CENTRES OF ADVANCED FACULTY TRAINING
DEPARTMENT OF SOIL SCIENCE
PUNJAB AGRICULTURAL UNIVERSITY,LUDHIYANA

Introduction:

Department of Soil Science at PAU, Ludhiana has experienced, distinguished and dedicated faculty actively engaged in research on all aspects of soil science. Recognizing the high standards of research and teaching achieved by the Department, the United Nations Development Programme of FAO established it as Centre of Excellence in Soil Science. Several pieces of specialized equipment such as Inductively Coupled Argon Plasma, autoanalyzers, gas chromatograph, CHNS analyzer, root scanners, X-ray diffraction (XRD) and energy dispersive EDXRF, GLC, Ion chromatograph, optical senso, TDR are available in the Department. Huge funds received in the form of ad-hoc projects funded by ICAR, Department of Science and Technology, USDA, international organization and fertilizer industry is a testimony to the high merits of the Department in terms of scientific calibre and infrastructure quality.

Objective of CAFT:

i) To develop facilities to function as centre of advanced faculty training in field of soil science.
ii) To undertake advanced education and research activities and training and retraining of scientists/faculty members of different universities and ICAR institutes in the country in the field of soil science.
iii) To conduct summer institutes as and when sanctioned by the Indian Council of Agricultural research.

Faculty: Name & Designation (as on 30.09.2011):

ICAR National Professors

1. Dr. Bijay Singh
2. Dr. Dinesh Kumar Benbi

INSA Senior Scientist

3. Dr Yadvinder Singh

ICAR Emeritus Scientist

4. Dr S. K. Jalota

Faculty

5. Dr. U. S. Sadana — Professor -cum-Head

Professors & Equivalent

6.	Dr. Charanjit Sethi	Professor
7.	Dr. (Mrs) N. K. Sekhon	Sr. Plant Physiologist
8.	Dr. B. D. Sharma	Sr. Soil Scientist
9.	Dr. V. K. Arora	Sr. Soil Physicist
10.	Dr. G. S. Saroa	Sr. Soil Chemist
11.	Dr. B. S. Brar	Sr. Soil Scientist
12.	Dr. Hargopal Singh	Sr. Soil Scientist
13.	Dr. Raj Kumar	Sr. Pedologist
14.	Dr. H. S. Thind	Sr. Soil Chemist
15.	Dr. C. B. Singh	Sr. Soil Scientist
16.	Dr. M. S. Hadda	Professor of Soil Consv.
17.	Dr. R. K. Gupta	Sr. Soil Chemist
18.	Dr. H. S. Jassal	Professor of Soil Consv.
19.	Dr. Dalvinderjit Singh Benipal	Sr. Soil Chemist
20.	Dr. S. S. Mukhopadhyay	Sr. Pedologist,
21.	Dr. S. S. Kukal	Professor of Soil Consv.
22.	Dr. Deedar Singh	Sr. Soil Chemist,
23.	Dr. Dhanwinder Singh	Sr. Soil Chemist
24.	Dr. O. P. Choudhary	Sr. Soil Chemist
25.	Dr. Joginder Singh Manchanda	Sr. Soil Chemist
26.	Dr. M. P. S. Khurana	Sr. Soil Chemist

Associate Professors & Equivalent

27.	Dr. Dinesh Kumar Kathuria	Associate Professor
28.	Dr. Kuldip Singh	Soil Chemist
29.	Dr. S. S. Dhaliwal	Soil Chemist
30.	Dr. Varinder Pal Singh	Assoc. Prof.of Soil
31.	Dr. A. S. Sidhu	Assoc. Professor of Soil
32.	Dr. A S Toor	Soil Chemist

Assistant Professors & Equivalent

33.	Dr. Ravinder P. Singh Pannu	Asstt. Soil Chemist
34.	Dr. Bharat Bhushan Vashisht	Asstt. Soil Physicist
35.	Dr. Manpreet Singh Mavi	Asstt. Soil Chemist
36.	Dr. (Mrs.) Maninder Kaur Khosa	Asstt. Soil Chemist
37.	Dr. Meharban Singh Kahlon	Asstt. Soil Physicist
38.	Dr. B.S. Sekhon	Asstt. Soil Chemist
39.	Dr. Harmanjit Singh	Asstt. Soil Chemist
40.	Dr. Gurmeet Singh Dheri	Asstt. Soil Chemist
41.	Dr. Sandeep Sharma	Asstt. Soil Chemist
42.	Dr. Shahbaz Singh	Asstt. Soil Chemist
43.	Sh. Jagdeep Singh	Asstt. Soil Chemist

Human Resource Development:

Particulars of Short Courses / Training program for HRD conducted during XI plan period

S.No.	***Name of the Program***	***Period***	***No. of Participants***		
			Internal	***External***	***Total***
1.	Natural Resource Management for Ecological Agriculture	Sept. 27 – Oct. 17, 2007	0	18	18
2.	Impact of Intensive Agriculture on Environment Quality	Nov. 28-Dec. 18, 2007	1	11	12
3.	Modern Techniques for Analysis of Soil, Plant, Fertilizer and Irrigation Water	Sept. 23-Oct. 13, 2008	1	19	20
4.	Efficient Management of Soil, Water and Nutrients for Sustained Productivity and Environmental Quality	Jan. 7-27, 2009	1	12	13
5.	Environmental Pollution and Mitigation Strategies	March 9-29, 2010	2	8	10
6.	Advances in Analysis of Soil, Plant and Irrigation Water	Jan. 4-24, 2011	2	23	25
7.	Enhancement of Soil Health for Sustaining Crop Productivity and Environmental Quality	Nov. 22-Dec. 12, 2011	2	22	24

Infrastructure development (equipments etc.):

During XI plan, there was no provision for non-recurring contingency for establishing any infrastructure facilities.

In the current financial year (2011-12), an amount of Rs. 1.00 lac has been sanctioned for the purchase of a LCD projector and a computer for Model Lecture Room.

Renovation of Lecture Room/Laboratories:

No funds were provided for renovation of Lecture Room/Laboratories during XI plan.

Library upgraded:

Library has been upgraded with books worth Rs. 1.09 lac during the first fours years of the XI plan. Furthermore, an amount of 0.30 lac has been provided for purchase of books in the current year.

Awards/Recognitions:

National

Awards

Year	Award	Recipient
2008-09	Punjab Sarkar Praman Patar	Dr. MS Aulakh
2008-09	Professor Krishna Sahai Bilgrami Memorial Award of INSA	Dr. Bijay Singh
2008-09	Dr. NS Randhawa Memorial Award of NAAS	Dr. Bijay Singh
2008-09	TSI-FAI Award on Plant Nutrient Sulphur	Dr. MS Brar and Dr. MPS Khurana
2009-10	ICAR National Professor	Dr. D K Benbi

Fellowships

Year	Award	Recipient
2007-08	Fellow, Indian Society of Soil Science	Dr. IM Chhibba
2007-08	Fellowship of Indian Society of Water Resources	Dr. C S Sethi
2008-09	Fellow, Indian National Science Academy	Dr. Yadvinder Singh
2008-09	Fellow, Indian Society of Soil Science	Dr. DK Benbi Dr. BD Sharma
2010-11	Fellow, Indian Society for Nuclear Technique in Agric & Biology	Dr. K N Sharma

International

Awards

Year	Award	Recipient
2007-08	First International Plant Nutrition Institute Award	Dr. MS Aulakh
2007-08	IMPHOS-FAI Award Instituted by World Phosphate Institute, Morocco	Dr. BS Brar Dr. NS Dhillon

Publications

- **International Journal**

Arora, V.K., Harbakhshinder Singh, and Bijay Singh. 2007. Analyzing wheat productivity responses to climatic, irrigation and fertilizer- nitrogen regimes in a semi-arid sub-tropical environment using the CERES- Wheat model. *Agricultural Water Management*, 94:22-30.

Arora, V.K., Sidhu, A.S., Sandhu, K.S. and Thind, S.S. 2010. Effects of tillage intensity, planting time, and nitrogen rate on wheat yield following rice. *Experimental Agriculture*, 46:267- 275.

Aulakh, M.S., Khurana, M.P.S., and Dhanwinder-Singh. 2009. Water Pollution Related to Agricultural, Industrial, and Urban Activities, and its Effects on the Food Chain: Case Studies from Punjab. *Journal of New Seeds*, 10:112-137.

Aulakh, M.S. and Garg, A.K. 2007. Yields and nutrient use-efficiency in groundnut–sunflower cropping system in Punjab, India. *Journal of Sustainable Agriculture*, 31:89-110.

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Bijay-Singh, Sharma, R.K., Kaur, J, Jat, M.L., Martin, K.L., Yadvinder-Singh, Varinderpal-Singh, Chandna, P., Choudhary, O.P., Gupta, R.K., Thind, H.S., Singh, J., Uppal, H.S, Khurana, H.S., Kumar, A., Uppal, R.K., Vashistha, M., Raun, W.R., and Gupta, R. 2011. Assessment of the nitrogen management strategy using an optical sensor for irrigated wheat. *Agronomy and Sustainable Development*, 31: 589–603.

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Dhaliwal, S.S., Manchanda, J.S. and Tiwana, U.S. 2009. Seed production of Egyptian clover (Trifolium alexandrium L) as influenced by foliar application of Zn, Mn, Mo and B on loamy sand soil. *Asian Journal of Soil Science*, 3:257-260.

Dhanwinder-Singh, McLaren, R.G., Cameron, K.C. 2008. Effect of pH on Zinc Sorption-Desorption by Soils. *Communications in Soil Science and Plant Analysis*, 39: 2971-2984.

Dhillon, S.K., Hundal, B. K. and Dhillon, K.S. 2007 Bioavailability of selenium to forage crops in a sandy loam soil amended with Se-rich plant materials. *Chemosphere*, 66:1734-1743.

Gupta, R.K.,Yadvinder-Singh, Ladha J.K., Bijay-Singh, Jagmohan Singh, Gurpreet Singh and Pathak H. 2007. Yield and phosphorus transformations in a rice-wheat system with crop residue and phosphorus management. *Soil Science Society of America Journal*, 71:1500-1507.

Gurpreet Singh, Jalota, S.K. and Yadvinder-Singh. 2007. Manuring and residue management effects on soil physical properties of a soil under the rice–wheat system in Punjab, India. *Soil and Tillage Research*, 94:229-238.

Humphreys, E., Kukal, S.S., Christen, E.W., Hira, G.S, Balwinder-Singh, Sudhir-Yadav and Sharma, R.K. 2010. Halting the groundwater decline in northwest India–Which crop technologies will be winners? *Advances in Agronomy*, 109 (In Press).

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Jalota, S.K., Singh, K.B., Chahal, G.B.S., Gupta, R.K., Chakraborty-Somsubhra, Sood, A, Ray, S.S. and Panigrahy, S. 2009. Integrated effect of transplanting date, cultivar and irrigation on yield, water saving and water productivity of rice (Oryza sativa L.) in Indian Punjab: field and simulation study. *Agricultural Water Management*, 96:1096-1104.

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Kaur, A.J. and Sadana, U.S. 2010. Nitrogen source and manganese application effects on manganese dynamics in the rhizosphere of wheat cultivars grown on manganese deficient soils. Journal of Plant Nutrition, 33:831-845.

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Khurana, H.S., Sidhu, A.S., Dobberman, A., Yadvinder-Singh, Bijay-Singh, and Phillips, S. 2007. Performance of site-specific nutrient management for irrigated, transplanted rice in Northwest India. *Agronomy Journal*, 99:1436-1447.

Kukal, S.S., Sudhir-Yadav, Humphreys, E., Amanpreet-Kaur, Yadvinder-Singh, Thaman, S., Singh, B. and Timsina, J. 2010. Factors affecting irrigation water savings in raised beds in rice and wheat. *Field Crops Research*, 118:43-50.

Kukal, S.S., Manmeet-Kaur and Bawa, S.S. 2008. Erodibility of sandy loam aggregates in relation to their size and initial moisture content under different land uses in semi-arid tropics of India. *Arid Land Research and Management*, 22:216-227.

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Sharma, B.D., Raj-Kumar, Bijay-Singh and Sethi, M. 2009. Micronutrient distribution in salt affected soils of the Punjab in relation to soil properties. *Archives of Agronomy and Soil Science*, 55:367-377.

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Sidhu, H.S., Manpreet-Singh, Humphreys E., Yadvinder-Singh, Balwinder-Singh, Dhillon, S.S., Blackwell, J., Bector, V., Malkeet-Singh and Sarbjeet-Singh. 2007. The Happy

Seeder enables direct drilling of wheat rice stubble. *Australian Journal of Experimental Agriculture*, 47:1-11.

Singh, K.B., Jalota, S.K., Gurpreet Singh and Sharma, B.D. 2009. Effect of Continuous Rice-Wheat Rotation on Physical and Chemical Properties of Different Soils in four Agro-Ecosystems of Indian Punjab. *Communication in Soil and Plant Analysis*, 40:1-14.

Thind, H.S., Aujla, M.S. and Buttar G.S. 2008. Response of cotton to various levels of nitrogen and water applied to normal and paired sown cotton under drip irrigation in relation to check-basin. *Agricultural Water Management*, 95:25-34.

Thind, H.S., Bijay-Singh, Pannu, R.P.S., Yadvinder-Singh, Varinderpal-Singh, Gupta, R.K., Vashistha, M., Singh, J. and Kumar, A. 2009. Relative performance of neem (Azadirachta indica) coated urea vis-a-vis ordinary urea applied to rice on the basis of soil test or following need based nitrogen management using leaf colour chart. *Nutrient Cycling in Agroecosystems*, 87:1-8.

Thind, H.S., Bijay-Singh, Pannu R.P.S., Yadvinder-Singh, Varinderpal-Singh, Gupta, R.K., Vashistha, M, Singh, J., and Kumar, A. 2009. Performance of neem-coated urea vis-à-vis ordinary urea applied to irrigated transplanted rice in northwestern India. *International Rice Research Notes,* (0117-4185):1-3.

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Varinderpal-Singh, Bijay-Singh, Yadvinder-Singh, Thind, H.S. and Gupta, R.K. 2010. Need based nitrogen management using the chlorophyll meter and leaf colour chart in rice and wheat in South Asia: a review. *Nutrient Cycling in Agroecosystems*. DOI 10.1007/s10705-010-9363-7.

Varinderpal-Singh, Dhillon, N.S., Raj-Kumar and Brar, B.S. (2007) Long term effects of inorganic fertilizers and manures on phosphoric reaction products in a Typic Ustochrept. *Nutrient Cycling and Agroecosystems*. 76:29-37.

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- **Indian Journal**

Arora, S. and Hadda, M.S. 2008. In-situ soil moisture and nutrient management in relation to performance of rain fed wheat in submontane region of Punjab. *Indian Journal of Soil Conservation*, 36:94-96.

Arora, S. and Hadda, M.S. 2008. Optimizing wheat productivity through improved techniques for in-situ moisture conservation in a micro-watershed under sub-tropical region of North-Western India. *Annals of Tropical Research*, 30:113-124.

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Aulakh, M.S. and Beri V. 2007. Nutrient mining from soils by crops and estimates of export of nutrients from Punjab. *Journal of Research, Punjab Agricultural University*, 44:206-209.

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Buttar, G.S., Thind, H.S., Saroa, G.S. and Grover, K. 2009. Performance of wheat (Triticum aestivum) as influenced by nitrogen fertilization in clusterbean-wheat system. *Indian Journal of Agricultural Sciences*, 79:302-304.

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Financial Statement

Expenditure under CAFT during XI plan

Head	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12***
Operating cost of Training	198359	207734	79387	284221	
Recurring Contingency	198483	195649	108053	19885	114104
Non-Recurring Contingency T.A.	-- 54180	-- 41784	-- 7412	-- 26894	
Library	32551	48791	-	29665	
Total	484173	493958	194852	539665	

* Expenditure so far in 2011-12