Introduction:

The Department of Crop Physiology was established in the year 1978. M.Sc. was started in 1983 and Ph.D. during 1986. Till now about 85 M.Sc. (Ag.) and 37 Ph.D. students have been awarded degree. Students of this department are serving on various administrative/teaching/research posts in state/central government departments. The numbers of seats in the department have increased; now it is 14 in M.Sc. (Ag.) and 4 in Ph.D.

The department is internationally recognised for its work on abiotic stresses particularly on submergence, drought and salinity. A number of National and International projects have been run in the department. At present 5 International and 2 National projects are in the department. The department has released 5 submergence tolerant rice varieties under CURE project namely Swarna Sub 1, Narendra Mayank, Narendra Narayani, Narendra Jalpushpa and NDR 8002. Besides this, a number of technologies have been developed to enhance the productivity potential of submergence and salt affected soils.

Recognizing the achievements of the department, the ICAR awarded Centre of Advanced Faculty Training (CAFT) in Crop Physiology in 1995. The department is continuously organizing advanced training courses each year on various aspects of plant physiology since its inception.

Objectives of the CAFT:

1. To impart advanced training to the scientists and academic staff within the National Agriculture research and education and extension system in the country.

2. Training and retraining to the faculties of Universities/Institutes in enhancing their capabilities in use of educational innovations, modern teaching and research methodology along with serving as repository of ideas and information in concern discipline.

Faculty: Name & Designation (as per 30.09.2011):

<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
<th>Expertise Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. A.H. Khan</td>
<td>Head of Department</td>
<td>Weed Physiology, PGR, Salinity and Temperature Stress</td>
</tr>
<tr>
<td>Dr. A.K. Singh</td>
<td>Assistant Professor</td>
<td>Physiology of Submergence and Drought</td>
</tr>
<tr>
<td>Dr. S.P. Singh</td>
<td>Assistant Professor</td>
<td>Mineral Nutrition and Salt Stress</td>
</tr>
<tr>
<td>Dr. R.K. Yadav</td>
<td>Assistant Professor</td>
<td>PGR and Salt Stress</td>
</tr>
<tr>
<td>Dr. Raj Bahadur</td>
<td>Assistant Physiologist</td>
<td>Pulse Physiology</td>
</tr>
</tbody>
</table>
Dr. Gulab Singh  Rice Physiologist  Rice Physiology
Dr. H.P. Singh  Seed Physiologist  Seed Physiology
Dr. M.P. Singh  Assistant Professor  Mineral Nutrition

❖ **Four posts are vacant:** Hon’ble Vice-chancellor is making effort to full fill posts

**Human Resource Development:**
Particulars of short courses/training programme for HRD conducted during XI plan period

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the programme</th>
<th>Period</th>
<th>No. of Participates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Internal</td>
</tr>
<tr>
<td>1.</td>
<td>Harnessing Productivity Potential of Salt Affected Areas: Physiological and Molecular Approaches (2007-08)</td>
<td>21 Days</td>
<td>07</td>
</tr>
<tr>
<td>2.</td>
<td>Sustainable Improvement in Plant Productivity Under Stress Environments (2008-09)</td>
<td>21 Days</td>
<td>06</td>
</tr>
<tr>
<td>4.</td>
<td>Crop Improvement Under Submergence and Salt Stress: Physiological and Molecular Approaches (2010-11)</td>
<td>21 Days</td>
<td>09</td>
</tr>
<tr>
<td>5.</td>
<td>Crop Improvement under Changing Environment: Physiological and Molecular Approaches (2011-12)</td>
<td>21 Days</td>
<td>21</td>
</tr>
</tbody>
</table>

**Infrastructure Development (equipment):** Non recurring contingency was not allotted during entire 11th five year plan. But we purchased some equipments from the funds provided by other agency. The equipments purchased during this period are

1. Atomic Absorption Spectrometer
2. Moisture Meter
3. Electronic Balance
4. Flame Photometer
5. Double beam uv-vis spectrophotometer

**Renovation of lecture room/ laboratory:** Seminar hall was renovated in the year 2008-09 from the fund received from central assistance.
Library upgraded: Books are purchased every year from the budget given under CAFT.

Awards/recognition:
- Vice-Chancellor of the University awarded commendation card to the HOD Crop Physiology for the release of Swarna Sub 1 variety under the CURE project funded by IRRI.
- Letter of Appreciation was given to Dr. P.C. Ram (Former Head, Crop Physiology) from Programme Leader, International Rice Research Institute Philippines for outstanding contribution in rainfed lowland rice research and management.

Publications:

International Journal:
Indian Journal:


Chapter Published in Books:

Books:
1) G.S. Chaturvedi, P. C. Ram, A.K. Singh (2009) Physiological Basis of Crop Production & Improvement, Published by Pointer Publisher, Jaipur
2) G.S. Chaturvedi, P. C. Ram (2009) Crop Production Under Diverse Environments, Published by Pointer Publisher, Jaipur
3) G.S. Chaturvedi, P. C. Ram, (2009) Physiological and Biotechnological Manipulations for Enhancing Plant Productivity, Published by Pointer Publisher, Jaipur
4) G.S. Chaturvedi, P. C. Ram, (2009) Abiotic Stresses and Plant Productivity, Published by Pointer Publisher, Jaipur

Bulletin Published for the Farmers: (Technology developed for rice under submergence & salt affected soils)
1. ck<+ zxLr {ks=ksa esa /kku dh lQy [ksrh% vk/kqfud rduhd
2. Álj Hkwfe dh mRikndrk c<+kus dh vk/kqfud rduhd;k}
Manual:

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Manuals /Instructional Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>One laboratory manual and one update</td>
</tr>
<tr>
<td>2008-09</td>
<td>One laboratory manual and one update</td>
</tr>
<tr>
<td>2008-09</td>
<td>One laboratory manual, and one update</td>
</tr>
<tr>
<td>2010-11</td>
<td>One laboratory manual and one update</td>
</tr>
<tr>
<td>2011-12</td>
<td>Under Preparation</td>
</tr>
</tbody>
</table>

Any other:

- **Linkage with international network and other organisations**
  - **IRRI** - Consortium for Unfavourable Rice Environment (CURE)
  - **STRASA** - Stress tolerance Rice for Africa and South Asia
  - **BMZ** - Enhancing and Stabilizing the Productivity of Salt Affected Area by Incorporating Genes for Abiotic Stress
  - **IFAD** - "Improved Rice Crop Management for Raising Productivity in Submergence Prone and Salt-Affected Rainfed Low lands in South Asia"
  - **ACIAR, Australia** - Wheat Improvement for Water Logging, Salinity and Element Toxicities in Australia and India
  - **RKVY** - Rashtriya Krishi Vikas Yojana
  - **UPCAR** - Establishment of Leaf Tissue Analysis Laboratory

- **Scientist Visited the Department** - A number of National and International scientists visited department during this period and discussed about the various experiments of international projects and also visited the project sites.

- **Scientists of the Department visited abroad**:
  - Dr. P.C. Ram, IRRI, Philippines, Manila
  - Dr. A.H. Khan, Kathmandu Nepal
  - Dr. A.K. Singh, IRRI, Philippines, Manila
  - Dr. S.P. Singh, IRRI, Philippines, Manila

Financial Statement:

Expenditure under CAFT during XI plan

<table>
<thead>
<tr>
<th>Head</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating cost of Training</td>
<td>17,7,000.00</td>
<td>3,54,000.00</td>
<td>-</td>
<td>3,75,000.00</td>
<td>Training is scheduled from 9-29 Nov. 2011.</td>
</tr>
<tr>
<td>Recurring Contingency</td>
<td>1,51,759.00</td>
<td>1,98,723.00</td>
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<td>1,09,177.00</td>
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<tr>
<td>Non-Recurring Contingency</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
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<tr>
<td>T.A.</td>
<td>5,913.00</td>
<td>8,858.00</td>
<td>-</td>
<td>4,392.00</td>
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<tr>
<td>Library</td>
<td>50000.00</td>
<td>50000.00</td>
<td>-</td>
<td>19580.00</td>
<td></td>
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<tr>
<td>TOTAL</td>
<td>384672</td>
<td>611581</td>
<td>0</td>
<td>508149</td>
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