutrient management, quality seed production, organic farming, soil & water conservation, post-harvest handling and economics and marketing of potatoes. Besides, field visit to Kufri & Fagu farms were also organized for field exposure to the trainees.

### Farmers' Training at CPRS, Jalandhar

A farmers' training on 'Short-term storage of potatoes in heaps' was organized at CPRS, Jalandhar on 16<sup>th</sup> March, 2010. During the training, live demonstration on tuber treatment with CIPC and storage of potatoes in heaps to about 25-30 farmers from different



Trainees at CPRI

districts of Punjab were given. There has been an overwhelming response from the farmers because of steep fall in potato prices at harvest this year and usefulness of on-farm storage in heaps to avoid market gluts could be a better alternative to the farm families.



Practical training to farmers on CIPC treatment and storage of potatoes in heap

### Live Phone-in-Programmes on Doordarshan

The following scientists participated in Live Phone-in-Programme and gave talk on various topics at Doordarshan, Shimla:

Month	Title/Topic	Name of Expert
JANUARY	Planting of potato in mid hills of Shimla and other districts of Himachal Pradesh Seed Potato Cultivation	Dr. SS Lal & Dr. PM Govindakrishnan Dr. NK Pandey
FEBRUARY	Earthing up and Potato Disease Management in mid hills of Himachal Pradesh	Dr. Sanjeev Sharma Dr. VK Chandla
MARCH	Seed preparation and precaution in planting of seed potato in higher hills of Himachal Pradesh	Dr. Vinod Kumar Dr. Ashwani Kumar
APRIL	Seed preparation and planting of potato in higher hills of Shimla and other districts of Himachal Pradesh	Dr. SS Lal Dr. VK Dua
MAY	Fertilizer and Earthing up of potato in higher hills of Himachal Pradesh	Dr. Manoj Kumar Dr. Mukesh Jatav
JUNE	Disease and pest management in potato	Dr. Sanjeev Sharma Dr. Vinay Sagar

Dr. (Mrs.) Ashiv mehta participated in live interview/discussion programme on 'Storage of potato through new technique' on 2<sup>nd</sup> march, 2010 in the agriculture related programme 'Mera Pind Mere Khet' at Doordarshan, Jalandhar. There has been a good feed-back from the farmers about the improved heap storage technology and many farmers are adopting this technology for short-term storage of potatoes to get remunerative prices.

Dr. RK Arora, Principal Scientist, CPRS, Jalandhar participated in TV programme on 'Patai de Badb Aluan the Samb Sambhal (Taking care of potato after harvest). It was telecasted on DD Punjabi on June 7-8, 2010.

#### Live Phone-in-Programme on AIR, Shimla

Drs. SK Kaushik, Senior Scientist, Sanjeev Sharma, Senior Scientist and SS Lal, Head, Division of Crop Production participated in Live Phone-in-Programme on All India Radio on the topics "Potato varieties in Himachal Pradesh", "Control of disease and pest of potato" and "Fertilizer management and intercultural practices in potato", respectively.

#### Training to Farmers on Bacterial Wilt Management in MP



Training to farmers on management of bacterial wilt and potato tuber moth at Indore.

Malwa region of Madhya Pradesh has emerged as an important area for cultivation of potato for processing industries owing to high dry matter content in tubers produced here and as a result, farmers get good price for their produce. In the recent years, bacterial wilt disease has emerged as a major constraint to potato production in the area and its incidence is on the rise. Since pathogen causing the disease perpetuates both in soil and seed, the cultivation of potato crop in the region is threatened by this disease. The produce affected by the disease is rejected by the processing industries and the farmers suffer huge losses on this account. A collaborative project on "Management of Bacterial Wilt of Potato in Malwa region of Madhya Pradesh" has been taken up jointly by CPRI and PepsiCo. Dr. RK Arora,

Principal Scientist, CPRS, Jalandhar visited Indore, Ujjain and Devas districts in Malwa and addressed large gathering of about 400 farmers on May 6 & 7, 2010 to educate the farmers on how to manage bacterial wilt and grow disease free potatoes suitable for processing. In addition to bacterial wilt, potato tuber moth is also becoming a major problem in the region when potatoes are stored at 10 to 12°C. The farmers were educated on this aspect as well.

#### CPRS Shillong Exhibition

Central Potato Research Station, Shillong participated in the brainstorming session on Technological support to horticulture development in North East on 5<sup>th</sup> January, 2010 at Central Plantation Crops Research Institute Regional Centre, Kahikuchi, Guwahati and put up a stall. DDG (H), Dr. HP



Dr. HP Singh, DDG (Hort) visiting CPRS, Shillong stall at CPCRI regional center, Kahikuchi

Singh along with other dignitaries visited the Institute's stall and appreciated the efforts.

Central Potato Research Station, Shillong also participated in showcasing of Agricultural Technologies under National Agricultural Innovation Project Mobilizing Mass Media Support for Sharing Agri-Information from 19<sup>th</sup>-20<sup>th</sup> March, 2010 at ICAR Research Complex for NEH region, Umiam, Meghalaya and put up a stall.



*CPRS, Shillong stall at ICAR Research Complex Barapani*

### Farmer's Training Programmes at Patna

Four training programmes on various aspects *viz.*, *Potato seed production; Scientific potato cultivation; Late blight management and Processing/ potato chip making* were organized in collaboration with Bihar Agricultural Management and Extension Training Institute (BAMETI) and Agricultural Technology Management Agency (ATMA) at CPRS, Patna on 23-01-10, 30-01-10, 15-02-10 and 26-02-10. A total of 466 farmers of Patna, Katihar, Rohtas, Bhagalpur, Nawada, Buxur, Bhojpur, Purnea, Nalanda, Begusarai, Gaya, E & W. Champaran, Vaishali, Jahanabad, Samastipur and Muzaffarpur districts of Bihar and Koderma district of Jharkhand participated in these programmes. During these training programmes,



*A view of training programme organized for Women of WDC, Patna at CPRS, Patna*

lectures cum live demonstrations on different aspects of potato cultivation *viz.* use of high yielding variety of potato, seed-bed preparation for TPS, plant protection, seed treatment and storage were discussed. Farmers also visited the fields for on-farm operations such as roguing and pesticides sprays.

Besides, four training programmes sponsored by Women development Cooperation, Govt. of Bihar were also organized on potato production utilization and processing on 21-01-10, 25-01-10, 18-02-10 and

20-02-10. Participants were trained on different aspects of potato production and were demonstrated the potato chip making at processing unit of CPRS, Patna. A total of 159 farmers including 97 women from districts of Purnea and Nawada of Bihar participated in these programme.

Under exposure visits, a total of 533 farmers including 177 farmwomen sponsored by State Water Soil Conservation & Training Centre, Ranchi, Jharkhand were trained in potato cultivation and were also given live demonstrations in sorting /grading/ treatment and potato chip making at CPRS Campus on 15-03-10 & 19-03-2010.

### Important Meetings

#### Institute Research Council Meeting 2010 held at CPRI

The Institute Research Council (IRC) Meeting was held at CPRI,



*IRC meeting at CPRI, Shimla*



Shimla on 26<sup>th</sup> June, 2010. It was attended by 40 scientists from the Headquarters, Institute's Campus at Modipuram and regional stations. The basic objective of this meeting was to review the achievements of 2009-10 of different research programmes.

Dr. SS Lal, Secretary, IRC welcomed the participants. After the opening remarks by Dr. SK Pandey, Director, CPRI and Chairman, IRC, all Programme Leaders and participating scientists highlighted the major

CPRI for a period of three years w.e.f. 8<sup>th</sup> June 2010. Dr. KR Dhiman, Vice Chancellor, YS Parmar University of Horticulture and Forestry is the Chairman of RAC and the other members of the RAC include Dr. PS Sirohi (former Head of Vegetable Science, IARI, New Delhi), Dr. H Sivanna (Director of Research, UAS, Bangalore), Dr. (Mrs) S Panigrahy (Director, AFEG, Space Application centre, ISRO, Ahmedabad), Dr. MS Kadian (Regional research scientist

from CIP office, New Delhi), Dr. NM Khare (former Dean, JNKVV, Jabalpur), Dr. BP Singh (Director, CPRI, Shimla), ADG (Hort-II), New Delhi and two non-official members nominated by Hon'ble Agriculture Minister as in Institute Management Committee. Dr. R Ezekiel (CPRI, Shimla) will act as the member secretary of this advisory committee.

## Invited Lectures & Visitors

### DDG visits CPRS, Patna

Dr. HP Singh, Hon'ble, Deputy Director General, Hort. (ICAR) visited the Central Potato Research Station, Patna on 12-2-2010. During his visit, he monitored the research activities undergoing at the station and gave his critical suggestions for the improvements in various ongoing activities.



*Presentation of citation during Ramanujam lecture*

activities and achievements during 2009-10. Thorough discussions were held and various recommendations were made.

Dr. S Ramanujam Memorial Lecture was delivered by Dr. SK Pandey on "Concerns and challenges for potato in India" to the gathering of scientists and research fellows.

### New Research Advisory Committee of CPRI

ICAR has constituted the new Research Advisory Committee for



*DDG visiting Patna station*

## Scientist meet at CPRI, Shimla

Scientist meet is a regular activity of the Institute, where scientists, technical workers and research associates meet to discuss & deliberate on latest emerging R & D issues. Following lectures were delivered & discussed during the last 6 months:

16.3.2010	ARS Probationers	FET seminar
24.3.2010	Dr. A Jeevlatha, VU Patil and R Basavraj, CPRI Shimla	Concept note on application of nanotechnology in Agriculture
22.5.2010	Mr Srinivasa Raju Alluri, CLC Bio India Pvt Ltd	Software for management of new generation sequence data
17.6.2010	Dr. Shubhendu, Tata Chemicals Ltd, Aligarh	R & D initiative in tata chemicals with special reference to customised fertilizer
25.6.2010	Dr. Vinay Bhardwaj	Marker assisted selection for important traits in potato

## Human Resource

### Appointments

Name	Post	Joined on
<b>Scientific</b>		
Dr. Baswaraj R	Scientist, Plant Pathology	15.3.10 after NAARM training
Dr. (Mrs.) Ratna Preeti Kaur	Scientist, Genetics at Jalandhar	22.4.10
Ms. Pinky	Scientist, Plant Physiology at Shimla	28.4.10

Dr. (Mrs.) TC Kumari Sugitha	Scientist, Microbiology at Ooty	5.5.2010
<b>Administrative</b>		
Sh. Chander Prakash	Asstt. Finance & Accounts Officer at Shimla	24.5.2010
Sh. Ashish Dhangar	Asstt. Finance & Accounts Officer at Shimla	28.5.2010

### Promotions

Name	To	Date
<b>Technical</b>		
Sh. Jasvinder Singh, T-5	T-6	19.10.2009
Sh. Alekh Narain, T-2	T-3	11.6.2009
Sh. Prakash Chand, T-2	T-3	6.5.2009
Sh. Narinder Mayar, T-2	T-3	24.9.2009
Sh. NK Budnah, T-2	T-I-3	17.9.2007
Sh. Kehar Singh, T-2	T-3	30.6.2009
Sh. Sushil Singh, T-2	T-3	19.6.2009

### Administrative

Financial upgradation granted to 42 administrative staff under MACP Scheme on different dates. These are: Sh. Amar Singh Negi, Sh. AD Sharma, Sh. Vijay Krishan Dhir, Sh. PC Verma, Sh. Chet Ram Nahata, Sh. Hari Krishan Verma, Smt. Neelam Grover, Sh. Gurjeet Singh, Sh. Sher Singh Thakur, Sh. Sikandari Ishwari, Sh. KC Chopra, Sh. Uttam Singh, Sh. Vijay Kumar, Sh. Jeevan Kumar, Sh. Jeet Ram, Sh. PC Sharma, Sh. NK Sharma, Sh. Dhani Ram, Sh. Roshan Lal, Sh. Tulsi Ram, Sh. Joginder Prasad, Sh. Baldev Raj, Sh. Arjun Singh, Smt. Nirmala Rani, Sh. Jagdish Chand, Sh. Sukhpal Sharma, Sh. Kamaljit Singh, Sh. RK Gupta, Sh. Pawan Kumar, Sh. Hans Raj, Sh. KC

Verma, Sh. Ashwani Gupta, Sh. Tej Singh, Smt. Bimla Salhotra, Smt. Geeta Devi, Smt. Punam Jyoti, Sh. Mohinder Singh, Smt. Sneha Lata, Sh. Sachin Kanwar, Smt. Nirmala Chauhan, Smt. Seema Verma and Sh. Ashok Kumar.

### Supporting

From SS Grade II to T-1: Sh. Ramhet Singh, Sh. Madan Pal and Sh. Sunil Kumar Singh.

From SS Grade II & I to LDC: Sh. Shri Krisan, Sh. Akhilesh Singh, Sh. Kundan Lal and Sh. Padam Chand.

### Retirements

Name	Post	Retired on
Sh. Sampat Singh	T-3, Tractor Driver	31.1.10
Dr. VK Chandla	Principal Scientist, CPRI, Shimla	28.2.10
Sh. Lashkar Singh	T-2, Tractor Driver	28.2.10
Sh. Tara Dutt	T-4, CPRS, Kufri	31.3.10
Sh. Moti Ram	SSG IV, CPRI, Shimla	31.3.10
Dr. SK Pandey	Director, CPRI, Shimla	30.6.10

### Transfers/ Selections

Name	From	To
<b>Scientific</b>		
Dr. S Ramani, Head	CPRS, Shillong	As PC, AICRP on HB & P, Hissar on 26.2.10
Dr. PC Meena, Scientist	CPRIC, Modipuram	NAARM, Hyderabad on 24.4.10
Sh. Chandrasekhar V, Scientist	CPRI, Shimla	CIFR, Kochi on 26.4.10
Dr. Barsati Lal, Sr. Scientist	CPRS, Patna	CISH, Lucknow on 13.5.10
Dr. Dinesh Kumar, Sr. Scientist	CPRIC, Modipuram	As Principal Scientist in DWR, Karnal on 15.6.10
<b>Technical</b>		
Sh. Ajit Singh, T-2	CPRS, Kufri	CPRS, Jalandhar on 26.5.10
Sh. Neem Chand, T-1	CPRS, Jalandhar	CPRI, Shimla on 31.5.10
Sh. Ranjit Singh, T-5	CPRI, Shimla	CSWRI, Avikanagar on 5.6.10
Sh. Mohan Lal, T-1	CPRI, Shimla	CPRS, Kufri on 5.6.10
Sh. Sushil Kumar, T-6	CSSRI, Karnal	CPRI, Shimla on 7.6.10

### Demises

Name	Post	
Smt. Kusumi Devi	SSG II, CPRS, Patna	6.1.10
Sh. Vidhya Ram	SSG I, CPRS, Gwalior	13.2.10

## Honours, Awards & Foreign Visits

### CPRI Scientists bag ICAR Outstanding Team Research Award

The ICAR Award for Outstanding Team Research in Horticultural Sciences is bestowed upon the team led by Dr. JS Minhas for their outstanding contribution in developing India's first heat tolerant early maturing potato variety 'Kufri Surya'. Other members of the team include Drs. Devendra Kumar, TA Joseph, SM Paul Khurana,



SK Pandey, BP Singh, PS Naik and SV Singh. Basic, strategic and applied research carried out by this multi-disciplinary team resulted in generation of valuable knowledge in mechanisms of heat tolerance, screening and breeding methods and heat tolerant genotypes that can be used in future studies. The developed variety is set to ensure sustainability of potato production by extending potato cultivation to peninsular and coastal parts of India; by advancing potato planting to mid September in northern plains; and by its ability to grow under changing climate. This short duration variety fits very well into paddy/cotton-wheat and other cropping systems that are known to enhance food productivity and conserve resources.

Kufri Surya has excellent processing qualities and it is also suitable for making French fries.

By virtue of its ability to tuberize at warmer temperatures, this variety is a timely tool for mitigating the ill effects of global warming on potato production in the country.

### Indian Potato Association Admits New Fellows

Indian Potato Association located at CPRI, Shimla admitted new fellows for 2007 to 2009 during a function organized on 26<sup>th</sup> June 2010. These fellows include:

**Dr. Jai Gopal (2007):** Dr. Jai Gopal is heading the Division of Crop Improvement at CPRI, Shimla. He has worked on the aspects of reproductive biology, genetics, selection of superior parents, *in-vitro* selection and germplasm conservation. He was involved in the development of 10 potato varieties

and has published 63 papers in various national and international journals. I request the president IPA to admit him as the fellow of the Indian Potato Association.

**Dr SK Chakrabarti (2008):** Dr. SK Chakrabarti is heading the Division of Plant Protection at CPRI, Shimla. He is a known biotechnologist and has worked in genetic transformation, development of Bt-transgenic, molecular markers, control of bacterial wilt and is also involved in genome sequencing of potato. He has published more than 50 research papers in journals of repute. I request the president IPA to admit him as the fellow of the Indian Potato Association.

**Dr. R Ezekiel (2009):** Dr. R Ezekiel is heading the Division of Crop Physiology, Biochemistry & Post Harvest Technology at CPRI, Shimla. He has done basic research on photosynthesis, seed physiology,

characterization of starch and storage of potatoes and is well recognized for the development and extension of elevated temperature storage technology using CIPC and on various key aspects of post harvest technology. He has more than 110 research papers to his credit. I request the president IPA to admit him as the fellow of the Indian Potato Association.

**Dr. RK Arora (2009):** Dr. RK Arora is the Principal Scientist in CPRS, Jalandhar. He has contributed significantly to seed potato production, management of late blight and soil & tuber borne diseases of potato. Dr. Arora has 145 research/conference publications including 20 book chapter and comprehensive reviews. I request the president IPA to admit him as the fellow of the Indian Potato Association.

**Dr. SP Singh (2009):** Dr. Surinder Pal Singh is the General Manager of Agronomy in Technico Agri.



Farewell to Dr. SK Pandey

Sciences Ltd. Chandigarh. He has worked in NDDB for improving the quality and production of potatoes, set procurement centres in rural areas to improve farmers income and is managing the quality of seed potatoes in Technico. He introduced the wide bed technology project in UP for enhancing the uniformity and production of potato seed. I request the president IPA to admit him as the fellow of the Indian Potato Association.

The Indian Potato Association also honoured Dr. SK Pandey the President of the association on this occasion for his long services rendered for upliftment of the association. The IPA-Kaushalya Sikka Award certificates were distributed to the awardees of the team selected for this award during this evening.

### CPRS Ooty Wins Prizes

- The First Prize for ‘**The Best Poster Presentation in Applied Research**’ was received for the Poster presented by Dr. R Umamaheswari, Dr. N Somasekhar and Dr. TA Joseph for their research paper on ‘Effect of organic amendments on potato cyst nematodes *Globodera rostochiensis* and *G. pallida* infesting potato’ during the National Conference on Innovations in Nematological Research for Agricultural Sustainability – Challenges and a Roadmap Ahead’ held at Tamil Nadu Agricultural University, Coimbatore from 23<sup>rd</sup>-25<sup>th</sup> February, 2010.
- The **Second Prize with a Certificate and a Cup** was awarded to CPRS, Muthorai

for implementation of Hindi as Official language in the office, received from the General Manager, Cordite Factory, Aruvankadu and Chairman, Town Official Language Implementation Committee (TOLIC) Ooty-Coonoor, during the TOLIC Meeting held at Aruvankadu on 2<sup>nd</sup> February, 2010.

### Foreign Visits

1. Dr. Vinay Bhardwaj, Sr. Scientist, Central Potato Research Institute, Shimla participated in International Training on “Marker Assisted Selection (MAS) in Max Planck Institute for Plant Breeding, Germany w.e.f 09th February – 09th May, 2010 .
2. Dr. Shashi Rawat, Sr. Scientist, Central Potato Research Institute, Shimla participated in International Training in the area of “Bio-informatics (Horticulture)” in the Lab. of Dr. Christian Bachem/ Dr. Roeland van Ham, Laboratory of Bioinformatics, Plant Research International, Bio Sciences, Wageningen University, Wageningen, The Netherlands from 1st March, 2010 to 31st May, 2010.
3. Dr. Vijay Kumar Dua, Sr. Scientist, Central Potato Research Institute, Shimla participated in International Training in the area of “Carbon Trading/Carbon Sequestration/ Climate Change” in the Lab. of Dr. Joost Wolf, Group Plant Production Systems, Wageningen University, The Netherlands from 26 February, 2010 to 26 May, 2010.

4. Dr. Jagesh Kumar, Scientist Central Potato Research Institute, Shimla, for undergoing training in the area of “Marker Assisted Selection” at International Potato Center, Lima- Peru from 7<sup>th</sup> June to 4th September 2010.
5. Dr. SK Chakrabarti, Head, Division of Plant Protection, Central Potato Research Institute, Shimla, participated in “Agribusiness Management Programme Course” 2010 to be held in Ithaca New York, USA from 21-29 June, 2010.
6. Dr. Vinod Kumar, Sr. Scientist participated in International Training in Plant Variety Protection and DUS Testing for Indian Experts at the National Institute of Agricultural Botany (NIAB), Cambridge, U.K., from 28<sup>th</sup> June 2010 to 09<sup>th</sup> July, 2010.

### Future Activities

#### RAC and IRC Meetings at Shimla

The Research Advisory Committee and The second Institute Research Council meeting of the Institute is being planned in the month of September 2010 from 21<sup>st</sup> to 25<sup>th</sup>. These meetings shall provide the guidelines for the research activities under different programmes of the Institute. All the on-going programmes of the Institute have come to an end in March 2010 and the new programmes are to be formulated based on the

presentations of scientists during these two meetings.

### AICRP on Potato Workshop

A workshop of All India Co-ordinated Research Project on Potato is being planned during 11<sup>th</sup> to 13<sup>th</sup> September 2010 at CPRI, Shimla and all the research workers at various centres of AICRP shall be presenting their research activities in this workshop for review of their work.

### Division-wise meetings for finalizing the new research programmes

To formulate the new research programmes in the Institute, division-wise meetings have been planned to be held before the scheduled RAC and IRC meetings. All the scientists shall formulate their projects and present this in their divisional meetings for finalization of the programmes. The dates and venues of these meetings as follow:

Seed Technology	18-20 Aug 10	CPRS, Jalandhar
Social Science	23-24 Aug 10	CPRI, Shimla
CPB & PHT	27-28 Aug 10	CPRI, Shimla
Crop Production	1-3 Sept 10	CPRIC, Modipuram
Plant Protection	6-8 Sept 10	CPRI, Shimla
Crop Improvement	15-17 Sept 10	CPRI, Shimla

## International Potato Events

Following international potato events are planned to be held during the next six months:

**United States:** 94<sup>th</sup> Annual Meeting of the Potato Association of America during August 15 - 19, 2010.

**Germany:** PotatoEurope 2010 during September 8 - 9, 2010.

**Belgium:** INTERPOM PRIMEURS 2010 during November 28 - 30, 2010.

**South Africa:** 8<sup>th</sup> Annual African Potato Association Conference during December 5 - 9, 2010.

Source: Internet

## Articles on Potato

### Aeroponics- A Soilless Method of Potato Seed Production

**Aeroponics** is the process of growing plants in an air-mist environment without the use of soil or an aggregate medium. The basic principle of aeroponics is to grow plants in a closed or semi-closed environment by spraying the roots with a nutrient rich solution.

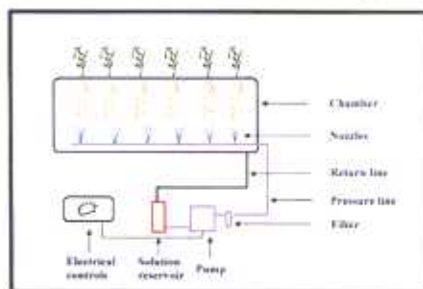
Availability of quality planting material has always been a limitation in vegetatively propagated crops. In India, potato was first amongst all

seed production was established way back in 1968. The system was based on tuber indexing for detection and elimination of all the prevalent potato viruses in the country followed by clonal multiplication in four successive generations. Though, this system is robust, but it has two inherent problems *viz.*, slow multiplication rate and higher field exposure, thereby increasing the chances of viral infection. Keeping this in view a tissue culture based system of quality seed production was perfected and up scaled by CPRI. In this system *in-vitro* plantlets/microtubers are planted under insect proof conditions for producing minitubers. The rate of multiplication, however, is low ranging from 8-10 times. Consequently, large number of *in-vitro* plantlets under net house would be required to meet the breeder seed requirements. On the other hand, the efficiency of aeroponics system is three to four times higher than the normal tissue culture-based system. If perfected and up scaled, it will drastically reduce the requirement of *in-vitro* plantlets and the net house space, both of which are exceedingly expensive.

Since the aeroponics technology is patented and not easily accessible, CPRI Campus, Modipuram undertook the studies on developing all its components with support from CIP, Lima, Peru.

An aeroponic prototype was designed, constructed and tested by using three varieties *viz.*, Kufri Bahar, Kufri Surya and Kufri Chipsona-3 under net house conditions. This prototype consists of an electrical unit, two light

the vegetatively propagated crops where indigenous system of quality



Schematic of aeroponics



*Crop in aeroponics*



*Minitubers in growth chamber*



*Harvest of aeroponics*

proof growth chambers, a nutrient solution chamber, a high pressure pump, a filter and spray nozzles. All the essential nutrient elements required for plant growth were dissolved in water in the solution chamber and solution pH was maintained at the desired level throughout the crop period. This nutrient solution was compressed through the nozzles by high

pressure pump, forming a fine mist in growth chambers. At the roof of the growth chambers *in-vitro* propagated and hardened plantlets were planted in 20 mm diameter holes. Pump was automatically operated for 10-30 seconds after every 10-30 minutes interval with electronic timer and conductor. This way growth chambers were maintained at 100 percent relative

humidity by misting nutrient solution round the clock. After one week root system started developing inside the growth chambers. Like in soil system, stolon and tuber formation was initiated at different intervals depending upon variety. Picking of tubers was started after 60-65 days when some of the tubers attained 15-17 mm dia. Once the first flush was harvested, formation of additional number of tubers was triggered resulting into more number of minitubers/plant. In this system harvesting was done after every two weeks and in total 4 flushes was taken. On an average 30-35 minitubers were harvested from a single plant as against 8-10 minituber under net house conditions.

### **Advantages**

- Three-four times more number of minitubers per plant as compared to traditional system
- Soilless cultivation, less exposure to unfavorable soil conditions and freedom from diseases and pests

- Reduced cost of production of minitubers through savings on *in-vitro* plantlets and net house space.

- Sukhwinder Singh, Vinay Singh, BP Singh and SK Pandey

### Spread of Bacterial Wilt and Brown Rot of Potato in Indore Region of Madhya Pradesh

In India, bacterial wilt of potato was first reported from Pune district (Maharashtra) in 1891 by Cappel. It is a serious potato disease and is found in most of the potato growing countries. The disease has been reported both from hills and plains of most of the States in our country. In Madhya Pradesh, the disease was observed in Jabalpur and Indore in late 70's but was not alarming till recent past. In 2007, potato crop showed wilting symptoms in severe form in Indore district. The plants wilted even though sufficient moisture was there in the fields. Lower leaves turned yellow-brown and then died. Tubers from these plants showed greyish brown areas. In late stage, slimy whitish exudate was seen on eyes. Cut halves of tuber showed slight discolouration of vascular ring and droplets of exudate. Later on discolouration became dark brown to black. Large number of samples from suspected wilted plants was collected. Samples were studied by Ooze test of cut stem piece in water, ooze test from vascular bundles of cut tubers, potassium hydroxide bio-chemical test and isolation on culture media.



Potato crop with bacterial wilt

Studies revealed that the bacterial wilt was there in Alwasagaon, Mhow and Umrikheda (Indore district) while in most of the other villages it was absent. In some of the other villages *viz.*, Palia, Datoda, Bijalpur, Panchderia and Kshiprakheda, mild incidence of wilt was observed but it was found to be due to *Rhizoctonia solani* and *Fusarium* spp. In Bardari, Simrol, Depal Road, Mirjapur and Budibarlai villages, no wilt was found. Since the disease was not observed in the region for the last 25 years, the farmers were not aware of it. They sprayed several fungicides, antibiotics, insecticides and drenched their fields with pesticides as suggested by representatives from pesticide companies, pesticide dealers, agriculture extension workers and even experts from agriculture college/agriculture institute, but this did not help. Potato growers of this region call it "Aansu rog" (Tear disease) based on the exudates from eyes of infected tubers.



Potato tubers with brown rot

In Madhya Pradesh, area under potato cultivation was 45,549 hectare, production 5,70,546 tonnes and productivity 12.52 tonnes per hectare during 2007-08 which was slightly less than previous years (13.10t.), probably due to bacterial wilt and brown rot incidence. Indore ranked first in area and production followed by Dewas, Shajapur, Chhindwara and Ujjain districts in the Malwa region. Indore being in Agricultural Export Zone, potato is a very important crop for the farmers of the region. However, very little quantity is being exported to Middle East countries. Also, there are about 300 potato processing units in the region and about 70% requirement of potato processing units in the country is met from Malwa region alone. Therefore, the farmers in Malwa region grow potatoes mainly for processing purpose and the common varieties are Kufri Jyoti, Kufri Lauvkar, Kufri Chandramukhi, "Lal Lauvkar" and Kufri Chipsona-1. Each year, several potato growers procure seed from progressive potato growers of Punjab, a few take breeder seed from Central Potato Research Station, Gwalior and multiply them for years. Others procure it locally from progressive farmers of Malwa region itself.



Potato tuber cut halves showing discolouration and droplets in vascular ring



During 2007, in Alwasagaon, wilt incidence was reported to be 25 to 30% and in some fields upto 50% in 23.3 ha area planted with cultivars Kufri Lauvkar, Lady Rossetta and Kufri Chipsona-1, when the growers had used their own seed. At the same time, wilt incidence was nil in adjacent crop in the same field with fresh seed from Punjab. However, in a field of 4.0 ha, wilt incidence ranged from 75 to 100%. In Malwa and Umrikheda, the incidence ranged from 5 to 20% in potato cvs Kufri Jyoti, Kufri Lauvkar and Kufri Chipsona-1. In Umrikheda village, nematodes were also there in the soil of infested fields. Nematodes are known to injure the roots and help the bacteria in infecting the roots from injured sites.

During 2008, in Alwasagaon, the farmers had followed some of the suggested management practices (described below) and it resulted in good control of the disease incidence.

- Procured and used the whole seed from bacterial wilt free area and did not use their own seed from bacterial wilt infected fields or cut tubers as seed.
- Soil application of stable bleaching powder along with fertilizers @ 12kg/ha at the time of planting.
- During summer (April to June) infested fields were kept fallow, irrigated, deep ploughed and left exposed to sun. The fields were also drenched with 2% Formalin solution.

Bacterial wilt and brown rot incidence was not observed in most of the fields following above treatment



*Comparison of potato crop with and without bacterial wilt*

except in 1.5 ha of Kufri Chipsona-1 crop with 1-2% incidence, where grower had used his own seed as compared to 30 to 100% incidence observed in previous season. Similarly in Umrikheda, only a few plants were found to be infected with bacterial wilt though here also the farmers had used their own seed. However, the disease has spread in new areas viz., Datoda village where 1.0 to 5.0% bacterial wilt incidence was recorded with own seed planting in Kufri Chipsona-1 and Kufri Lauvkar crops over an area of 4.0 ha. In Bhagora village, disease incidence ranged from 5 to 10% or even more in own seed planted crop of Kufri Jyoti, Kufri Lauvkar, Kufri Chipsona-1 and Atlantic over an area of 25.0 ha. In 3 fields with seed from Punjab, the incidence was negligible.

This is certainly an alarming situation for potato crop in the area, since this area has its own importance in growing processing potatoes. Therefore, it is suggested that potato growers must follow some of the undergiven measures to curtail on disease spread to more areas and

further improve the management level against bacterial wilt and brown rot;

- (i) Soil solarization alongwith hot weather cultivation and soil drenching with 2% formalin solution, the deep ploughed fields should be covered with thick transparent polythene sheet.
- (ii) Two to three years' crop rotation with potato-wheat (or bajra, maize, millets, onion, garlic)-sanai green manure-wheat-green manure-potato.
- (iii) Blind earthing up and minimum field operations to avoid root, stolon or stem injury.
- (iv) Irrigation water and implements should not pass through infested fields to healthy fields or infected crops to healthy crops.
- (v) Procurement of potato seed from certified agencies and reliable sources only.

*-AK Somaní, SK Chakrabarti and SK Pandey*

## हिन्दी समाचार

### किसान दिवस—एक रिपोर्ट

केन्द्रीय आलू अनुसंधान केन्द्र, ग्वालियर में कृषक दिवस का आयोजन दिनांक 15.01.2010 को किया गया। समारोह के मुख्य अतिथि प्रोफेसर विजय सिंह तोमर, कुलपति, राजमाता विजयराजे सिंधिया कृषि विश्वविद्यालय, ग्वालियर थे। उन्होंने अपने उदबोधन भाषण में कहा कि इस प्रदेश का ग्वालियर चम्बल संभाग बीज के लिए उपयुक्त होने के बावजूद यहाँ पर किसान आलू बीज उत्पादन नहीं कर रहे हैं। आज प्रसंस्करण तकनीक में काफी सुधार आया है और किसान अपने उत्पादन का लाभकारी मूल्य तभी प्राप्त कर सकता है जब वह उत्पादन के साथ-साथ प्रसंस्करण में भी भागीदार बने। अभी मध्य प्रदेश में आलू के कुल उत्पादन का केवल 3 प्रतिशत ही प्रसंस्कृत होता है। कुलपति महोदय ने यह आग्रह भी किया कि मध्य प्रदेश में ग्वालियर के अतिरिक्त और भी अनुसंधान केन्द्र होने चाहिए।

कार्यक्रम के अध्यक्ष डॉ सुमन कुमार पाण्डेय, निदेशक, केन्द्रीय आलू अनुसंधान संस्थान, शिमला ने अपने उदबोधन भाषण में आलू के महत्व व किसानों तक तकनीक पहुंचाने पर जोर दिया। उन्होंने बताया कि बढ़ती जनसंख्या का पेट भरने के लिए सन् 2020 तक खाद्यान्न द्वारा आपूर्ति हो पाना सम्भव नहीं लग रहा है। जबकि यदि आलू का क्षेत्र व उत्पादकता में वृद्धि की जाय तो बढ़ती खाद्यान्नों की कमी आपूर्ति आलू से सुनिश्चित की जा सकती है। यहां प्रसंस्करण के लिए पूरे देश में सर्वोत्तम आलू पैदा किया जा सकता है। यहां पैदा किये गए आलू में अन्य प्रदेशों की तुलना में शुष्क पदार्थ अधिक होता है जो प्रसंस्करण के लिए अति उपयोगी है। निदेशक महोदय ने बताया कि इस केन्द्र पर उत्पादित बीज की गुणवत्ता बहुत अच्छी है।

केन्द्राध्यक्ष डा. अशोक कुमार सोमानी ने केन्द्र की स्थापना, उद्देश्य, संरचना, केन्द्र पर उपलब्ध सुविधाएँ, केन्द्र की उपलब्धियाँ, केन्द्र पर वैज्ञानिकों की कमी, अनुसंधान परियोजनाएँ, बीज उत्पादन एवं मध्य प्रदेश सहित अन्य राज्यों को आपूर्ति जो कि लगभग 3000-5000 कुन्तल तक प्रति वर्ष की जाती है आदि के बारे में विस्तृत जानकारी दी।



किसान दिवस में भी भागीदार कृषक

उपरोक्त कार्यक्रम में तकनीकी सत्र में डा. सत्य वीर सिंह, प्रधान वैज्ञानिक, केन्द्रीय आलू अनुसंधान संस्थान परिसर, मोदीपुरम, मेरठ ने आलू की प्रजातियाँ एवं आलू बीज उत्पादन तकनीक विषय पर किसानों को जानकारी दी जिसमें उन्होंने बताया कि इस क्षेत्र के लिए कुफरी सूर्या अच्छी प्रजाति है साथ ही उन्होंने प्रसंस्करण हेतु उपयुक्त प्रजातियों कुफरी चिप्सोना-1, कुफरी चिप्सोना-2, कुफरी चिप्सोना-3 के बारे में पूर्ण जानकारी दी। डॉ शिवप्रताप सिंह, वरिष्ठ वैज्ञानिक, केन्द्रीय आलू अनुसंधान केन्द्र, ग्वालियर ने भोज्य आलू उत्पादन की तकनीक के अन्तर्गत आलू की बुआई, उर्वरकों के उपयोग, खरपतवार नियन्त्रण आदि के बारे में विस्तृत जानकारी दी। डा. अशोक कुमार सोमानी ने आलू की विभिन्न

### केन्द्रीय आलू अनुसंधान केन्द्र केन्द्रीय आलू अनुसंधान संस्थान ग्वालियर (म.प्र.)

## किसान दिवस एवं विचार 15 जनवरी 2010



मुख्य अतिथि का भाषण

बीमारियों, उनकी पहचान, उनसे होने वाले नुकसान एवं उनके निदान आदि के बारे में विस्तृत जानकारी प्रदान की। डॉ. अनुज भटनागर, वरिष्ठ वैज्ञानिक ने आलू फसल में आने वाले विभिन्न कीटों, उनकी पहचान तथा उनके नियन्त्रण के बारे में कृषकों को जानकारी दी। डा. वीर सिंह कुशवाह, सेवा निवृत्त अध्यक्ष ने कृषकों को खेती में किन-किन विशेष बातों का ध्यान रखना चाहिए के बारे में विस्तृत जानकारी दी। डा. मुरलीधर जगन्नाथ सदावर्ती, वैज्ञानिक ने आलू उत्पादन के बाद उसके उचित भण्डारण, ग्रेडिंग आदि के बारे में विस्तृत जानकारी दी।

तकनीकी सत्र के बाद किसानों की जिज्ञासाओं का निदान किया गया।

— अशोक कुमार सोमानी

## हिन्दी में एकरूपता

कम्प्यूटर पर हिन्दी में काम करने में आने वाली समस्याओं से निपटने के लिए भारत सरकार के सूचना प्रौद्योगिकी विभाग द्वारा फोन्ट्स के लिए यूनिकोड इनकोडिंग को मान्यता दी गई। संस्थान में उपलब्ध अधिकांश कम्प्यूटर विंडोज-2000 आपरेटिंग सिस्टम या बाद के वर्जन हैं। अतः इन कम्प्यूटरों पर हिन्दी का कार्य किसी भी यूनिकोड समर्पित फोन्ट्स में किया जा सकता है। मुख्यालय के कई कम्प्यूटरों पर यह फोन्ट्स उपलब्ध करवा दिए गए हैं। इस विषय की जानकारी देने के लिए संस्थान के राजभाषा अनुभाग द्वारा मई, 2010 में एक संक्षिप्त कार्यशाला का आयोजन किया गया, जिसमें भारतीय स्टेट बैंक की उपप्रबन्धक (राजभाषा) सुश्री स्मिति ने प्रतिभागियों को यूनिकोड समर्पित

फोन्ट्स की जानकारी दी। दिलचस्प बात है कि कम्प्यूटर पर इन फोन्ट्स को डालने के बाद कम्प्यूटर पर एक ही समय में हिन्दी अथवा अंग्रेजी में एक साथ काम किया जा सकता है। इसके लिए हिन्दी टाइपिंग का ज्ञान न रखने वाला व्यक्ति रोमन की-बोर्ड का इस्तेमाल करते हुए हिन्दी की टाइपिंग कर सकते हैं।

## राजभाषा समारोह

केन्द्रीय आलू अनुसंधान संस्थान एवं नराकास, शिमला के संयुक्त प्रयासों से संस्थान के परिसर में राजभाषा समारोह का आयोजन बड़ी धूमधाम से किया गया। उल्लेखनीय है कि शिमला स्थित केन्द्रीय सरकार के कार्यालयों, उपक्रमों, निगमों एवं बैंकों की नगर राजभाषा कार्यान्वयन समिति हर वर्ष अपना वार्षिक राजभाषा समारोह आयोजित करती है। इस आयोजन में सालभर की राजभाषा गतिविधियों का ब्योरा प्रस्तुत किया जाता है। इसके साथ ही हिन्दी में उल्लेखनीय कार्य करने वाले कार्यालयों को सम्मानित करने के अतिरिक्त विभिन्न प्रतियोगिताओं के विजेताओं को पुरस्कार वितरित किए जाते हैं।

29 जनवरी, 2010 को आयोजित इस समारोह में हिमाचल प्रदेश के पूर्व मुख्य आयुक्त आयुक्त श्री एम.पी. सिंह मुख्य अतिथि तथा वर्तमान मुख्य आयुक्त आयुक्त श्री एल. आर. नय्यर ने कार्यक्रम की अध्यक्षता की। कार्यक्रम का शुभारम्भ दीप प्रज्ज्वलन के साथ हुआ। सर्वप्रथम संस्थान के निदेशक डा. समुन कुमार पाण्डेय ने सभी उपस्थित जन समूह का स्वागत करते हुए उन्हें संस्थान की गतिविधियों और उपलब्धियों की जानकारी दी। उन्होंने कहा कि यह हमारा

सौभाग्य है कि राजभाषा के प्रचार-प्रसार में हमारे संस्थान को आहुति डालने का अवसर मिला। उनका कहना था कि इस प्रकार की गतिविधियों में संस्थान का योगदान हमेशा से ही रहा है और आगे भी रहेगा। इस अवसर पर संस्थान के निदेशक डा. सुमान कुमार पाण्डेय तथा सहायक निदेशक (राजभाषा) श्री प्रवीन चांदला को उनके विशेष सहयोग के लिए स्मृति चिन्ह भेंट किए गए। पुरस्कार विजेताओं में इस संस्थान की श्रीमती पूनम सूद, श्री चन्द्र मोहन सिंह बिष्ट एवं सुश्री गरिमा तोमर भी शामिल थीं।

इस अवसर पर नराकास की वार्षिक पत्रिका यात्राश का विमोचन भी किया गया। गीत एवं नाटक प्रभाग एवं दूरदर्शन शिमला से आए कलाकारों ने अपने गीत, संगीत व नृत्य कार्यक्रमों के माध्यम से माहौल को संगीतमय बना दिया।

मुख्य अतिथि एवं अध्यक्ष महोदय ने अभिभाषणों में जनसमूह का आह्वान करते हुए कहा कि भारत सरकार द्वारा निर्धारित लक्ष्यों के अनुरूप हमें अपने-अपने कार्यालयों में राजभाषा के प्रयोग को बढ़ाने की दृष्टि से मिल-जुलकर कार्य करना होगा ताकि हम राजभाषा को उसकी गरिमा के अनुसार उचित स्थान दे सकें। राष्ट्रगान के साथ कार्यक्रम का समापन हुआ।

## संस्थान की आई.जे.एस.सी की बैठक

केन्द्रीय आलू अनुसंधान संस्थान, शिमला के निदेशक व आई.जे.एस.सी. के अध्यक्ष डा. सुमान कुमार पाण्डेय की अध्यक्षता में केन्द्रीय आलू अनुसंधान संस्थान, शिमला में 14 जून, 2010 को आई.जे.एस.सी. की पांचवी

बैठक का आयोजन किया गया। बैठक में श्री राज कुमार चौहान, डा. विनोद कुमार, श्री अनिल कुमार सिंह, श्री रोशन लाल चौहान, श्री रोशन लाल, श्री तारा चन्द व श्री हीरा नन्द शर्मा शामिल थे। इस बैठक के दौरान कर्मचारियों से संबंधित मुद्दों पर बातचीत की गई।

### बेस्ट वर्कर अवार्ड

संस्थान के कर्मचारियों को प्रोत्साहित करने के उद्देश्य से हर वर्ष अलग-अलग श्रेणियों से सर्वश्रेष्ठ कर्मचारी (बेस्ट वर्कर) का चयन किया जाता है। इस प्रकार वर्षों के अन्तराल पर उस श्रेणी से सर्वश्रेष्ठ कर्मचारी को अवार्ड देकर सम्मानित किया जाता है। इस कड़ी में इस वर्ष प्रशासनिक वर्ग से वर्ष 2006 के लिए सर्वश्रेष्ठ कर्मचारी के रूप में श्री जोगिन्द्र सिंह ठाकुर का चयन किया गया। श्री ठाकुर को यह अवार्ड योजना के दस्तावेजों, संस्थान की वार्षिक वैज्ञानिक रिपोर्ट, प्रकाशन, सूचना का अधिकार अधिनियम व प्रशिक्षण से संबंधित मामलों के संकलन में उनके योगदान के लिए प्रदान किया गया। उल्लेखनीय है कि इस अवार्ड के अन्तर्गत कर्मचारी

को पांच हजार रुपये की नकद राशि के साथ-साथ प्रशस्ति पत्र प्रदान किया जाता है। गणतन्त्र दिवस के अवसर पर श्री ठाकुर को यह अवार्ड प्रदान किया गया। श्री जोगिन्द्र सिंह ठाकुर को हार्दिक बधाई। विगत वर्षों के दौरान यह अवार्ड श्री गुरदेव सिंह (तकनीकी वर्ग), श्री रूपू एवं श्री मदन लाल को संयुक्त रूप से तथा श्री छोटे लाल आदि कुशल सहायोगी स्टाफ को दिया जा चुका है।

### डा. एस के पाण्डेय का विदाई समारोह

दिनांक 30 जून 2010 को डा. एस. के. पाण्डेय, निदेशक केंद्रीय आलू अनुसंधान संस्थान, शिमला, 39 वर्षों की सेवाओं के पश्चात सेवानिवृत्त हो गये। इस अवसर पर कर्मचारी कल्याण



डा. पाण्डेय का विदाई समारोह

संघ की ओर से विदाई समारोह का आयोजन किया गया।

इस समारोह में संस्थान के नये निदेशक डा. बीर पाल सिंह भी उपस्थित थे। उन्होंने कर्मचारी कल्याण संघ की तरफ से डा. पाण्डेय को उनके अच्छे कार्यों के लिए बधाई दी और उनकी स्वस्थ और लम्बी आयु की कामना की।

समारोह में समस्त अधिकारी व कर्मचारी वर्ग ने भाग लिया। कर्मचारी कल्याण संघ के सचिव नरेश कुमार ने भी डा. पाण्डेय को समस्त कर्मचारियों की ओर से शुभ-कामनाएं भेंट की।

*Printed:*

June 2010 (500 copies)

*Editorial Committee :* Brajesh Singh, Sanjeev Sharma and VU Patil

*Secretarial Assistance:* JS Thakur and Sachin Kanwar

*Photographs:* BS Latwal

*Published by:*

**Dr. BP Singh**

**Director, Central Potato Research Institute**

Shimla-171 001, Himachal Pradesh, India

Phone: 0177-2625073, Fax: 177-2624460 E-mail: [dirpri@sancharnet.in](mailto:dirpri@sancharnet.in)

*Printed at:*

Malhotra Publishing House, B-6, DSIDC Complex, Kirti Nagar, New Delhi. E-mail: [mph@vsnl.com](mailto:mph@vsnl.com)