

CHAPTER 2

PERFORMANCE AUDIT

Agriculture and Farmers Welfare Department

2.1 Working of Chaudhary Charan Singh Haryana Agricultural University

Haryana Agricultural University was established in February 1970 at Hisar and renamed (31 October 1991) as Chaudhary Charan Singh Haryana Agricultural University, Hisar (the University) with main objectives to impart education in agriculture, agricultural engineering, home science and other allied sciences; advancement of learning and research; and to undertake the extension of such sciences to the rural people in the State. A performance audit of the University brought out deficiencies in financial management and infrastructure development which impaired the ability of the University to achieve its overall objectives. Some of the significant audit findings are summarised below:

Highlights:

Grants of ₹ 3.12 crore were lying unspent as source and purpose for which the grants were received were not known. Temporary advances of ₹ 22.22 crore remained unadjusted.

(Paragraphs 2.1.6.2 and 2.1.6.3)

There was shortfall in enrollment in PG Diploma and MBA courses ranging between 40 and 56 per cent in College of Agriculture, Hisar and College of Basic Sciences and Humanities, Hisar.

(Paragraph 2.1.7.1)

There was shortage of 55 per cent teaching staff and 41 per cent non-teaching staff in the University.

(Paragraph 2.1.7.2)

There was lack of basic amenities in hostels of University campus; the maintenance of two hostels was very poor. Similarly, condition of Brahmsarovar hostel located at Kaul was very poor.

(Paragraphs 2.1.7.5 and 2.1.7.6)

Tissue culture laboratory was lying non-functional for want of specialized scientist.

(Paragraphs 2.1.7.8)

Out of 100 research projects funded by other agencies, only 49 research projects were completed and 51 projects remained incomplete.

(Paragraph 2.1.8.1)

Out of 56 technologies identified for Intellectual Property Rights (IPR), IPRs were obtained in respect of only 13 technologies.

(Paragraph 2.1.8.3)

Only 44 per cent and 50 per cent cultivable land of Ram Dhan Singh Seeds Farm was utilised during Kharif and Rabi seasons respectively. Further, there was failure of crops in Kharif and Rabi seasons due to not making arrangement for irrigation despite availability of funds.

(Paragraph 2.1.9.1 (i))

Out of nine Krishi Vigyan Kendras (KVKs) test checked, there was under utilisation of cultivable land in five KVKs.

(Paragraph 2.1.10.1)

New crop varieties were not propagated through Front Line Demonstrations (FLDs) in a large number of new varieties; on the other hand FLDs were conducted on old varieties. Further, there were cases of non-adoption of new crop varieties by farmers.

(Paragraph 2.1.10.2)

Community radio stations were not established in six KVKs despite release of funds of ₹ 1.18 crore during 2011-13.

(Paragraph 2.1.10.3)

2.1.1 Introduction

Haryana Agricultural University was established in February 1970 at Hisar under the Haryana and Punjab Agricultural Universities Act, 1970 after bifurcation of the erstwhile Punjab Agricultural University and renamed (31 October 1991) as Chaudhary Charan Singh Haryana Agricultural University, Hisar (the University). The University has an area of 5,359 acres under farms, 736 acres under buildings and roads at Hisar and 1,418 acres of land at out stations. The University has six Regional Research Stations¹ (RRSs) including one Sub-Research Station, 19 Krishi Vigyan Kendras (KVKs) (14² Indian Council of Agricultural Research sponsored

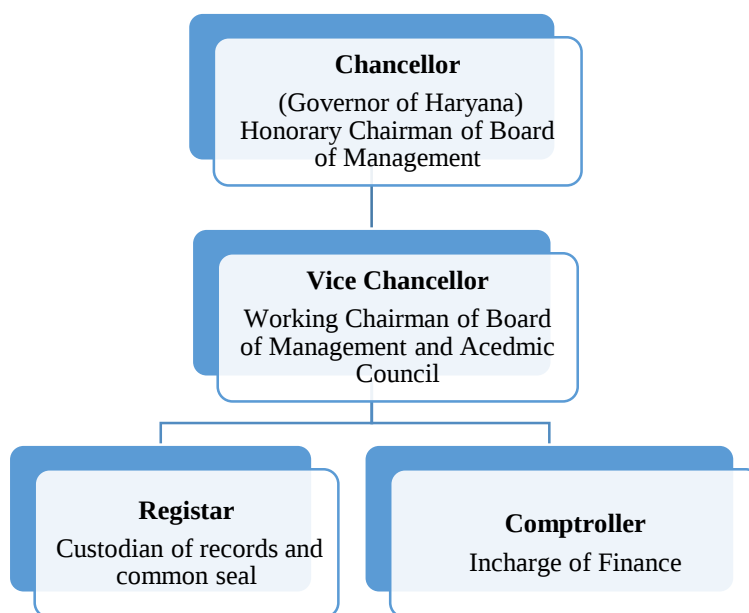
¹ (i) Kaul; (ii) Bawal; (iii) Karnal; (iv) Rohtak ; (v) Sirsa and (vi) Buria (Yamunanagar).

² (i) Bhiwani, (ii) Damla (Yamunanagar), (iii) Faridabad, (iv) Fatehabad, (v) Jhajjar, (vi) Jind, (vii) Kaithal, (viii) Kurukshetra, (ix) Mahendergarh, (x) Panipat, (xi) Rohtak, (xii) Sadalpur, (xiii) Sirsa and (xiv) Sonapat.

and five³ State sponsored) and six Constituent Colleges⁴ (CCs). **The main objectives of the University are to impart education in different fields of study, particularly in agriculture, agricultural engineering, home science and other allied sciences; advancement of learning and research and to undertake the extension of such sciences to the rural people in the State.**

2.1.2 Organisational set-up

The organisational set up of the University is depicted in the following chart:



The Board of Management (BOM) and the Academic Council have been declared as University's authorities for managing the affairs of the University in the Act and Statutes of the University. The BOM is the highest governing body of the University which lays down the policy guidelines for smooth functioning of the University. Other official members of BOM include the Secretaries of Agriculture, Finance and Development and Panchayats Departments of the State Government. The Academic Council is the statutory body which frames policies for governance of academic affairs in the University.

³ (i) Ambala, (ii) Bawal, (iii) Karnal, (iv) Mandkola (Palwal) and (v) Panchkula.

⁴ (i) College of Agricultural Engineering & Technology, Hisar; (ii) College of Agriculture, Hisar; (iii) College of Agriculture, Kaul; (iv) College of Agriculture, Bawal; (v) College of Basic Sciences and Humanities, Hisar and (vi) Indira Chakravarty College of Home Science, Hisar.

2.1.3 Audit objectives

The objectives of the Audit were to see whether:

- management of financial resources was efficient;
- academic functions and research activities including seed production programme were carried out effectively;
- extension of agricultural technologies to farmers was carried out efficiently; and
- manpower availability was sufficient and its utilisation was proper.

2.1.4 Scope of audit

Performance audit for the period 2013-18 was conducted during December 2017 - May 2018. Records of offices of the Comptroller, Registrar, Directorate, Deans, Estate Officer, Library, Land Scape Unit, Campus School/Hospital, Agricultural Technology Information Centre (ATIC), Transport, Printing Press, Store and Purchase Organisation, Security Officer, Extension Education Institute, Nilokheri and Associate Director Training, Hisar; one seed farm (Ram Dhan Singh Seed Farm) out of two seed farms of the University, three⁵ out of six constituent colleges, two⁶ out of six Research Stations, seven⁷ out of 14 KVKs (ICAR sponsored), two⁸ out of five KVKs (State sponsored) were test checked. The selection of units for test check was done by adopting random sampling method.

An entry conference was held in January 2018 with the officers of the Government and the University wherein audit objectives, audit criteria, scope of audit were discussed. The exit conference was held with the officers of the Government and the University in September 2018. Deliberations of exit conference and replies of the University have been appropriately incorporated.

2.1.5 Audit criteria

The audit criteria were derived from the following sources:

- Act and Statutes of the University;
- Account Code Volume I and II of the University;
- Detailed project reports and their guidelines; and
- Norms and targets of research work fixed in detailed project reports

⁵ (i) College of Agriculture, Hisar; (ii) College of Agriculture, Kaul and (iii) College of Basic Sciences and Humanities, Hisar.

⁶ (i) Karnal and (ii) Kaul.

⁷ (i) Fatehabad, (ii) Jhajjar, (iii) Jind, (iv) Kaithal, (v) Panipat, (vi) Rohtak and (vii) Sadalpur (Hisar).

⁸ (i) Ambala and (ii) Karnal.

Audit findings

2.1.6 Financial management

Funds are provided to the University by the State Government, Indian Council of Agricultural Research (ICAR) and other agencies. In addition, the University also generates resources from outside agencies through various projects besides income earned through testing fees.

2.1.6.1 Receipts and expenditure

The details of receipts and expenditure of the University during 2013-18 are depicted in **Table 2.1**.

Table 2.1: Details of receipts and expenditure of the University

(₹ in crore)

Year	Opening balance	Receipts					Expenditure	Closing balance
		Grants-in-aid from State Government (Non-Plan/Plan)	ICAR	Other Agencies ⁹	University income	Total funds		
2013-14	63.12	260.16 (67.08)	34.21 (8.82)	12.51 (3.23)	17.82 (4.59)	387.82	324.97 (83.79)	62.85 (16.21)
2014-15	62.85	231.66 (63.95)	36.81 (10.16)	11.30 (3.12)	19.63 (5.42)	362.25	353.03 (97.45)	9.22 (2.55)
2015-16	9.22	320.17 (77.07)	48.23 (11.61)	20.29 (4.88)	17.52 (4.22)	415.43	357.10 (85.96)	58.33 (14.04)
2016-17	58.33	320.31 (71.27)	43.02 (9.57)	9.70 (2.16)	18.07 (4.02)	449.43	378.76 (84.28)	70.67 (15.72)
2017-18	70.67	358.08 (71.98)	33.73 (6.69)	22.25 (4.41)	19.75 (3.91)	504.48	425.29 (84.30)	79.19 (15.70)
Total		1490.38	196.00	76.05	92.79		1839.15	

Note – Figures in parenthesis are percentage to total funds.

*** The figures for 2017-18 are tentative.**

(Source: Data provided by the University)

As is evident from the above table, during 2013-18 the receipts of the University were mainly from grants-in-aid by State Government and ranged between 63.95 and 77.07 *per cent* of annual available funds. The funds received from ICAR ranged between 6.69 and 11.61 *per cent*. Expenditure of the University ranged between 83.79 and 97.45 *per cent*. Further, there were substantial closing balances every year ranging between 14.04 and 16.21 *per cent* of total available funds except for the year 2014-15 (2.55 *per cent*).

⁹ Rashtriya Krishi Vikas Yojana (RKVY), Department of Biotechnology, Department of Science and Technology and various departments/organisations of State Government

The University stated (May 2018) that while raising a demand to the State Government/other financing agencies, the funds needed for vacant posts were also included. Due to non-filling up of these vacant posts/retirement of existing employees, the funds received remained unutilised. It was also added during exit conference that savings during 2017-18 were due to non-revision of pay scales of teachers. Thus, the University had framed the budget of vacant posts continuously for years without taking into consideration the posts likely to be filled up during the year.

2.1.6.2 Non-utilisation of grants being unclassified

Scrutiny of records revealed that there were unclassified grants (amount for which the source and purpose not known) to the tune of ₹ 9.27 crore¹⁰ during 2013-14 to 2017-18 with the University. Out of this, grants to the tune of ₹ 6.15 crore¹¹ were adjusted leaving a balance of ₹ 3.12 crore as unclassified. **Audit observed that the University had not taken up the matter with the funding agencies or tried to reconcile the funds with receipts in banks and try to match it with purpose of grants/projects.**

The University stated during exit conference that on being pointed out by audit, it had approached bank authorities to include the names of funding agencies. It was also assured that care would be taken to clear the unclassified grants.

2.1.6.3 Outstanding temporary advances

Paragraph 6.13 of Account Code Volume-1 of the University provides that temporary advances (TA) drawn for a specified purpose should be adjusted within one month of their drawal.

Scrutiny of records revealed that temporary advance of ₹ 28.45 crore¹² remained unadjusted till 31 January 2018. In the absence of adjustment of advances, their actual utilisation could not be ascertained. Audit further observed that temporary advances of ₹ 1.86 crore were pending for more than five years.

The University stated (March 2018) that continuous efforts were made to adjust maximum temporary advances by holdings meetings with controlling officers of departments. The reply was not correct as outstanding temporary advances were

¹⁰ 2013-14: ₹ 0.02 crore, 2014-15: ₹ 0.05 crore, 2015-16: ₹ 0.12 crore, 2016-17: ₹ 1.74 crore and 2017-18: ₹ 7.34 crore.

¹¹ 2015-16: ₹ 0.04 crore, 2016-17: ₹ 0.92 crore and 2017-18: ₹ 5.19 crore.

¹² Prior to 2013-14: ₹ 1.86 crore, 2013-14: ₹ 0.58 crore, 2014-15: ₹ 0.70 crore, 2015-16: ₹ 2.70 crore, 2016-17 : ₹ 16.21 crore, 2017-18: ₹ 6.40 crore (upto January 2018)

increasing year after year. During exit conference, the University stated that outstanding temporary advances had reduced to ₹ 22.22 crore.

Non-adjustment of temporary advances for long periods carries the risk of misappropriation of funds.

2.1.6.4 Submission of incorrect Audit Utilisation Certificates

Audit Utilisation Certificates (AUCs) should be submitted as per the actual expenditure incurred for the purpose for which the funds were sanctioned. Audit observed that incorrect AUCs for ₹ 4.66 crore were submitted as per details given in Table 2.2.

Table 2.2: Details of incorrect Audit Utilisation Certificates

(₹ in lakh)

	Details of funds received		Amount utilised/balance funds		Details of AUC sent		Amount of incorrect AUC
	Amount	Month of receipt	Utilised	Balance	Amount	Month	
Establishment of Community Radio Station (Director, Extension Education)	118.45	November 2011 to April 2012	60.62	57.83	118.45	August 2012	57.83
Special grant for strengthening/New initiative in teaching, research and capacity building programme (Director of Research)	430.00	March 2013	100.00	330.00	429.98	October 2013	330.00
	310.00	March 2015	217.00	93.00	295.64	December 2015	78.64
Total	858.45		377.62	480.83	844.07		466.47

(Source: Data supplied by the University)

The University while admitting the facts stated during exit conference that in future utilisation certificates would be sent on the basis of actual utilisation of funds.

Submission of incorrect AUCs is fraught with the risk of misappropriation of funds.

2.1.7 Academic activities

2.1.7.1 Under-enrollment of students

The University offers undergraduate/post graduate courses in B.Sc. (Hons.) Agriculture/Community Science; B. Tech. (Agriculture Engineering), PG diploma in Communications Skills in English/English Hindi Translation/Remote Sensing

and Geographical Information System, application in Agriculture and Environment; M.Sc. Bio-Chemistry/Chemistry/Botany/Micro Biology, MBA (General/Agri business), Ph.D. in Bio-Chemistry/Chemistry/Botany/Micro Biology, etc. As against the intake capacity of 3,834 students, actual enrollment was 3,733 students in various courses during 2013-18. The courses in which under-enrollment of students was noticed with reference to intake capacity for the period 2013-18 is depicted in **Table 2.3**.

Table 2.3: Details of under-enrollment of students

Sr. No.	Name of College	Name of Course	Intake capacity	Actual enrollment	Percentage of under enrollment
1	College of Agriculture, Hisar	PG Diploma	50	22	56
		MBA	198	119	40
2	College of Basic Sciences and Humanities, Hisar	M.Sc.	251	223	11
		PG Diploma	200	108	46
3	Indira Chakravarty College of Home Science, Hisar	B.Sc. (Hons.)	410	379	8
		M.Sc.	157	146	7
		Ph.D	77	62	19

(Source: Data supplied by the University)

As is evident from the table, shortfall in respect of PG Diploma and MBA courses was alarming and ranged between 40 and 56 per cent. This has resulted in under utilisation of academic infrastructure.

The Dean, College of Agriculture, Hisar stated (April 2018) that under-enrollment in PG Diploma was due to waning opportunities for the diploma in public as well as private sector. For MBA course, from academic session 2017-18 the University has adopted the policy of converting vacant seats of MBA (General) to MBA (Agribusiness) and vice-versa for better utilisation of University resources.

The University needs to review the existing curriculum for converting these courses into other need driven courses for optimum utilisation of infrastructure and resources.

2.1.7.2 Shortage of staff

The sanctioned strength and men-in-position of the University as on 31 March 2018 was as given in **Table 2.4**:

Table 2.4: Details showing sanctioned strength, men in position and shortage

Name of post/cadre	Sanctioned Strength	Men in position	Shortage	
			Shortage	Percentage
Deans/Directors/Addl. Director	12	8	4	33
Regional Directors	2	NIL	2	100
Professors & equivalent/Librarian ¹³	39	2	37	95
Associate Professors & equivalent/Dy. Librarian	192	11	181	94
Asstt. Professors & equivalent/Asstt. Librarian	797	444	353	44
Total	1,042	465	577	55
Non-teaching staff	3,107	1,845	1,262	41

(Source: Data compiled from the records of the University)

As evident from above, there was a shortage of 55 *per cent* teaching staff and 41 *per cent* of non-teaching staff. There was an acute shortage of teaching staff in the main teaching departments of Colleges of Agriculture as detailed in **Table 2.5**.

Table 2.5: Details showing shortage of staff in main teaching departments

Name of discipline/department	Sanctioned Strength	Men in position	Shortage	
			Shortage	Percentage
Soil Science	95	25	70	74
Agronomy	110	57	53	48
Genetics and Plant Breeding	133	46	87	65
Plant Pathology	65	29	36	55
Entomology	60	26	34	57
Horticulture	46	24	22	48
Vegetable Science	43	21	22	51
Agri. Economics	43	17	26	60
Seed Science and Technology	11	2	9	82
Total	606	247	359	59

The University stated (June 2019) that work of the University was being carried out by allotment of additional duties to the existing faculty members in addition to their own duties to overcome the shortage of staff.

Shortage of staff resulted in non-utilisation of soil testing kits at three¹⁴ KVKs; non-operation of soil testing laboratory at KVK Ujha (Panipat) and Tissue Culture Laboratory at RRS Uchani (Karnal). Expenditure of ₹ 3.76 crore incurred on development of Organic Food Laboratory, Hisar remained unfruitful since the laboratory could not be made functional due to shortage of required manpower.

¹³ Teaching post includes Librarian, Dy. Librarian and Assistant Librarian

¹⁴ Fatehabad, Jhajjar and Sadalpur (Hisar)

The position of staff in test checked nine KVKs is given in **Table 2.6**.

Table 2.6: Details showing sanctioned strength, men in position and shortage of staff in nine KVKs

Name of post	Sanctioned Strength	Men in position 2013-14	Men in position 2017-18
Programme/Senior Co-ordinator	8	8	3
Subject Matter Specialists	56	43	30
Programme Assistants	21	15	10
Non-Technical staff	69	45	37
Total	154	111	80

(Source: Data compiled from the records of the University)

As depicted from the table above, only 50 *per cent* technical staff was in position in 2017-18. Further, in two test checked Regional Research Stations against the sanctioned strength of 148, only 76 employees (shortage of 49 *per cent*) were posted.

The University stated (February 2018) that the vacant posts of non-teaching staff could not be filled up through direct recruitment due to ban imposed by State Government. It was further added during exit conference that ban on filling up of posts was lifted in June 2017 and the University had filled up 97¹⁵ teaching posts and additional advertisement (September 2018) for more than 300 posts had been made.

The number of sanctioned posts which was fixed in 1970 has not undergone any revision. The University may undertake review for assessing the adequacy of sanctioned posts keeping in view changes in actual enrolment and demand for various courses/disciplines.

2.1.7.3 Campus placement

The University had established a Career Counselling and Placement cell in 1970. The placement position against enrollment of undergraduate and post graduate students during 2013-14 to 2016-17 is depicted in the **Table 2.7**.

¹⁵ In 2017: 66 and in 2018: 31.

Table 2.7: Placement position against enrollment

Year	Course	Passed	Enrolled	Placement
2013-14	Under Graduate	271	125	80
	Post Graduate	199		
2014-15	Under Graduate	219	135	84
	Post Graduate	244		
2015-16	Under Graduate	282	110	65
	Post Graduate	241		
2016-17	Under Graduate	293	130	78
	Post Graduate	270		

(Source: Data provided by the University)

As evident from the above table, 59 *per cent* to 64 *per cent* students were placed at various organisations such as banking sectors, industries, corporations, pharmaceutical companies, etc., during the aforesaid period. Besides this, 177 students were selected directly in Universities, Colleges, Government sectors, etc.

2.1.7.4 NAAS rating of publications

The National Academy of Agricultural Sciences (NAAS) focuses on the broad field of agricultural sciences including crop husbandry, animal husbandry, fisheries, agro-forestry and interface between agriculture and agro-industry. The main objective of NAAS is to recognize and promote excellence of individual scientists in these fields. Impact Factor¹⁶ (IF) assigned by Thompson Reuters (TR) is globally recognized indicator for assessing journals. If the articles published one or two years ago have been cited one time, then the IF is assigned as 1 by TR and if the articles published have been cited three times, then IF is assigned as 3 by TR. For determining score of research journals, the Academy has classified them into the following two categories:-

Category I: Those journals where Thompson Reuters Impact Factor is available, the scores are assigned as 6.00 + Impact Factor with capping on 20.00.

Category II: Those journals where Thompson Reuters Impact Factor is not available, the marks are assigned on the basis of information provided by the Publishers in a proforma prescribed by the Academy.

NAAS ratings of six and above is considered to have impact factor. So, the higher the NAAS rating of journals, the higher is the impact factor.

¹⁶ The Impact factor is a measure of the frequency with which the average article in a journal has been cited in a particular year. It is used to measure the importance or rank of a journal by calculating the times its articles are cited.

Out of six constituent colleges, four¹⁷ conduct post graduate programmes. A total of 1,660 publications were printed in various journals, out of which only 211 publications could find a place in journals with NAAS ratings above 6. This shows that only 13 *per cent* of publications could be printed in journals of repute.

The University stated (September 2018) that with a view to encouraging teachers and scientists to publish good quality research papers, it has made provision of evaluation of the teachers/scientists on the basis of number of publication of research papers with NAAS rating more than six and this has been added as a parameter in Annual Self Assessment Report.

2.1.7.5 Lack of basic amenities in the hostels

As per ICAR guidelines (September 2013), the hostel buildings should have one water closet (WC) for five students, one bathroom for four students, one urinal for ten students and one washbasin for eight students. There were five boys' hostels and seven girls' hostels in the University campus.

Scrutiny of records revealed that there was shortage of water closet ranging between 6 *per cent* and 54 *per cent* in four boys' hostels except Triveni hostel and three¹⁸ girls' hostels, shortage of bathrooms ranging between 19 *per cent* and 63 *per cent* in all hostels except four¹⁹ girls' hostels, shortage of urinals ranging between 25 *per cent* and 48 *per cent* in three²⁰ boys' hostels and shortage of washbasins ranging between 10 *per cent* and 18 *per cent* in four²¹ boys' hostels as depicted in **Appendix 2.1**. Thus, the hostels lacked basic amenities with reference to ICAR norms.

¹⁷ (i) College of Agricultural Engineering and Technology, Hisar; (ii) College of Agriculture, Hisar; (iii) College of Basic Sciences and Humanities, Hisar and (iv) Indira Charavarty College of Home Science, Hisar.

¹⁸ (i) Gangotri (New Wing), (ii) Gangotri (Old Wing) and (iii) Godavari.

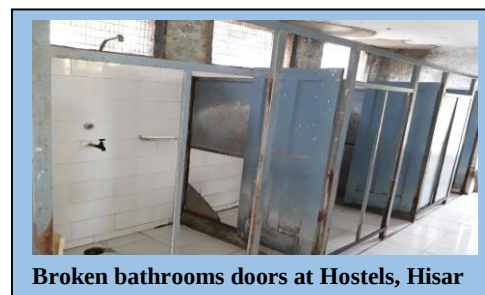
¹⁹ (i) Gangotri (Addl. Wing), (ii) Women Scholar, (iii) Yamunotari and (iv) Narmada.

²⁰ (i) Vrindavan, (ii) Ajanta and (iii) Vindhyaachal.

²¹ (i) Vrindavan, (ii) Ajanta, (iii) Vindhyaachal and (iv) Triveni (INH).

2.1.7.6 *Poor maintenance of hostels*

There are twelve hostels (five for boys and seven for girls) for students in University Campus. A joint inspection of these hostels along with staff of the University was conducted in March 2018. It was observed that the maintenance of two of the boys' hostels i.e. Ajanta and Vindhyachal was very poor as there were open electric panel boards, hanging electric fittings all around, wash basins without mirrors or with broken mirrors, broken toilet flush and broken bathroom doors and partitions.



Broken bathrooms doors at Hostels, Hisar

Similarly, in Brahamsarovar (Boys) Hostel at Kaul, there were unhygienic conditions in toilets and sewer disposal system was not proper. Garbage was lying all around the hostel.

The University stated during exit conference that ICAR had sanctioned ₹ three crore for repair and renovation of hostels and these issues would be taken care of.

2.1.7.7 *Non-maintenance/non-functioning of libraries*

There were three libraries under the University (one each at University campus, Hisar, CoA Kaul and EEI Nilokheri). Scrutiny of records and joint physical verification of CoA, Kaul revealed that the internet connection at library was out of order for more than one year. Ceiling fans at reading hall were not installed (since January 2017) after repairs. Book bank had poor lighting facility. Similarly, the library in the office of the Regional Director, Extension Education Institute (EEI), Nilokheri was also lying non-functional since August 2008 due to shortage of staff for the library. Functioning of library at University campus, Hisar found satisfactory.

The Principal CoA, Kaul stated (February 2018) that purchase of 150 ceiling fans and 250 tubelight sets was in process. Complaints had been lodged with Bharat Sanchar Nigam Limited for repair of broadband services while the Regional Director, EEI, Nilokheri admitted the facts.

2.1.7.8 *Non-functioning of laboratories*

All the 119 laboratories existed in selected units were test checked during performance audit. Five out of 14 laboratories in the two test checked Regional Research Stations (Karnal and Kaul), two out of eight laboratories in nine KVKs and one laboratory (Organic Food Laboratory) out of 97 laboratories at HAU campus in Hisar were lying non-functional due to non-availability of skilled

staff/lack of infrastructure. A detailed report of one of the non-functional laboratories is as under:

Non-functional tissue culture laboratory

Tissue Culture Laboratory is used for fast and disease free seed multiplication of newly identified/released varieties of sugarcane. The seed multiplication ratio in crops using conventional methods is 1:10, whereas by use of tissue culture it is 1:10000. Audit observed that the tissue culture laboratory (established in 1997) located at Regional Research Station, Karnal had been lying abandoned since the retirement of the specialised scientist in November 2013.



The Regional Director, RRS Karnal admitted (December 2017) that due to retirement of the scientist, the laboratory was lying non-functional and they had made many efforts for getting the vacant post filled.

Due to non-function of this laboratory, fast and disease free seed multiplication of newly identified/released varieties of sugarcane had been adversely affected.

2.1.7.9 Security arrangements in hostels- CCTV cameras not functional

Joint inspection (February 2018) of COA, Kaul revealed that out of 45 CCTV cameras, 14 cameras installed at library (inside and outside) and nine cameras at other places in the college were found out of order. Further scrutiny of records revealed that the CCTV cameras in the library were not functional since April 2015.

Out of 12 hostels in the University campus at Hisar, only three hostels i.e. Gangotri (New Wing), Gangotri (Old Wing) and Gangotri (Addl. Wing) were equipped with firefighting extinguishers/appliances.

The University stated (September 2018) that the CCTV cameras were being repaired. As regards firefighting extinguishers, it was stated that these would be installed in hostels wherever these were not available.

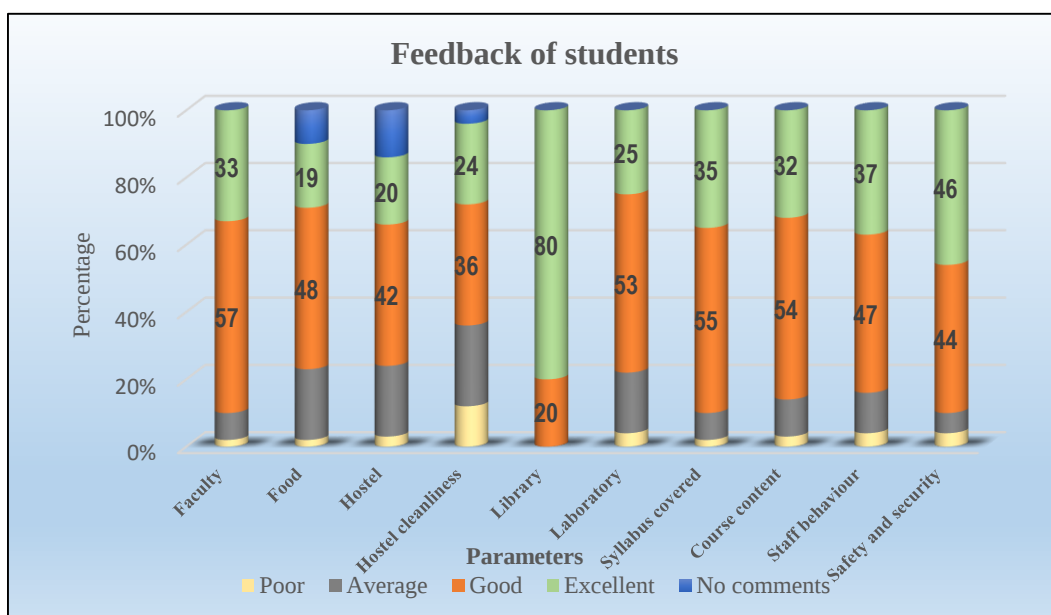
Thus, there was under enrollment of students. Lack of basic amenities in hostels, poor maintenance of hostels, inadequate security arrangement in hostels, lack of library facilities, etc., impacted adversely on academic activities of students.

2.1.7.10 Performance feedback of students

Proper mechanism had not been evolved to take feedback from students for the redressal of their grievances on various issues. During performance audit, out of 1151 students, feedback of 100 students of two²² test checked colleges located at Hisar was taken through the questionnaire method in the presence of authorities of the University in order to assess their satisfaction level. The students were asked to rate the University on various parameters. Analysis of the survey data revealed in Table 2.8.

Table 2.8: Feedback of students on various parameters for rating the University

Activities	Percentage of students who rated the facilities				
	Poor	Average	Good	Excellent	No comments
Faculty	2	8	57	33	0
Food	2	21	48	19	10
Hostel	3	21	42	20	14
Status of cleanliness in Hostels	12	24	36	24	4
Library	0	0	20	80	0
Laboratory	4	18	53	25	0
Syllabus covered	2	8	55	35	0
Course content	3	11	54	32	0
Behaviour of administrative staff	4	12	47	37	0
Safety and security	4	6	44	46	0



²²

1. College of Agriculture, Hisar; 2. College of Basic Sciences and Humanities, Hisar

36, 22, 24 *per cent* of students were not satisfied with cleanliness of hostels, laboratories facilities and hostel facilities respectively which have also been revealed in test check of records/joint physical inspection.

2.1.8 Research activities

2.1.8.1 Research projects

The University is undertaking multidisciplinary research in the field of agriculture and allied sciences at main campus Hisar as well as outreach research stations situated in different agro-climatic zones of the State. The research activities mainly comprise of development of high yielding seed varieties, improvement of technologies, control of plant diseases, etc. The newly conceived/developed varieties are tested by way of Front Line Demonstrations (FLDs). Through FLDs the technologies are demonstrated to farmers for the first time by the scientists before being adopted into the extension system of the State Department of Agriculture.

Details of ongoing, new and completed research projects during 2013-18 are shown in the **Table 2.9**.

Table 2.9: Details of on-going projects and new projects during 2013-18

Funding agency/authority	On-going projects at the beginning of April 2013	New Projects (2013-14 to 2017-18)	Total
State Government	70	2	72
ICAR (AICRP) 75:25	44	0	44
ICAR (Adhoc)	16	38	54
Total	130	40	170

(Source: Data supplied by the University)

A major portion of the expenditure on the above projects is on salaries and these projects do not have any target date of completion.

Research programmes (activity) which were taken up with the funds of other agencies²³ and had target date of completion are summarized in **Table 2.10**.

²³ Rashtriya Krishi Vikas Yojna (Ministry of Agriculture and Farmers Welfare); University Grants Commission (UGC); Ministry of Science and Technology, Department of Bio-technology (DBT), New Delhi; National Medicinal Plants Board, Ministry of Health and Family Welfare, Department of AYUSH, New Delhi; Haryana State Horticulture Development Agency, Panchkula, etc.

Table 2.10: Details of ongoing projects, new projects, completed projects which are funded by other agencies during 2013-18

Funding agency/authority	On-going projects at the beginning of April 2013	New Projects (2013-14 to 2017-18)	Total	Completed projects (2013-14 to 2017-18)	On-going projects at the end of March 2018
Others	38	62	100	49	51

(Source: Data supplied by the University)

49 out of 100 projects were completed. Scrutiny of records revealed the following:

- Only two (1: 2013-14 and 1:2015-16) research programmes were taken up under State Schemes. While in case of ICAR (All India Coordinated Research Project (AICRP)-75:25), no new research programme had been taken up for the last nine years.
- Out of 49 completed research programmes relating to other funding agencies, 26 research programmes were delayed by one to nine years due to non-receipt of funds, delayed receipt of funds, time taken for procurement of equipment from outside India, etc. Out of 51 ongoing research programmes, seven were behind schedule by one to two years due to non-receipt of funds/late receipt of funds. The University stated (June 2018) that the delay in completion of projects was got revalidated from funding agencies. Audit is of the opinion that time schedule fixed for completion of research projects should be adhered to through better monitoring.

Out of 100 ongoing/completed projects funded by other agencies, 27 projects were selected for detailed scrutiny. Audit observed the shortcomings in implementation of the projects in respect of 10 projects as summarised below:

Sr. No.	Name of Projects	Brief facts	Audit observations
1	Post-harvest management techniques for horticultural produce project	The project was sanctioned (June 2014) by Government of India (GoI) under Rashtriya Krishi Vikas Yojana (RKVY) for ₹ 1.89 crore and was to be implemented at Hisar within a period of three years (2014-17). The objective was to assess various horticulture produce under cold and controlled atmosphere (CA) storage for their life storage and workout year round availability to avoid glut. Under the project, the laboratory was to be upgraded and infrastructure facilities were to be created in the first year. In the second year, fruits, flowers, etc., were to be stored at different temperatures under cold and CA conditions using different packaging material for extension of their shelf life. In the third year, demonstration of	No feasibility report was prepared before setting up the project as a result of which the machinery was purchased without ensuring the availability of fruits in adequate quantities for processing. Further, the infrastructure facilities which were to be created in the first year i.e. 2014-15, could be completed only during 2018-19. The third component of the project viz. demonstration of technology to farmers and youth has not been done yet. Thus, even after incurring an expenditure of ₹ 1.89 crore, the

Sr. No.	Name of Projects	Brief facts	Audit observations
		technology was to be given to farmers and unemployed youth were to be sensitized about the technology through trainings. ₹ 1.89 crore released (₹ 1.40 crore: December 2014 and ₹ 0.49 crore: October 2015) by the funding agency were fully utilised for purchase of machinery, equipment and other components during 2015-18. However, during joint inspection (May 2018) of site, it was found that all the equipment/machinery were lying unutilised since electrical connection of requisite load for making the machinery and equipment functional was not in place. However, the work of Installation of new electric/transmission line was completed in June 2018. The sorting and grading of fruits machine purchased (May 2016) at a cost of ₹ 30 lakh was not being used because availability of fruits in the experimental orchard of the University was not sufficient to optimally utilise the machine.	desired benefit could not reach the intended beneficiaries.
2	Detection, diagnosis and documentation of plant diseases and microorganisms	The project was sanctioned (July 2015) by GoI under RKVY for ₹ 5.75 crore and was to be completed by 2017-18. The objective of the project was to increase average productivity of agriculture produce by detecting and diagnosing new plant diseases. Two major equipment i.e. Confocal Microscope (worth ₹ 3.50 crore) and Electron Microscope (worth ₹ 1.80 crore) were required to be purchased under the project. The funding agency released ₹ 4.35 crore²⁴ in four installments for implementation of the project but the University could utilise only an amount of ₹ 12.49²⁵ lakh on purchase of equipment and balance amount of ₹ 4.23 crore was lying unutilised. During exit conference (September 2018) it was stated that specifications of equipment (Electron Microscope) were being redefined as electron microscope was found to be very expensive and assured that the project would be completed soon.	Although ₹ 4.35 crore had been received by December 2017, the University failed to purchase the Confocal Microscope. Further, redefining the scope for purchase of Electron Microscope after a period of three years from date of sanction of the project shows an indifferent approach of the University. Thus, delay in implementation of the project led to non-utilisation of funds besides depriving the farmers of intended benefits of the project.

²⁴ December 2015: ₹ 0.77 crore, March 2016: ₹ 0.53 crore, July 2017: ₹ 0.58 crore and December 2017: ₹ 2.47 crore.

²⁵ ₹11.90 lakh (Refrigerator, Laminar Flow, PCR and Gel Doc) in 2015-16 and ₹ 0.59 lakh (pH meter) in 2017-18.

Sr. No.	Name of Projects	Brief facts	Audit observations
3	Farmers knowledge base about scientific cultivation of forage crops for higher green fodder	The project was sanctioned (July 2015) by GoI under RKVY for ₹ 52 lakh and was to be implemented in 20 districts in which training to 60 farmers was to be imparted in each district. Further feedback from farmers regarding success of project was to be obtained in the second year (2016-17). An expenditure of ₹ 46.73 lakh was incurred (2015-18) on organising training and purchase of different items for imparting training. One day training programme in 20 districts was held, in which 60 farmers from each district participated.	Audit party alongwith representative of the University conducted survey of beneficiary farmers who had taken training in five districts (Kaithal, Jhajjar, Rohtak, Sadalpur (Hisar) and Panipat). Out of 300 farmers, 171 farmers could be physically contacted and 77 were contacted over telephone and 52 farmers could not be contacted. All the 248 farmers contacted stated that they had taken the training and the training was beneficial to them. However the University did not have a follow-up mechanism for assessing the impact/outcome of training nor had they obtained feedback from farmers for ascertaining whether they had adopted the new technology. During exit conference, it was stated that feedback from the farmers was regularly being taken whenever they visited the KVKs and whenever their scientists visited the fields. However, no document was produced to audit in support of this contention.
4	Establishment of laboratory to mass culture the entomopathogenic fungi, beauveria bassiana and lecanicillium lecanii and their maintenance	The project was sanctioned (July 2015) by GoI under RKVY for ₹ 20.56 lakh and was to be completed within two years (up to 2016-17). The objectives of the project were maintenance of cultures of the fungi under laboratory conditions, to evaluate its efficacy against lepidopterous and sucking insect pests in different crops and to create awareness among farmers about this technology. For this, renovation/restructuring of existing laboratory was required to be done and the same was to be completed in the first year (2015-16) and mass culturing of fungi was to be undertaken from the second year. An amount of ₹ 17.37 lakh was released during 2015-16. Out of this, an amount of ₹ 13.03 lakh was spent on procurement of laboratory equipment during 2015-17. An amount of ₹ 4.33 lakh was transferred (January 2017) by Department of Entomology (CoA, Hisar) to the Engineering Wing of the University for renovation of laboratory after a delay of approximately 15 months from date of release of funds, as a result of which, the work could be completed only in September 2018.	Delay in completion of renovation work resulted in delay in commencement of the project and deprived the farmers from getting the timely benefits of the project.

Sr. No.	Name of Projects	Brief facts	Audit observations
5	Laboratory for organic food analysis	The project was approved (May 2010) by GOI under RKVY for ₹ 3.76 crore with a time period of one year. Growers were to be provided certificate of organically grown produce for which NABL (National Accreditation Board for Testing and Calibration Laboratories) accreditation was mandatory. The laboratory was developed at the cost of ₹ 3.76 crore including cost of machinery and equipment ₹ 3.27 crore in June 2015.	Due to non-availability of adequate/skilled staff, the laboratory could not get NABL accreditation and remained non-functional (May 2018). Farmers too could not get the required benefit from the laboratory.
6	Setting up of Facilitation Centres for medicinal plants	National Medicinal Plant Board, Ministry of Health and Family Welfare, GoI approved (January 2008) setting up of Facilitation Centres for medicinal plants with a view to providing a single window service on all aspects relating to medicinal plants i.e. selection of Medicinal Aromatic Plant (MAP) from the state, authentication of quality raw materials on the basis of taxonomic identification and chemical parameters, act as a clearing house of information on elite germ plasm to be cultivated, varieties to be taken up, source of germ plasm varieties, etc, to oversee/monitor production of quality planting material by various agencies, providing testing facilities for material produced, providing training in the formulation of projects of medicinal plants cultivation and development, organization of frequent buyer-seller meets, publish and disseminate information on agro-techniques, markets, prices, mandies, traders, industries etc, in local languages, etc for ₹ 30 lakh. The project was to be implemented in three years. ₹ 12 lakh and ₹ 9.25 lakh were released in March 2008 and February 2012 respectively by the funding agency. The University utilised only ₹ 12.70 lakh upto 2012-13 on salary, equipment, training, etc. The University, however, sent Audit Utilisation Certificate (AUCs) for the year 2007-08 to 2010-11 in September 2011 and for the year 2011-12 in September 2013.	Due to slow pace in implementation of project and delay in sending the AUCs to the funding agency, the balance funds were not released by the funding agency. Finally, the funding agency did not grant further extension and sought (July 2014) refund of unspent funds. The University had to refund (October 2014) the balance unspent amount of ₹ 8.69 lakh (including other receipts from the project). Thus, the project was closed midway and objectives of the project remained unachieved.
7	Development of chickpea genotypes to mitigate terminal heat and drought stress for enhancing productivity in rainfed areas of Haryana	The project was sanctioned (July 2016) by GoI under RKVY for ₹ 60 lakh and its duration was three years (2016-17 to 2018-19). During first year screening of chickpea genotypes for heat and drought tolerance using morpho-physiological parameters, during second year development of promising chickpea genotypes combining higher yield with heat and drought tolerance through hybridization and during third year selection and evaluation of	The College undertook the activities of screening of chickpea genotype in second and third year instead of taking this up in first year as envisaged in the project report. The other components of the project i.e. development of promising chickpea genotypes combining higher yield with heat and drought tolerance through hybridization,

Sr. No.	Name of Projects	Brief facts	Audit observations
		promising chickpea genotypes using morpho-physiological parameters were to be undertaken and in the end dissemination and demonstration of the new chickpea cultivars in farmers' field was to be done. An amount of ₹ 55.39 lakh was released during November 2016 and March 2017. The College failed to utilise the funds in the first year i.e 2016-17. During 2017-18, the University could utilise ₹ 32.64 lakh only on purchase of equipment, chemicals, contractual services, etc.	selection and evaluation of promising chickpea genotypes using morpho-physiological parameters and dissemination and demonstration of the new chickpea cultivars in farmers' field had not been undertaken yet.
8	Fish Health Management through Herbal Materials and vermi technology for sustainable aquaculture	The scheme was sanctioned (December 2012) by Department of Science and Technology, GOI for ₹ 26.53 lakh. The project was to be completed in 36 months. The objective of the project was to screen and evaluate the efficacy of certain medicinal plants commonly available in Haryana for using them as potential alternative to chemicals/antibiotics; to screen and evaluate anti-oxidative properties of paste of earthworm species commonly found in Haryana. An amount of ₹ 14.99 lakh was released (December 2012) as first installment for execution of the project and ₹ 13.54 lakh was spent on implementation of the scheme during 2012-13 to 2016-17.	No funds were further released by GoI due to slow implementation of the scheme. The scheme was abandoned and the balance amount of ₹ 1.45 lakh was returned to the funding agency in May 2017. Thus, the scheme was not properly implemented and objectives of the scheme remained unachieved.
9	Demonstration and adaptation of Dryland Technologies at Farmers Fields	To sustain the rural livelihood in dryland areas and to break the food grains' production plateau, the project was sanctioned (August 2013) by GoI under RKVY for ₹ 16.25 lakh. Duration of the project was three years i.e. 2013-14 to 2015-16. A total of 350 farmers in each cropping season were to be covered for pearl millet, mungbean, chickpea and mustard. High Yield Variety (HYV) seeds of all these crops suited to dryland were to be provided. An amount of ₹ 8.13 lakh was allocated (October 2013) as first installment for execution of the project and the amount was spent²⁶ during 2013-14 to 2016-17.	As against the target of covering 1,050 farmers in three years, only 173 farmers were covered during this period. Further, no follow up to assess the outcome of the project was made as no data was collected as to whether the farmers had adopted the techniques of dryland farming.
10	Honey Bee project	GoI approved (November 2009) a four year project "Technology Transfer on Role of Honey-bee in improving production technology and quality of horticultural crops" under National Horticulture Mission for ₹ 34 lakh. The expected output of the project was the sale of commercial pollinators and generating gainful employment for farmers. An amount of ₹ 34 lakh was provided (December	The project could not be implemented in right earnest and commercial pollination could not be undertaken due to shortage of Entomologists in the Regional Research Station, Karnal. No additional Entomologist was posted for the project after March 2015. No training was imparted after

26

2013-14: ₹ 4.70 lakh, 2014-15: 1.17 lakh, 2015-16: ₹ 0.98 lakh and 2016-17: ₹ 1.28 lakh.

Sr. No.	Name of Projects	Brief facts	Audit observations
		2009) by Haryana State Horticulture Development Agency. An expenditure of ₹ 6.12 lakh was incurred during 2010-11 to 2014-15 mainly on imparting training to farmers.	2014-15. Since the funds were lying unspent with the University, the funding agency sought the refund of unspent balance of ₹ 27.88 lakh and the amount was refunded in August 2015. Thus, the objective of the scheme of employment generation remained unachieved to a large extent.

Out of 27 research projects test-checked, five projects were ongoing and 12 projects were completed. There was no formal system in the University for dissemination of research results to farmers. Results of research were submitted to the funding agency. There was no audit trail for ascertaining whether the results of the test checked research projects were extended to intended beneficiaries. As a result, the outcome of completed research works could not be ascertained in audit.

In remaining 10 projects, four projects remained incomplete, one was completed after abnormal delay, three were abandoned and two projects impact was not assessed by the University. Thus, the objectives of sensitizing the farmers and unemployed youth for adopting improved agricultural techniques/practices and post-harvest management could not be fully achieved.

Since seven projects (26 per cent) of the test checked projects had either been abandoned or had not been completed, it is recommended that the University may review the progress of all the ongoing research projects with a view to achieve the intended outcomes.

2.1.8.2 Non-release of crop varieties for dryland by Dryland Department

All India Coordinated Research Project (AICRP) on Dry Land Agriculture was taken up during 1971 to develop suitable crop varieties with higher yield potential in crop specific areas to cater to the needs of farming community by generating technologies suitable for dry land farming.

An expenditure of ₹ 20.57 crore was incurred on establishment and contingencies of Dryland Department during 1976-77 to 2017-18 (expenditure for the period 1971-72 to 1975-76 not available with the University). Audit observed that only two crop varieties were released under the project long back in 1983 and 1987 as per detail given below:

Crop	Variety	Year of release
Mungbean	S-9	1983
Cowpea	Charodi	1987

It was stated (June 2019) by the University that presently seeds of above varieties are not being produced by the University since these varieties are no longer popular due to availability of high yielding varieties. Further, the University has no record regarding their level of adoption at the time of release.

No new crop variety for dryland was released by the department after 1987. The department is mainly engaged in technology transfer of dryland farming among farmers and research activities on dryland farming. The Project Coordinator, AICRP for dryland agriculture during his visit to Hisar Centre in July, 2016 also pointed out that technical programme was not being implemented as per the objective theme-wise/experiment-wise data was not being recorded. It was recommended to document impact of doable technologies and to provide period and timely information of technology assessment, refinement and feedback to main centre was not maintained. Despite his recommendations, there was no improvement in the implementation of the project and no new varieties had been developed. Thus, the working of the department was not upto the mark and was not yielding fruitful results.

Since huge expenditure of ₹ 20.57 crore had been incurred on the Department without any fruitful results, the University may review the working of the department.

2.1.8.3 Intellectual Property Rights

Any institution that engages in research activities should strive to obtain Intellectual Property Rights (IPR) on its innovations/inventions/research products and get the rights registered. The University signed (December 2002) a Memorandum of Understanding (MoU) with National Research Development Corporation (NRDC), New Delhi for following up of its IPR cases. This was renewed twice in 2007 and 2013 for a period of five years. The University had been developing technologies since its inception in 1970. However, it had started filing for patent of technologies only 2003. The details of IPR cases filed and rights obtained are given in **Table 2.11.**

Table 2.11: Details of IPR cases filed and rights obtained

Period	IPR cases filed	Rights obtained			(Number of technologies)	
		Patent right	Copy right	Design right	Refused	In process
2002-07	11	1	1	1	1	7
2008-13	31	7	0	0	3	21
2014-18	14	3	0	0	0	11
Total	56	11	1	1	4	39

(Source: Data provided by the University)

As evident from the above table, the University had identified 56 technologies for IPR, out of which IPRs were obtained in respect of only 13²⁷ technologies and four technologies were refused for rights till March 2018. Pendency of IPR applications rose from seven in 2007 to 28 in 2013 and further to 39 as of 31 March, 2018. Despite inefficient and inadequate follow-up by NRDC, the University renewed the MoU with NRDC in 2013 for another spell of five years. Out of these 13 IPR, only three licence agreements in respect of two (Design No. 194255-Indian Gooseberry Pricking Machine and Patent No. 250500-A process of testing Urea in Milk) IPR technologies were signed for commercial use. Apart from hosting the IPR technologies on the website, no further efforts were made to publicise these technologies for commercial use. Further scrutiny of records of the office of the Controller of Patents and Designs, New Delhi revealed that 10 patents had ceased because of non-payment of renewal amount by the University. The maximum period to restore lapsed patents was 18 months which had also expired in these cases.

The Director, HRM stated (September 2018) that the granting of patent is a time consuming process as it depends on type of innovation, material used and hearing/objections by the patent office. It was also added that the University hired the services of a private attorney to expedite the IPR related activities in February 2017.

The University did not get any IPR after July 2014. Even in respect of technologies for which the University got the right, adequate efforts were not made to publicise those technologies for commercial use and to protect their validity by making payment of renewal charges. Thus, interests of the University were not adequately safeguarded.

²⁷ Copyright-1, Design-1 and Patent-11 (10-India, one-Sri Lanka)

2.1.9 Seed production programme

2.1.9.1 Ram Dhan Singh (RDS) Seeds Farm

RDS Seeds Farm was established with the objective of developing and producing quality seeds of major food, fodder, pulses and vegetables, quality planting materials for horticulture and imparting training to rural youth for taking up seed production as an enterprise.

(i) *Non-completion of water distribution network leading to non-utilisation of cultivable land and failure of crops*

During 2013-14 to 2017-18, out of 3,104 acres of cultivable land available with RDS seeds farm, the farm could sow an average of 1,373 acres (44 *per cent*) and 1,555 acres (50 *per cent*) of land during Kharif and Rabi crops respectively. Out of the total land available, 360 acres of land remained undeveloped altogether due to lack of irrigation facility. Further, it was also observed that there was a failure of Kharif crops in the areas ranging between 10.98 and 69.60 *per cent* of cultivated area whereas in case of Rabi crops the failure of crops ranged between 9.03 and 24.36 *per cent* of the total area sown during the aforesaid period. The University stated (March 2018) that major portion of cultivable land is rain fed and lacks irrigation facilities. It also added that shortage of water for irrigation led to failure of crops. However, the University failed to develop water distribution networks despite availability of funds as discussed below:

The State Level Screening Committee (SLSC) sanctioned (June 2014) ₹ 7.85 crore for a project “Infrastructure Development and Production Growth at RDS Seed Farm” under RKVY to be completed within two years. The objective of the project was to meet the growing need for quality seed and planting material by the farmers of the State. Under the project, ponds were to be constructed, piped water conveyance system for irrigation was to be laid, seed testing laboratory was to be set up and seed storage godowns were to be constructed. ₹ 6.85 crore was released to the University during 2014-16. Out of this, funds to the tune of ₹ 3.25 crore were transferred to the Engineering Unit of the University for laying of piped water conveyance system for irrigation after a delay of nearly two years (August 2017). The University has not finalised the scope of the work till date. It was stated by the University that the Irrigation Department had started (August 2018) the work of reconstruction of canal and that on completion of which the work of internal piped water conveyance system would be started. The water conveyance system is internal structures to be developed for optimum utilisation of irrigation water available in the concerned Minor. The University should have utilised the released funds for constructing the internal water conveyance system. The indifferent approach of the University not only led to sub-optimal utilisation of cultivable land

and failure of crops but also resulted in blockage of funds for a period of more than three years.

(ii) Loss due to sale of seeds as non-seed

Seeds produced in the farm are sold to agencies like Haryana Seed Development Corporation, Krishak Bharti Co-operative Limited (KRIBHCO), Haryana State Co-operative and Marketing Federation Limited, etc. and farmers. Stock of leftover/unsold seed is got revalidated from Seed Certifying Agencies for sale as seed in the next season and finally unsold seeds are sold as non-seed at concessional rates with permission of competent authority. The farm could sell 33,583.84 quintals seed (92 *per cent*), out of 36,614.99 quintals seed produced during 2013-17. 3,031.15 quintals (eight *per cent*) seed were sold as non-seed at concessional rates²⁸ leading to a loss of ₹ 75.39 lakh.

During survey of 108 farmers selected at random from the sampled nine districts, it was observed that only 31 farmers purchased HAU seed (Rabi) and 84²⁹ farmers (78 *per cent*) including those who had purchased HAU seeds cited non-availability/short supply/delay in supply/availability of seeds at distant places as reasons for non-purchase of HAU seeds. Further, 101 farmers (94 *per cent*) stated that they were ready to purchase the seeds produced by HAU, if supplied through Regional Centres/KVKs. **It is, therefore, evident that there is market demand for HAU seeds which has not been adequately tapped. The University had not developed any mechanism for assessing the demand of quality seeds. Sale points/outlets were not in place in any of the KVKs checked by Audit. During exit conference, the University assured that efforts would be made to sell seeds by opening more outlets in future.**

2.1.9.2 Shortfall in supply of breeder seed

Seed Science and Technology Department of the University is producing seeds of different field crops/varieties on indents received from GoI for public and private seed sectors.

²⁸ For 2013-14 Wheat-Seed rate ranging from ₹ 2,400 to ₹ 3,300/quintal, Non-seed rate ranging from ₹ 1,650 to ₹ 2,200/quintal.

Raya-Seed rate ₹ 4,800/quintal, Non-seed rate- ₹ 3,200/quintal

Gram-Seed rate ₹ 6,800/quintal, Non-seed rate- ₹ 3,800/quintal

Barley- Seed rate ₹ 1,900/quintal, Non-seed rate ₹ 1,100/quintal

²⁹ Non-availability/short supply: 18 farmers, Delayed supply: 1 farmer and Availability of seeds at distant places: 65 farmers.

Audit observed that there was shortfall in supply of breeder seeds of various crops³⁰ as detailed in **Table 2.12**.

Table 2.12: Details of shortfall in supply of breeder seeds of various crops

Year	Indent (Qtls)	Production (Qtls)	Shortfall (Qtls)	Percentage of shortfall
2013-14	386.22	199.34	186.88	48.39
2014-15	629.61	386.95	242.66	38.54
2015-16	879.49	1,109.21	-229.72	-
2016-17	1,203.60	1,021.44	182.16	15.13
2017-18	1,143.70	1,111.20	32.50	2.84
Total	4,242.62	3,828.14	414.48	9.77

(Source: Data supplied by the University)

As is evident, against the indent of 4,242.62 quintal breeder seed, there was a production of 3,828.14 quintals leaving a shortfall of 414.48 quintals. The shortfall in 23 varieties of crops ranged between 11 and 83 per cent (**Appendix 2.2**).

The University stated (June 2018) that the shortfall in breeder seed production was due to bad weather conditions. The reply is not convincing since there were no wide variations in the minimum/maximum temperature as per meteorological data for the period 2013-18, which could have impacted seed production. Further, the University has not mentioned specific period during which breeder seed production had been hampered due to bad weather. The University also does not have any proposal to grow seeds in controlled weather conditions for arresting the shortfall.

Thus, the seed production programme was hampered due to non-completion of water distribution network, sale of seed as non-seed and short fall in supply of breeder seed. This impacted the objective of propagating the new seed varieties among farmers.

2.1.10 Extension activities

Extension activities are being conducted by Krishi Vigyan Kendras (KVKs). The core functions of KVKs are to demonstrate the latest agricultural technologies to the farmers as well as to extension workers of State Agriculture Departments with a view to reduce the time lag between technology generation and its adoption. KVKs also impart training to the practising farmers/farm women, rural youth and field level extension functionaries. All KVKs have constituted Scientific Advisory Committee (SAC) as per guidelines of ICAR which comprises of representatives from ICAR institutes, State Agriculture University, Development departments of

³⁰ Wheat, Guar, Moong, Jwar, Gram, and Oat.

the district, progressive farmers and farm women and other special invitees. The meetings of the SAC are conducted to get necessary guidance and support to carry out the mandated activities of KVKs in a more planned and scientific manner. Two meetings are required to be held per year. Audit observed that the KVKs have been holding meetings of SAC at regular intervals and making compliance of the recommendations and deliberations of the meetings. The records of seven³¹ out of 14 ICAR sponsored and of two³² out of five³³ State Sponsored Krishi Vigyan Kendras (KVKs) were test checked, audit findings of which are given below:

2.1.10.1 Non-utilisation of cultivable land

Out of nine test checked KVKs, there was under-utilisation of cultivable land in five KVKs. Only green manuring was done at KVK Pandu Pindara (Jind) and KVK Rohtak during Kharif. 13 acre of land at KVK Sadalpur (Hisar) was not developed and was under forest cover while eight acre four kanal 14 marla of land at KVK Ambala was under eucalyptus plantation. The details are given in **Table 2.13**.

Table 2.13: Details showing non-utilisation of cultivable land

Sr. No	Name of KVK	Cultivable land (acre)	Kharif			Rabi		
			Average land cultivated (acre)	Average land remained uncultivated (acre)	Percentage of land remained uncultivated	Average land cultivated (acre)	Average land remained uncultivated (acre)	Percentage of land remained uncultivated
1	Pandu Pindara (Jind)	33.50	0.00	33.50	100	15.05	18.45	55
2	Rohtak	43.60	0.00	43.60	100	35.10	8.50	19
3	Sadalpur (Hisar)	32.00	10.80	21.20	66	21.10	10.90	34
4	Jhajjar	22.00	9.97	12.03	55	12.31	9.69	44
5	Ambala	19.00	0.00	19.00	100	17.88	1.12	6

(Source: Data compiled from the records of the University)

The University attributed (September 2018) under-utilisation of land to non-suitability of underground water for irrigation and also to non-availability/inadequate availability of canal irrigation. Thus, the University failed to develop irrigation facilities even after more than 15 years of establishment of these KVKs.

Non-development of land of KVKs for agriculture purpose had impacted the extension activities to demonstrate the latest agricultural technologies to the farmers as well as to extension workers of State Agriculture Departments.

³¹ (i) Fatehabad, (ii) Jhajjar (iii) Pandu Pindara (Jind), (iv) Kaithal, (v) Ujha (Panipat), (vi) Rohtak and (vii) Sadalpur (Hisar).

³² (i) Ambala and (ii) Karnal.

³³ (i) Ambala, (ii) Bawal, (iii) Karnal, (iv) Mandkola (Palwal) and (v) Panchkula.

2.1.10.2 Front Line Demonstration

Front Line Demonstrations (FLD) are field demonstrations evolved by the Indian Council of Agricultural Research with the inception of the Technology Mission on Oilseed Crops during the mid-eighties. The field demonstrations are conducted under the close supervision of scientists of the National Agriculture Research System and are demonstrated for the first time by the scientists themselves before being fed into the main extension system of the State Department of Agriculture. The objective of FLDs is to demonstrate newly released crop production and protection technologies and management practices in the farmers' field under different agro-climatic regions and farming situations.

A group of land holdings in the selected demonstration block who are willing to cooperate in the conduct of demonstration are selected by holding a meeting in the villages. No specific annual targets were fixed for holding FLDs by KVKs. **However, during 2013-18, a total of 7,336 FLDs (Varietal Centric-4,257 and Technology based-3,079) were conducted by selected KVKs. Scrutiny of records of FLDs in test checked KVKs revealed that propagation of new varieties were not conducted through FLDs in a large number of new varieties, FLDs were conducted on old varieties leading to non-adoption of new crop varieties by farmers** as discussed below:

(i) *Non-propagation of new varieties of seed*

As per ICAR guidelines, each State Agriculture University is required to conduct FLD's on latest varieties of seeds to popularise them and enable farmers to derive benefits of research for furtherance of agricultural production. To popularize new varieties and to induce confidence among the farmers, each State Agricultural University (SAU) and KVK were to adopt one or two villages in a block in an agro-climatic zone of the State for demonstration in participatory mode in the fields of private farmers to demonstrate the productivity/potential of the new variety with an appropriate mix of inputs and good practices. Thus, the FLDs were to be conducted to propagate the new varieties of seed. During 2013-18, 26 new varieties of various crop seeds were released by the University. Scrutiny of records of test-checked KVKs revealed that out of these, FLDs in respect of 18 new varieties (**Appendix 2.3**) were not held at all while FLDs in respect of two³⁴ varieties was held only once during this period.

³⁴ (i) Raya (RH-406) (ii) Forage (HB-2).

(ii) FLDs conducted on old varieties

Although the FLDs were not conducted to propagate new varieties in a large number of cases, KVKs Jhajjar and Sadalpur (Hisar) conducted FLDs on old varieties of crops as shown in **Table 2.14**.

Table 2.14: Details showing FLD conducted on different varieties

Crop	Variety	Year of release	Year of Front Line Demonstration conducted and name of KVK						Latest variety & year of release	
			2013-14		2014-15		2015-16	2016-17	Variety	Year
Raya	RH30	1983	Jhajjar	Sadalpur	Sadalpur	-	Sadalpur	Sadalpur	RH119 RH749	2010 2013
Barley	BH393	2002	Jhajjar	Sadalpur	Sadalpur	-	-	-	BH885	2012
Gram	HC 1	1990	Sadalpur	-	Jhajjar	Sadalpur	Sadalpur	Sadalpur	HC-5	2005

(Source: Data compiled from the records of the University)

For barley and gram, it was stated (May 2018) by Senior Coordinator, KVK Sadalpur (Hisar) that seed of newly released varieties was not available.

(iii) Non-adoption of new crop varieties by farmers

A survey of 102 farmers, in whose fields FLDs were held during 2015-16 by KVK Fatehabad, Ujha (Panipat) and Jhajjar, was conducted by Audit in August 2018. Out of 102 farmers, 67 farmers had attended crops varietal FLDs and 35 had participated in technology based FLDs. On the basis of survey, it was observed that technology was adopted by all the farmers while the new crop varieties was adopted by 66 *per cent* farmers (44 farmers) in the first year which reduced to 40 farmers in the second year. Thus, new crop varieties had not been universally adopted. Six farmers attributed non-adoption of new crop varieties to non-availability of seeds of new varieties. Audit observed that there was no mechanism to follow-up with the farmers who were covered under FLDs to assess whether farmers continued to use the newly adopted practices.

Thus, FLDs to propagate new varieties were not conducted properly; on the other hand FLDs of old varieties were conducted which had impacted the objective of popularising new seed varieties among farmers for furtherance of agricultural production. Further, no mechanism was evolved to ensure the adoption of new crop variety by farmers.

(iv) Non-conducting of FLDs in State sponsored KVKs

The main function of the KVKs was to conduct Front-Line Demonstrations to demonstrate newly released crop production and protection technologies and its management practices in the farmers' field under different agro-climatic regions and farming situations.

Scrutiny of the records of two State sponsored KVKs of Ambala and Uchani (Karnal) revealed that KVK Ambala did not conduct any front line demonstrations and on-farm trials during 2013-18 while KVK Uchani (Karnal) conducted only 30 FLDs (Kharif 2016) during this period. Thus, the KVKs failed to demonstrate newly released crop production and protection technologies. Audit observed that as against the nine posts of extension specialists only two post were filled up while in KVK Ambala as against the seven posts of extension specialists only three post were filled up. Further, there was lack of budget provision in these KVKs for carrying extension activities.

The Sr. Coordinators concerned replied (December 2017) that due to manpower constraints and non-provision of budget, the FLDs could not be conducted. The KVK Karnal also stated that though the complaints/queries/trainings were conducted with the help of scientists of the nearby Research Stations/KVKs, still there were constraints in conducting training, resolving complaints/queries of farmers due to shortage of staff. Thus, the State sponsored KVKs were not functioning properly.

2.1.10.3 Non-establishment of Community Radio Stations

An amount of ₹ 1.18 crore was received (November 2011 to April 2012) from the GoI for establishment of six³⁵ Community Radio Stations (CRSs) at KVKs. Agreements for providing consultancy and professional services (July 2011) and for providing services on turnkey basis (November 2011) were signed with Broadcast Engineering Consultants India Limited (BECIL) to be completed by November 2012. ₹ 60.62 lakh was paid (December 2011) to the agency for construction of studio, purchase of equipment, fee payable to Ministry of Information and Broadcasting (I&B) for installation and commissioning charges. As per MoU, BECIL was required to obtain clearances from various Ministries/Authorities for the establishment of CRSs within stipulated period i.e. November 2012. However, the CRSs had not been established even after a lapse of more than five years of scheduled date of completion. Even the clearances from various Authorities were pending. This indicates that there was lack of pursuance on the part of the University.

The University stated (September 2018) that out of five major steps for making a Community Radio Station operational, four have been cleared in respect of all the six KVKs. The last step i.e. issue of Wireless Operating License (WOL) would be cleared soon and CRSs would be made operational within the financial year 2018-19.

³⁵

(i) Sirsa (ii) Rohtak (iii) Jind (iv) Kurukshetra (v) Panipat and (vi) Jhajjar.

Thus, due to lack of pursuance and monitoring, CRSs had not been established even after six years of release of funds resulting in idling of funds and the objective of dissemination of latest agricultural information to the farmers remained unachieved.

2.1.10.4 Soil Testing Laboratory at KVKs

Soil and water testing laboratory (STL) help farmers to analyse the nutrient composition of their farm soil and make recommendations for application of fertilisers to the crops based on soil analysis.

Scrutiny of records of selected KVKs revealed that in two KVKs (Panipat and Fatehabad) STLs were non-functional due to non-availability of skilled staff/lack of infrastructure and in remaining six KVKs (Kaithal, Rohtak, Sadalpur, Jind, Jhajjar and Karnal) STLs were functional. In one KVK (Ambala) STL had not yet been set up.

Further, it was noticed that KVK Fatehabad purchased (March-May 2017) equipment/furniture worth ₹ 15 lakh for establishment of STL but these items were lying sealed in a store due to non-availability of proper building/rooms and skilled manpower. Manpower was not available even at the time of purchase of equipment. Thus, the total expenditure of ₹ 15 lakh incurred on purchase of equipment was rendered unfruitful with the result that intended benefits could not be derived.

The University stated during exit conference that efforts were being made to provide suitable skilled manpower for proper running of STLs.

Since these observations are based on test check of some of the laboratories, it is recommended that the University may check functioning of all the laboratories for ensuring their optimum utilisation for academic, research and extension purposes.

2.1.11 Conclusion

Eight laboratories of the University were non-functional due to shortage of staff and lack of equipment. There was no formal system for dissemination of research results and audit trail was not maintained for ascertaining whether the results were extended to intended beneficiaries. Audit observed that the intended objectives in 10 out of 27 test checked research projects could not be achieved as four projects remained incomplete, one was completed after abnormal delay, three were abandoned and in two projects impact was not assessed by the University. The University had not developed any mechanism for assessing the demand of quality seeds and the market for the University seeds was not tapped adequately. Front

line demonstrations were not conducted for new varieties of seeds. Under utilisation of land at KVKs impacted the dissemination of latest agricultural technologies to the farmers. There was shortage of 55 *per cent* teaching staff and 41 *per cent* non-teaching staff that adversely affected the working of KVKs, laboratories and a library. The hostels were lacking in basic amenities and the maintenance of three boys' hostels was very poor.

2.1.12 Recommendations

The Government may consider the following:

- institute a robust mechanism for monitoring progress of research projects and ensure their time-bound completion;
- breeder seed of newly released varieties should be propagated among the farmers through front line demonstrations;
- the University should follow-up with the farmers who had participated in the FLDs and evolve a monitoring system to assess whether and to what extent the new technologies/varieties are adopted and envisaged benefits are derived;
- the University should take appropriate action for setting more points of sale for its seeds so that more and more farmers could be benefitted;
- financial management should be strengthened specially with reference to adjustment of unclassified grants and temporary advances; and
- hostel infrastructure should be upgraded and hygiene improved.

The audit findings were referred to the Government in July 2018 but their reply was awaited (January 2019).

Appendix 2.1

(Reference: Paragraph 2.1.7.5; Page: 18)

Details of water closets, bathrooms, urinals and wash basins in boys' and girls' hostel at CCSHAU, Hisar

Name of Hostel	Intake capacity	Number of WC Required	Number of WC available	Shortfall (per cent)	Number of Bathrooms Required	Number of Bathrooms available	Shortfall (per cent)	Number of Urinals Required	Number of Urinals available	Shortfall (per cent)	Number. of wash Basin Required	Number of Wash Basin available	Shortfall (per cent)
Kailash (Boys)	180	36	30	17	45	30	33	18	18	-	23	24	-
Vrindavan (Boys)	221	44	30	32	55	30	45	22	12	45	28	24	14
Ajanta (Boys)	159	32	30	6	40	24	40	16	12	25	20	18	10
Vindhyachal (Boys)	230	46	36	22	58	30	48	23	12	48	29	24	17
Triveni (INH-Boys)	84	17	17	0	21	17	19	8	9	-	11	9	18
Gangotri (New Wing) (Girls)	139	28	24	14	35	24	31	N/A	N/A	N/A	17	21	-
Gangotri (Old Wing) (Girls)	108	22	10	54	27	10	63	N/A	N/A	N/A	14	18	-
Gangotri (Addl. Wing) (Girls)	121	24	33	-	30	33	-	N/A	N/A	N/A	15	30	-
Woman (Scholar) (Girls)	35	7	9	-	9	9	-	N/A	N/A	N/A	4	9	-
Godavari (Girls)	144	29	25	14	36	25	31	N/A	N/A	N/A	18	27	-
Yamunatori (Girls)	43	9	18	-	11	18	-	N/A	N/A	N/A	5	18	-
Narmada (Girls)	119	24	37	-	30	46	-	N/A	N/A	N/A	15	31	-

(Source: Data supplied by the University)

Appendix 2.2

(Reference: Paragraph 2.1.9.2; Page: 33)

Details showing shortfall in supply of breeder seed during 2013-14 to 2017-18

(Quantity in Quintals)

Sr. No	Crop	Variety	2013-14		2014-15		2015-16		2016-17		2017-18		Total		Shortfall	Percent
			I	P	I	P	I	P	I	P	I	P	I	P		
1	Guar	HG-884	16.00	2.70	-	-	-	-	-	-	-	-	16.00	2.70	13.30	83.13
2		HG-365	34.05	2.00	-	-	26.60	7.75	18.00	10.95	-	-	78.65	20.70	57.95	73.68
3		HG-563	68.25	0.45	68.25	17.35	17.40	11.52	-	-	-	-	153.90	29.32	124.58	80.95
4		HG—2-20	48.06	3.00	48.06	11.60	88.00	24.90	-	-	-	-	184.12	39.50	144.62	78.55
5		HG-870	-	-	-	-	-	-	-	-	0.70	0.23	0.70	0.23	0.47	67.14
6	Moong	MH-421	-	-	-	-	-	-	32.00	21.40	50.00	17.15	82.00	38.55	43.45	52.99
7		Sattya	-	-	-	-	-	-	17.00	12.90	-	-	17.00	12.90	4.10	24.12
8	Jwar	HC-308	2.50	0.44	-	-	-	-	-	-	-	-	2.50	0.44	2.06	82.40
9	Wheat	WHD-943	48.00	42.00	92.60	48.40	80.00	51.60	80.00	26.40	40.00	38.00	340.60	206.40	134.20	39.40
10		WH-1080	-	-	97.40	59.20	-	-	-	-	-	-	97.40	59.20	38.20	39.22
11		WH-1025	-	-	42.00	28.80	-	-	-	-	-	-	42.00	28.80	13.20	31.43
12		WH-1021	-	-	51.20	33.20	-	-	-	-	-	-	51.20	33.20	18.00	35.16
13		WH-283	-	-	-	-	-	-	24.40	12.40	-	-	24.40	12.40	12.00	49.18
14		WH-1124	-	-	-	-	-	-	209.20	111.20	-	-	209.20	111.20	98.00	46.85
15	Gram	HC-1	10.00	9.60	12.00	4.50	-	-	-	-	-	-	22.00	14.10	7.90	35.91
16		C-235	-	-	7.40	3.00	2.00	0.97	-	-	-	-	9.40	3.97	5.43	57.77
17		C-5	-	-	-	-	1.00	0.88	-	-	-	-	1.00	0.88	0.12	12.00
18	Oat	OS-6	17.00	12.00	-	-	-	-	-	-	-	-	17.00	12.00	5.00	29.41
19		HJ-8	-	-	-	-	-	-	-	-	7.60	4.30	7.60	4.30	3.30	43.42
20	Pea	HFP-529	31.40	22.40	-	-	25.00	1.65	20.00	1.49	24.00	7.20	100.40	32.74	67.66	67.39
21	Barley	BH-393	-	-	62.70	39.90	-	-	60.90	58.45	-	-	123.60	98.35	25.25	20.43
22		BH-946	-	-	52.80	47.25	-	-	-	-	-	-	52.80	47.25	5.55	10.51
23	Lentil	HM-1	-	-	-	-	-	-	-	-	0.50	0.20	0.50	0.20	0.30	60.00
Total			275.26	94.59	534.41	293.20	240.00	99.27	461.50	255.19	122.80	67.08	1,633.97	809.33	824.64	50.47

(Source: Data compiled from the records of the University)

P= Production

I=Indent

Appendix 2.3

(Reference: Paragraph: 2.1.10.2 (i); Page: 35)

Details of new varieties for which demonstrations not conducted by selected KVKs

Sr.No	Crops	Variety		Year of release
1.	Wheat	WHD 948		2013
2.	Pearl Millet	HHB 272		2016
3.		HHB 234		2013
4.		HHB 299		2018
5.	Rice	HKR 48		2016
6.	Maize	HM 13		2014
7.	Barley	BH 959		2015
8.	Oil seed	HT 2		2013
9.	Pulses	MH 318		2015
10.		HFP 715		2014
11.	Cotton	H 1353		2015
12.	Forage	OS 377		2015
13.		HJ 541		2014
14.	Vegetable crop	HO 4		2016
15.		GH 22		2016
16.		HBGH 35		2016
17.		HLB 12		2014
18.	MAP	HFB 1		2018

(Source: Data supplied by the University)