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National Agriculture Education Accreditation Council

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**Report of the
Accreditation Inspection Committee (AIC)**

By

Prof. Dr. Alam Zeb

Dr. Sarwar Dogar

**National Institute of Food Science & Technology
(NIFST)
University of Agriculture Faisalabad**

Section-1 General

NAEAC Inspection Team

For external assessment and rating of various degrees program of the **National Institute of Food Science & Technology** University of Agriculture Faisalabad, the chairman National Agriculture Education Accreditation Council (NAEAC) HEC Islamabad nominated subject expert team for Accreditation Inspection Committee (AIC) to visit the institute. Following experts' team visited on 7-8th March 2011 scheduled by NAEAC.

1. **Prof. Dr. Alam Zeb** Convener
Chairman Department of Food Science & Technology,
Agricultural University Peshawar
2. **Dr. Sarwar Dogar** Member
Production Manager, Fauji Cereals, Rawalpindi

Purpose of AIC Visit

1. To validate the self-Assessment Report and the Peer Team Report of the institute.
2. To bring external evaluation of the academic programs of the institute for rating and accreditation.
3. To prepare consolidated report about the institute's education program, strength and weakness.
4. To submit recommendations about the institute to NAEAC chairman.

National Institute of Food Science & Technology

Prof. Dr. Faqir Muhammad Anjum Director General of the Institute of Food Science & Technology briefed the AIC team about the institute education program.

- At present NIFSAT is the only National level institute of Food Science & Technology in Pakistan.
- Established as Food Technology section in 1959-60 in Punjab Agriculture College & Research Institute Lyallpur the city now known Faisalabad.
- Granted a status of the department of Food Science & Technology in 1930.
- Upgraded to Institute of Food Science & Technology in 2003.
- Elevated to National Institute of Food Science & Technology in 2007.

Mission of the Institute

To provide education at graduate & postgraduate degrees level of food Science & Technology.

Section-II Criterion wise Analysis

Major Criteria

Strength and Quality of Faculty

Faculty of the institute are highly qualified. Most of them have Local PhD from the same institute while completed post doctorate from USA, UK & France. There are full time 3 Professors, 2 Associate Professors, 11 Assistant Professors, 1 lecturer, 1 visiting faculty and 2 contract subject expert.

Faculty specializations: (i) Nutrition & food safety (ii) Dairy Technology (iii) Edible oils & sugar Technology (iv) Cereal Science & Technology (v) Fruits & Vegetables Technology (vi) Meat Technology, (vii) Food Biotechnology (viii) Post-harvest Technology.

Teaching work load: Professors 10:1, Associate Professor: 12:1 others: 14:1. Teaching work load is per HEC criteria. However students' research supervision has made their work overloaded. Students teachers ratio in 2010-11 for B.Sc(H) FST is 12:1 M.Sc(H) FST 11:1, M.Sc(H) DT 2:1 and PhD 2:1. Students' knowledge for semester courses is tested through assignments, mid and final terms examinations. Faculty teaching performance is monitoring through QEC faculty evaluation proforma filled by concerned course students. Faculty maintains files record of courses, question papers, grading system, and papers results.

Most of the faculties have received training through linkages with foreign universities and HEC. Institute has suitable study environment and has good students' teachers' interaction. Institute follows HEC uptodate instructions for improving education quality.

Curriculum Design and Development

The institute provides training at degree level of B.Sc (H) Food Science & Technology, B.Sc(H) Food Science & Nutrition, M.Sc(H) Food Sci.& Technology, M.Sc(H) Dairy Technology. Duration of B.Sc (H) FST is 4 years (8 Semesters). M.Sc (H) minimum period is two years (4 semesters).

In session 1960-2010 the institute has produced total 2465 graduates including B.Sc(H) 1521, M.Sc(H) 891, PhD 53. Number of Students enrolled in 2010-11 was 660 including B.Sc(H) 391, M.Sc(H) 226 and PhD 43.

FST Revised National Curriculum 2010 has been adopted by the institute. Mechanism of courses revision exists at institute level for adding new contents in concerned subject course. All courses are prepared with clear contents and objectives. Curriculum revised at each 4 years time by HEC. Credit hours for B.Sc (H) FST is 146, M.Sc (H) FST & Dairy Technology is 46.

Most of the courses are 3 credit hours, 2 hrs for theory and 1 hr for practical. Courses are completed as per semester academic calendar set by institute. Students' perception is that curriculum is knowledgeable and innovation if taught with practicals. Board of Studies meetings held regularly and notifications files regarding various meetings and seminars

etc are properly maintained. For foreign students advisory cell exist in the university as well as in institute.

Infrastructure and Learning Resources

Laboratories of the institute are well equipped. Labs names are:

- Food Microbiology & Biotechnology
- Fats & Sugar Technology,
- Dairy Technology
- Fruits & Vegetables Processing
- Bakery Hall
- Meat Technology
- Sensory Evaluation
- Food Rheology
- Food Analysis
- Milling Room
- Extrusion Centre
- Animal Room
- Canning Hall.

All classrooms have been equipped with audio/visual and multimedia. There are 6 classrooms, 2 computer labs and 22 faculty offices, meeting and seminar rooms. Each faculty has official computer with printer. For students there is computer lab containing enough computers linked with internet.

Institute has its own library containing courses relevant books. 361 new books (1995-2010) and 306 old books, 665 M.Sc (H) thesis and 42 PhD thesis. University main library has total books 1584 out of which 230 are latest books. Main library regularly receiving hard copies of two US Journal.

Facility of HEC digital library is available. Few senior faculty of the institute have published food science books and experiments manual. Publishing Pak Food Science journal with ISSN:1605-2552.

NIFST is the head office of the Pakistan Society of Food Scientists & Technologists

The institute has linkages with various Public and private sectors.

For institute Nestlé & Vita industries have constructed an auditorium and food quality control center.

Students Support and Progression

Most of the courses have practicals. In B.Sc (H) final semester is for internship. Students' attendance files are properly maintained by faculty and institute. Insufficient facilities of accommodation, transport and medical are exist on campus. New latest books are available in main library of the university however the institute has recently purchased many new books for its own library for students and faculty use.

Minor Criteria

Research and Consultancy Activities

Sufficient grant received through projects for the development of the institute. University fund is just sufficient for staff salary. Faculty has published 25 papers in impact factor journal and 57 in HEC approved journals. Faculties have published 10 books and subject relevant manuals. Institute has linkages with various national food Industries and foreign universities. In last 10 years 17 projects completed and 11 are in progress. Most M.Sc (H) students are funded for research work by food industries like Nestle etc.

Governance and Leadership

The highest administrative governance is the vice chancellor. Institute is headed by Director General. University has written statutes regarding responsibilities and powers limit of the university various departments, institutes and sections. Financial help from university is stable while unstable from other grant agencies. Alumni program exist. The institute provides annual academic calendar scheduled for classes, seminars, meetings, students' tours, examinations and vacations.

Adoption of Best Practices

Proper mechanism exists in the institute which ensures the provision of quality of education. Faculty accurately maintains courses files and students attendance both of theory and practical classes. Student is not allowed to set in the examination of the course if student attendance in classes of concerned course is less than 75%. Most students expressed satisfaction over the education standard of the institute. Students-teachers assessment conducted as per HEC criteria by QEC of the university. Degrees programs assessment is carried out by HEC NAEAC.

Section III Overall SWOT Analysis

Major Strengths

- All faculty of the institute are PhD qualified in food science & technology.
- Curriculums of B.Sc (H) and M.Sc (H) are the latest revised by HEC and covers sufficient courses approved by local and foreign subject experts.
- The institute has several specialized labs well equipped with important instruments for students practical and research.
- Students and faculty have good interaction.
- Institute has sufficient seated classrooms well furnished for teaching purpose.
- Well furnished library exist containing sufficient books & journals. The university has reputed well furnished main library containing several kinds of food science books.
- All faculty have own offices as well as computer set with printer and free net facility.
- Computer labs containing many computers for students' use.
- Digital library facility is available with free access both for students and faculty.
- Very good linkages with national food industries and foreign universities.
- New building of the institute is ready and the institute will soon be shifted here.

Major weakness

- Shortage of specialized faculty required for courses such as food microbiology, food biotechnology, meat technology and food engineering.
- Sensory evaluation lab is not designed and facilitated as per scientific grounds.
- Shortage of qualified lab staff for installation and proper maintenance of the instruments. .
- Alumni is to be strengthen at institute level.
- Seminars, workshops are seldom conducted.
- Research funds for students' research are insufficient.
- Students have less awareness about laboratory safety practices.
- Insufficient Sports facility both for students and faculty.
- Examination system is quality wise poor.

Major Opportunities

- The institute is actively engaged to develop infrastructure with support of HEC and food industries. Meat Technology section is to be further developed to improve quality standard of meat in our country.
- More jobs opportunities for graduates due to wide spreading of food industries home and abroad, five stars hotels, restaurants, research institutes and food quality control agencies
- To encourage linkages with national food industries to create jobs for graduates.
- The institute can provide opportunities for students' higher study through collaboration with foreign universities.
- The talent of female students is to be used for women training in food science.
- Extend the services of Food Quality Analysis Lab towards food industries as well as government & private agencies involved in food quality inspection.

Major Challenges

- Specialized faculty required for courses of Food Engineering, Food Microbiology and Meat Processing.
- Exposure of students to stakeholders/industry and research institutes.
- Efforts are needed to convince food industries and HEC to financially support students during internship training of degree program.
- Attractive salary needed to sustain qualified and experienced lab staff.
- Collaboration needed with Agriculture Extension for successful outreach program.

Stakeholders feed back

Food Science plays important role in the development of food industries. Graduates practical quality experience is to be improved in subjects of food microbiology, food analytical chemistry and food engineering. Computer skill is very important for graduates working in food industries. Students are to be encouraged to participate in various seminars, workshops and conferences to improve their knowledge and leadership. Meetings to be held regularly with students' parents' to know their views about their children progress, weakness and suggestions for improvement. Similar meeting are to be organized with various food industries to know their problems and find the solutions.

Actionable Recommendations

- Stakeholders and experts from major food industries are also be invited to HEC curriculum revision meetings. Their suggestions and experience will further improve the curriculum quality.
- Students should be trained on new research proposals beneficial for food industries.
- Faculties are to be allowed for training in their field of study home & abroad to learn new knowledge of the subject. .
- The institute should arrange training for faculty of other food science education departments of the country.
- The institute should transmit research achievements to food industries of the country.
- Food Engineering Lab is required so students can learn mathematical knowledge for technology used for food preservation.
- Qualified and trained lab staff required to operate sophisticated labs equipment used for students practicals and research.
- Lab-Safety course is to be included in undergraduate curriculum.
- Alumni society activities are to be mobilized.
- The institute should reserve few seats in sports for students seeking admission in the institute to encourage games activity in students of the institute.
- More new latest books and journals are required by the institute for graduate and postgraduate degree program.
- Institute should also encourage linkage with other food science departments of the country to use collective experience for quality improvement of our education and to get mutual benefit of existence facilities.
- Standard of examination rooms is to be improved so students can carry out examination comfortably and prevent illegal practices.
- Study tours for students are to be arranged to visit other universities of the country to know their overall strengths and weakness and also bring friendship and harmony among them for their career and national interest

Final Recommendation

On the basis of the inspection/ evaluation, the experts' team unanimously recommends Accreditation of the Degrees programs of the National Institute of Food Science & Technology, University of Agriculture Faisalabad in the “W” category of National Agriculture Education Accreditation Council/Higher Education Commission (HEC) with expectation that the institute will maintain its reputation as per international standard.

(F) Comments of the **Prof. Dr. Faqir Muhammad Anjum** Director General of National Institute of Food Science & Technology, University of Agriculture Faisalabad.

I agree with the contents of the Peer Team Report.

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Signature & Seal

Signatures of AIC Members

Name and Designation Signatures

1. Prof. Dr. Alam Zeb

Chairman Department of Food Science & Technology,
Khyber Pakhtunkhwa Agricultural University, Peshawar.

2. Dr. Sarwar Dogar

Production Manager, Fauji Cereals, Rawalpindi.