Dear Readers,

After green revolution Punjab agriculture has contributed tremendously in terms of food grain production and the state has earned the name of ‘Food Basket of India’. Now the scientists and policy makers are of the opinion that there is a need of second green revaluation for food security of tremendously escalating human population. However, the second green revolution necessitates the need of dissemination and adoption of innovative technologies associated with resource conservation, precision farming, integrated nutrient, pest and weed management, protected vegetable cultivation coupled with biotechnological interventions. The technology transfer component in Roop Nagar District has also been taken very effectively by Krishi Vigyan Kendra-Roop Nagar established by Punjab Agricultural University, Ludhiana. However, there is further need to update the knowledge of extension personnel, farmer’s, farm women and rural youth of the district to make agriculture as profitable venture. Krishi Vigyan Kendra-Roop Nagar has made sincere efforts for the upliftment of the farming community through different extension activities viz. trainings, demonstrations, on-farm trials (OFTs), front line demonstration (FLDs) etc.. This news letter depicts the mirror image of all the extension activities taken up by Krishi Vigyan Kendra-Roop Nagar during the last six months and I wish the team of subject matter specialists a very good luck for their future endeavors.

Prof. S.P. Saini
Associate Director (Training)
Krishi Vigyan Kendra-Roop Nagar

Scientific Advisory Committee (SAC) Meeting

Scientific advisory committee (SAC) meeting the major biannual venture of Krishi Vigyan Kendra (KVK)-Roop Nagar was organized, on May 18th, 2011 under the Chairmanship of Dr. M S. Gill, Director of Extension Education, Punjab Agricultural University-Ludhiana. Thirty six members of Scientific Advisory Committee including district heads/directors of Agriculture allied departments viz. Agriculture, Horticulture, Soil and Water Conservation, Punjab Dairy Development Board, Regional Station (Kandi Area, Ballowal Saunkhi), Animal Husbandry, NABARD, District Employment Officer, Lead Bank, Child Development and Project Officer, Cooperative Society, National Fertilizer Limited (NFL), IFFCO, Markfed, Farm Advisory Service Scheme (FASS) and progressive farmers and farm women graced the occasion. During the occasion, Associate Director (Training), Dr. S.P Saini presented the Six Monthly Progress Report (Rabi 2010-11) on different extension activities carried out by KVK-Roop Nagar in the district. He presented that KVK-Roop Nagar had conducted 7 different on-farm trails (OFTs) on resource conservation, nutrient management, IPM, dairy science and fruit and vegetable cultivation etc. He also presented the detailed training programme conducted successfully during the period under report for farmers, farm women, rural youth and extension functionaries. The seed production programme for the proceeding kharif-2011 was also presented for the kind approval of the committee.

Dr. S.P Saini, Associate Director (T) and member secretary while sharing the Action Plan (kharif-2011), explained that KVK had planned to organize about 75 short duration, 14 vocational and 13 in-service training courses for farmer’s, farm women, rural youth and extension functionaries of the district. He proposed that OFTs on 6 different production and protection technologies and 15 front line demonstrations (FLDs) on oilseed and pulse crops, and 15 FLDs on crops other than oilseed and pulses will also be conducted according to area specific situations.

Chairman of the meeting, Dr. M.S. Gill, Director of Extension Education-P.A.U., Ludhiana while addressing the meeting stressed on the need of promoting resource conservation technologies viz. use of leaf color chart in maize and paddy, tensiometer in paddy, laser land leveling, direct seeding of rice and bed sowing of field crops. He also requested the members of the SAC meeting to make collaborative effort to control ‘Yellow Rust’ disease of wheat that has become the major culprit in wheat production especially in sub-montaneous region.
During the last six months, Krishi Vigyan Kendra-Roop Nagar had organized 7 exhibitions of various agricultural extension activities through models and demonstration material during different programmes viz: P.A.U. Kisan Melas (at Regional Station, Kandi Area, Ballowal Saunkhri, PAU Ludhiana), District Level Farmers Training Camps (at Roop Nagar and S.A.S. Nagar-Mohali), Field Days, SAC Meeting, Sponsored Training Programmes etc. These exhibitions successfully aroused the curiosity of the participants towards the live plant samples depicting nutrient deficiencies, insect-pest attack, disease infestation, models, exhibits, blow-ups and charts on different innovative technologies generated by P.A.U.-Ludhiana for the state farmers. The exhibitions focused primarily on different resource conservation technologies generated by P.A.U. and on aspects related to protected vegetable cultivation, dairy farming and women empowerment.

VIP VISITS

Krishi Vigyan Kendra had the kind privilege of having visits of various dignitaries during the last six months. Hon’ble Agriculture Minister, Government of Punjab, Sh. Sucha Singh Langah visited the exhibition conducted by KVK-Roop Nagar during District Level farmers Training Camp at Ambedker Bhawan, Roop Nagar. During the occasion Additional Deputy Commissioner, Roop Nagar also visited the exhibition conducted by KVK-Roop Nagar and interacted with the subject matter specialist’s regarding the potential of protected vegetable cultivation. He also discussed with the Associate Director (Training), Dr. S. P Saini regarding training schedule of KVK-Roop Nagar and activities planned by KVK for efficient management of natural resources. Dr. Nirankar Singh, Joint Director (Agriculture), Department of Agriculture, Government of Punjab and Dr. Harmanjit Singh Sandhu, Chief Agriculture Officer (CAO), SAS-Nagar, Mohali also visited the exhibition conducted by KVK-Roop Nagar at Community Centre, Phase-7, SAS-Nagar, Mohali during District Level Farmers Training Camp. Monitoring visits for assessing technology being tested through On-farm Trials (OFTs), Front Line Demonstrations (FLDs) and seed production programme of KVK was also performed by Dr. Surjit Singh, Dr. J. S Kular and Dr. J.S Chawla. Krishi Vigyan Kendra-Roop Nagar has also being visited by Dr. B.S. Sohal, CAO-Roop Nagar during SAC Meeting for finalizing of training schedule of KVK-Roop Nagar.
TRAINING COURSES ORGANIZED

The training schedule finalized during last SAC meeting of KVK-Roop Nagar was implemented as such during the period under report. The training needs of the farming community of Roop Nagar district, were catered by organizing 60 training courses related to different specialized disciplines during the last six months. The training courses include 48 short duration, 6 long duration and 6 in-service training courses for farmers, farm women, rural youth and extension functionaries to improve their technical skill and to enrich their knowledge regarding different scientific aspects. Additionally, 3 training courses were also organized to encourage the cultivation of Zero-till sowing of Summer Moong and Summer Mash for crop diversification under Front Line Demonstration, Scheme on Oilseed and Pulse crops.

VOCATIONAL TRAINING COURSES

Krishi Vigyan Kendra-Roop Nagar have conducted 6 vocational training courses on different aspects. Ten days training course on honey bee keeping was organized for rural youth of Roop Nagar during January-2011. The participants were practically involved for different processes involved in honey extraction, during the training course. During February-2011, ten days training course on Mushroom production was organized. Vocational training on dairy farming was also organized at Krishi Vigyan Kendra-Roop Nagar for rural youth of the district. During the training, the participants were given training on clean milk production, role of mineral nutrition in animal health, role of uromin lick and management of dairy animals during summer and winter season. The participants were also trained for the preparation of Uromin lick. A vocational training on cutting and stitching of garments, preservation of fruits and vegetables (value addition) were also organized for farm women and school drop-out girls of the district.

SOIL AND IRRIGATION WATER TESTING LABORATORY

Krishi Vigyan Kendra-Roop Nagar has a very well equipped and functioning soil and irrigation water testing laboratory, from where the soil and water testing facility is being provided to the farmer’s. In the laboratory, soil samples are tested for determining fertility status of soils for knowing fertilized requirement of crops, for kallar reclamation and knowing suitability of soils for orchard plantation. Likewise, for judging suitability of irrigation water for field crops, irrigation waters are being tested in the laboratory. Since it started functioning, 741 soil and 174 irrigation water has been brought by farmers to the laboratory for testing. Additionally soil samples for fields where Front Line Demonstrations (FLDs) and On-farm Trials (OFTs) are being conducted by KVK scientists, are also tested in the laboratory.

PREGRESS OF NEW PROJECT ON CLIMATE CHANGE

Krishi Vigyan Kendra-Roop Nagar has become the 4th KVK in Punjab (Zone-I) and has been one among the 100 Krishi Vigyan Kendra’s throughout India to have an Indian Council of Agricultural Research (ICAR) extension project on ‘National Initiative on Climate Resilient Agriculture’ (NICRA). A funding of ₹ 30.35 Lakh has been sanctioned by ICAR for the project and the project has been initiated in Rasispur village of Chamkaur Sahib block of the district. Under the project, agricultural implements viz. multi-crop planter, power weeder, zero-tillage-cum-fertilizer drill, rotary trolley-cum-loader, semi-automatic potato planter, pulverizing roller, hand held GPS have been purchased. Awareness camp under NICRA was conducted on 05-04-2011 to familiarize the farmer’s regarding benefits of NICRA project for the farmers of the village. With the objective of popularizing cultivation of summer Moong, front line demonstrations were also conducted under the project during 2011. Krishi Vigyan Kendra-Roop Nagar have collected 100 soil samples from the farmer’s field of Village-Rasidpur to know the macro and micro-nutrient fertility status of soils. The soil sampling sites have been geo referenced using GPS. On-farm trials (OFTs) on judicious use of irrigation water with the use of Tensiometer have also been conducted during Kharif-2011 at 6 different farmer’s field locations. Additionally, Krishi Vigyan Kendra-Roop Nagar had also conducted OFTs on need based nitrogen management using leaf color chart (LCC) at 10 different locations. Demonstrations on balanced use of fertilizers in Maize have also been conducted during Kharif-2011 at 3 different farmer’s field locations. A farmer’s training camp on fertilizer and irrigation scheduling was also conducted in the village. A field day on zero-tillage sowing of summer Moong was also organized by Krishi Vigyan Kendra-Roop Nagar on 24-06-2011, in which 32 farmer’s of village participated. During the field day technical session on successful cultivation of summer Moong was also organized.
Krishi Vigyan Kendra-Roop Nagar has very actively been involved in different agricultural extension activities carried out by the State Department of Agricultural through ATMA scheme at Roop Nagar and SAS Nagar Mohali. The subject matter specialists have been delivering lectures and providing technical know-how related to different innovative technologies generated by PAU, Ludhiana during farmer’s field schools conducted under the scheme. The experts are also interacting with the farming community of both the districts through Farmer’s-Scientist interactions being organized under ATMA scheme. Krishi Vigyan Kendra-Roop Nagar has also been inviting Agricultural Development Officers, Agriculture Officers and Project Director (ATMA) to visit sites of OFTs and FLD’s conducted by KVK in the districts, so as to share the performance of different technologies being tested through these demonstrations.

FRONT LINE DEMONSTRATIONS (FLDs)

Krishi Vigyan Kendra-Roop Nagar had conducted 20 FLDs on Summer Moong (SML-668) through which zero tillage has been demonstrated in comparison to conventional tillage Moong sown plots during 2011. Front line demonstrations on summer Mash (var. Mash-1008) were conducted at 10 different locations. Among oilseed crops, newly released Sunflower variety PSH-569 was demonstrated against PSFH-118 (local check). Similarly, 2 FLD’s on spring Maize (PMH-1) were conducted. In addition, FLDs Wheat variety PBW-550 were also conducted at 3 different locations where zero tillage versus conventional tillage sowing technique were compared and 2 FLDs on newly released DBW-17 variety was compared with PBW-550. The results of these FLDs have been presented in the following table.

ON-FARM TRIALS (OFTs)

OFT-1: Effect of Potassium (K) and Sulphur (S) Application in Wheat (Triticum aestivum L.)

An on-farm trials at five different farmer field locations were conducted to evaluate the effect of K and S application on yield, yield attributes and production efficiency of Wheat in sub-tropical soils. Six treatments viz. recommended NPK (T1), recommended NPK +50.0 kg S ha−1 (T2), farmer’s practice (FP) (T3), FP +30.0 kg S ha−1 (T4), FP +30.0 kg K, O ha−1 (T5) and FP + 30.0 kg S ha−1 +30.0 kg K, O ha−1 (T6) were evaluated at each location. Highest grain yield was obtained from plots dressed with recommended NPK + S @30.0 kg S ha−1 (T2). The performance of crop under different treatments is shown in Figure-1.

OFT-2: Effect of Different Time Lags of First Irrigation and Age of Seedlings on Bolting and Yield of Onion

An on-farm trial at six different farmer’s field locations were conducted to investigate the effect of different time lags of first irrigation and age of seedlings on bolting and yield of Onion by comparing different treatments viz. irrigation immediately after transplanting (for 45 day seedling) (T1), irrigation on 2 days after transplanting (for 45 day seedling) (T2), irrigation 4 days after transplanting (for 45 day seedling) (T3), irrigation immediately after transplanting (for 60 day seedling) (T4), irrigation 2 days after transplanting (for 60 day seedling) (T5) and irrigation 4 days after transplanting (for 60 day seedling) (T6). The results revealed no correlation between first irrigation and bolting. Further, 60 days old seedling transplantation has resulted in more bolting than 45 days old seedlings. Higher yield was obtained with 45 day old seedlings which were irrigated immediately after transplanting.

OFT-3: Realizing Profit Margin Through Low-tunnel Technology

An on-farm trial was conducted at 5 different locations to assess different technologies related to Capsicum production viz. transplanting in February in open field conditions (T1), advanced transplanting in December in clear covered tunnels (T2), and advanced transplanting in December in half covered low tunnels (T3). The results revealed that crop was advanced by 37 days in T2 and 32 days in T3 as compared to T1. Furthermore, earliness of crop in T2 and T3 treatments as compared to T1 resulted in fetching high price and hence more returns to the farmer’s, although the yield was less as compared to T1.

OFT-4: Management of Prolapse at Domestic Level

An on-farm trial on five animals was conducted to find an appropriate strategy for the management of Prolapse at domestic level by comparing four treatment viz. decreased feeding of straw (T1), T1+ not feeding the animal in the evening (T2), T1+T2+ Calcium supplementation through Osteovet@ 100 ml day−1 animal (T3), and FP (none of the above). The results revealed that all the first three treatments (T1 to T3) had shown improvement in the problem, but T3 was the best as the animal has shown maximum relief from the problem.
FIELD DAY’S ORGANIZED

During the last six months, Krishi Vigyan Kendra-Roop Nagar organized eight field days at different villages to demonstrate the technology being tested through front line demonstrations (FLDs). A field day on newly released *Gram* variety PBG-5 was organized at Village-Fateghar Viran, Block-Chamkaur Sahib on 01-03-2011 in which 25 farmer’s participated. During the technical session, the subject matter specialists of Krishi Vigyan Kendra-Roop Nagar shared different production and protection technologies related with the successful cultivation of *Gram* under irrigated conditions. Field day on newly released *wheat* variety PBW-550 sown under zero tillage and conventional tillage system was organized at Village-Surewal, Block-Anandpur Sahib. The technical session arranged during field day focused primarily on disease (Yellow Rust) and nutrient management, besides highlighting the benefits of zero tillage sowing in terms of increased yield, enhanced nutrient use efficiency, irrigation water saving. Among oilseed crops, a field day on newly released *Sunflower* variety (PSH-569) was organized at Village-Sandhuan, Block-Chamkaur Sahib. Likewise, a field day on newly released *Gobi Sarson* variety GSC-5 was organized at Village-Rasidpur, Block-Chamkaur Sahib on 08-03-2011, during which the crop performance was shown to the participants. The technical session focused on plant protection and nutrient management, especially on the role of Potassium and Sulphur nutrition in *Sunflower* production. Krishi Vigyan Kendra-Roop Nagar organized two field days on FLDs on Zero tillage sowing of summer *Moong* versus its conventional sowing, being demonstrated under ICAR scheme on oilseed and pulse crops and under NICRA project. In a field day organized at Village-Dekwala, Block-Ropar 34 farmer’s of the village and neighboring areas participated. Likewise, in a field day on summer *Moong* at Village-Rasidpur, Block-Chamkaur Sahib 31 farmer’s participated. During the field days, the farmer’s were shown the performance of crop sown in both zero and conventional tillage plots. A technical session organized during the occasions focused on useful tips for the successful cultivation of *Moong* during summer season.

KRISHI VIGYAN KENDRA RELEASED ITS FIRST TECHNICAL BULLETIN

Krishi Vigyan Kendra-Roop Nagar released its first technical bulletin on “Diagnosis and Amelioration of Micro-nutrient Deficiencies in Rice and Wheat” authored by Pritpal-Singh, Sat Pal Saini and Kuldip Singh Sandhu, during Zonal Workshop of Krishi Vigyan Kendra’s (Zone-I) held at Sher-e-Kashmir University of Agricultural Sciences and Technology-Kashmir (SKUAST-K) from 23-25th April, 2011. The technical bulletin was released by worthy Vice-Chancellor (SKUAST-K), Dr. Tej Partap and Dr. K.D. Kokate, Deputy Director General (Agri. Extn.), ICAR, New Delhi, Dr. K.M. Buarbarah VC, AAU, Assam & Chairman QRT, Zone-I, ICAR, New Delhi during the occasion Dr. A. M. Narula, Zonal Project Director (Zone-I), Ludhiana were also present.

KISAN MOBILE ADVISORY SERVICE (KMAS)

Krishi Vigyan Kendra-Roop Nagar has been very successfully transmitting the innovative technology generated by Punjab Agricultural University, Ludhiana since the beginning of ‘Kisan Mobile Advisory Service” project through Kisan Sanchar (www.kisansanchar.com) on 28th October’ 2010. The advisory aimed at faster horizontal diffusion of production and protection technology among farming community engaged in various agricultural activities viz. crop production, fruit and vegetable production, dairy farming, bee keeping, mushroom production etc.. So far about 475 farmer’s throughout the district have been selected and KVK is providing information through their mobiles as SMSs. So far, about 153 messages (SMS) on different aspects viz. P.A.U. recommended varieties, sowing time, seed treatment, fertilizer management, irrigation schedule and plant protection measures for important crops of the district have been flashed so far. In addition, tips for successful vegetable production and animal health have also been flashed at appropriate time for the purpose.

SPONSORED TRAININGS/WORKSHOPS ORGANIZED

Krishi Vigyan Kendra-Roop Nagar organized one day workshop on ‘Quality Improvement and Production of Basmati Rice’, in collaboration With Basmati Export Development Foundation (BEDF), APEDA, Government of India, Modipuram (UP), India. About 50 farmer’s engaged in basmati rice production were invited for this workshop. During the workshop, Dr. M.S. Gill, Director of Extension Education, PAU, Ludhiana shared his experiences and useful tips for the production of high quality basmati. Dr. S.P Saini shared the fertilizer and irrigation water management technologies recommended by PAU, Ludhiana for the production of basmati rice. Different nutritional disorders of rice were shown by Dr. S.P Saini through LCD projector and recommended ameliorative measures were discussed in detail. Sh. Amandeep Singh Sidhu interacted with the participants for weed control through recommended herbicides. He focused primarily on efficient herbicide spray technology and use of different nozzles specified for the purpose. Different plant protection (insect-pest and disease) aspects were shared by Assistant Professor (Plant Protection) during the workshop.

Krishi Vigyan Kendra-Roop Nagar, Punjab Agricultural University
PUBLICATIONS OF KRISHI VIGYAN KENDRA-ROOP NAGAR

The subject matter specialists of Krishi Vigyan Kendra-Roop Nagar have also made appreciable contribution for strengthening agricultural extension works through publication of literature in various journals/magazines and reputed periodicals.

Abstracts Published (01)
- Saini SP, Pritpal-Singh, Khurana MPS and Matharu GS (2011) Yield, efficiency and economics of manganese sulphate application on wheat grown in irrigated subtropical soils under rice-wheat cropping sequence. Extended Summary Published in Special Issue of Crop Improvement covering International Conference on “Preparing Agriculture for Climate Change” at Punjab Agricultural University, Ludhiana, Punjab, India from 06-08 February’ 2010, organized by Crop Improvement Society of India. Abstract Book Page-312-13.

Research Papers Published (07)
- Pritpal-Singh and Saini SP (2011) Effect of rice straw mulching and irrigation intervals on sugarcane (Saccharum officinarum) yield and water productivity in sub-tropics of Punjab. Crop Research (An International Journal) 41: 89-93.

Success Stories (01)

Bulletin's Published

Popular Articles Published

Success Stories (01)
CAMPAIGNS/EXPOSURE VISITS ORGANIZED

Krishi Vigyan Kendra-Roop Nagar regularly organized many campaigns viz. Soil and Water Testing, Preparation of Quality Farm Yard Manure, Parthenium Eradication Campaigns and exposure visits of the participants of different training courses. During long-duration vocational training courses on bee keeping, the participants of the training were brought to the farm of successful bee keeper’s of the district. An exposure visit of farmers and rural youth of vocational training on protected cultivation of Vegetable Crops was organized to the net-house of former KVK-Roop Nagar trainee Sh. Harpreet Singh, Village-Phool, Block-Ropar and Sh. Naveen Kumar Dardi, Village-Gurdaspura, Block-Ropar. At Sh. Harpreet Singh’ and Sh. Naveen Kumar Dardi’s farm, the participants were shown the bumper Capsicum, Tomato and Cucumber crops grown under net-house structure. The participants also interacted with Sh. Harpreet Singh and Sh. Naveen Kumar Dardi regarding marketing skills adopted by him for marketing of vegetables produced under net-house structure. The participants were also shown the performance of vegetable nursery raised under low-tunnel structure.
METHOD DEMONSTRATIONS

Banana Cultivation           Direct Seeding of Rice         Low-tunnel Technology               Straw Mulching                        Soil Sampling

UROMIN LICK PREPARATION

Krishi Vigyan Kendra-Roop Nagar has also started the preparation of Uromin lick on small scale for sale purpose. The farmer's are showing their keen interest in the purchase of Uromin licks prepared at Krishi Vigyan Kendra-Roop Nagar. The work has also continuously been imparting trainings (Short-term and Vocational) to the dairy farmer's on importance of Uromin lick for dairy animals.

EXTENSION SPECIALIST AT KVK - ROOP NAGAR

<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
<th>E-mail ID</th>
<th>Contact Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sat Pal Saini</td>
<td>Associate Director-Cum-Professor (Soil Science)</td>
<td><a href="mailto:gahuniasp1962@gmail.com">gahuniasp1962@gmail.com</a></td>
<td>+91-9465168676</td>
</tr>
<tr>
<td>Aparna</td>
<td>Assistant Professor (Animal Science)</td>
<td><a href="mailto:aparnapau@gmail.com">aparnapau@gmail.com</a></td>
<td>+91-9872805020</td>
</tr>
<tr>
<td>Gurteg Singh</td>
<td>Assistant Professor (Horticulture)</td>
<td><a href="mailto:gur_hort@rediffmail.com">gur_hort@rediffmail.com</a></td>
<td>+91-98150-98883</td>
</tr>
<tr>
<td>Pritpal Singh</td>
<td>Assistant Professor (Soil Science)</td>
<td><a href="mailto:jasppsingh@gmail.com">jasppsingh@gmail.com</a></td>
<td>+91-9780016480</td>
</tr>
<tr>
<td>Preeti Sharma</td>
<td>Assistant Professor (Home Science)</td>
<td><a href="mailto:preeti00sharma@yahooomail.com">preeti00sharma@yahooomail.com</a></td>
<td>+91-7589093457</td>
</tr>
<tr>
<td>Ravinder Kumar</td>
<td>Assistant Professor (Plant Protection)</td>
<td><a href="mailto:ravi1064@gmail.com">ravi1064@gmail.com</a></td>
<td>+91-9872887311</td>
</tr>
<tr>
<td>Amandeep Singh Sidhu</td>
<td>Assistant Professor (Crop Production)</td>
<td><a href="mailto:amansidhu_80@rediffmail.com">amansidhu_80@rediffmail.com</a></td>
<td>+91-9872664899</td>
</tr>
</tbody>
</table>

FOR MORE DETAILS-PLEASE CONTACT

ASSOCIATE DIRECTOR (TRAINING)
KRISHI VIGYAN KENDRA, HAVELI KALAN, ROOP NAGAR (ROPAR)-140 001, PUNJAB, INDIA
PHONE :01881-220460 (O)

Chief Editor : Prof. S. P. Saini, Associate Director (Training)
Editor : Dr. Pritpal-Singh, Assistant Professor (Soil Science)
Published by : Krishi Vigyan Kendra (PAU)-Roop Nagar
(Haveli Kalan), Punjab (141001), India
Special Help : Er. Ashish Sagar, Demonstrator (Agri. Engg.)
Telephone : 01881-220460, Fax: 01881-220460
Email : gahuniasp1962@gmail.com
                    jasppsingh@yahoo.co.in