

ANNUAL PROGRESS REPORT Fiscal Year 2061/2062 B.S. (2004/2005)

The outcomes of the various programmes conducted in the fiscal year 2061/62 under the Department of Food Technology and Quality Control (DFTQC) is summarized in Table 1.

Table 1: Overall summary of the achievement of programmes of DFTQC for the fiscal year 2061/62

<i>Major programmes</i>	<i>Achievements</i>
1. Food Quality Control Programme	
(a) Market Inspection and Sample Collection	Altogether 3224 food and feed samples were collected and analyzed for quality standard and 200 cases have been filed against the producers and distributors for legal action..
(b) Industry Inspection	About 585 food and feed industries were inspected and monitored through quality control mechanism focusing on the implementation of Good Manufacturing Practices (GMP), Good Hygiene Practice (GHP) and Hazard Analysis Critical Control Point (HACCP)
(c) Hotel, Restaurant and Sweetshops Inspection and Food Quality Seminar	A total number of 573 Hotel, Restaurants and Sweet shops were inspected and monitored. 8 seminars were conducted for consumer awareness on GMP, GHP and HACCP for food quality and safety.
(d) Preparation of Code of Practice for Food Industries for Inspection / monitoring.	Code of practice for the instant noodles industry and vegetable ghee industry has been prepared.
(e) Preparation of National Pesticide Residue Monitoring Scheme	Preliminary survey on pesticide residues has been completed collecting 68 samples of tea and vegetables in the eastern development region and honey in Chitawan and Nawalparasi district.
2. Laboratory Analytical Services	Total 49,00,000/- Rs Revenue collection from the analysis of food samples collected on industry licensing, market and industry inspection, export import certification and requested samples.
3. Food Technology Development, Training and Technology Consultancy Services	
(a) Trial Study for Technology Development	Altogether 6 trials were conducted on appropriate storage technology of Tofu, Production of Chhoph from Niger seed, Preservation of fruits and Vegetables, Banana processing and feasibility study on dehydrated fruits and vegetables. Technology Profile has been prepared.
(b) Skill Development Training	Food Processing Training Services on 235 Probable Entrepreneurs.
(c) Post-harvest Study Consultancy	Altogether 30 Trials on post harvest study on grains and vegetables in five regional offices. Compiling the technical data, 20 technical consultancy services have also been provided.
4. Food Nutrition Programme	
(a) Analysis of Nutrients	Altogether, 200 samples were analyzed for updating food composition table.
(b) Diet Development/Community Nutrition Improvement Programme and Radio Food Nutrition programme	Three diet development programmes including 2 diets for adult and 1 Breakfast development for school children were completed. On the community nutrition improvement programme, nutritional survey on Bhaktapur district and nutrition seminar as well as training on nutrition activist and weaning food including 24 Radio Food Nutrition education dissemination programmes.
5. Establishment of Food Quarantine Laboratory and Inspection Units	Food Quarantine Laboratory has been established on Birgunj, Tatopani, Kakarbhitta and Mahendranagar. Similarly 20 Food Inspection Units has been established in terai and inner terai region. The offices are now in operation.
6. Special Programme	SAARC-Workshop on the Harmonization of Standards on Food Products has been organized under the SAARC-Japan special fund.

The detail of the annual progress report of the DFTQC for the fiscal year 2061/62 is reported as follows.

I. FOOD QUALITY CONTROL

In the fiscal year 2061/62, Food Quality Control Division under the Department of Food Technology and Quality Control (DFTQC) has implemented following programs as an effort of enforcing Food Act 2023 and Food Regulation 2027 as well as Feed Act 2033 and Feed Regulation 2041.

The main programs were as follows:

1. Inspection and Monitoring
2. Food Industry Licensing
3. Law Enforcement
4. Food Standardization
5. Development of Code of Practices
6. Study on Pesticide Residues.
7. Consumer Awareness

1. Inspection and Monitoring

1.1 Market and Industry Inspection

Markets and industries were inspected and monitored. Altogether 1085 of food and feed samples were collected as per Food and Feed Act. Sample collection was increased by 23.8 % as compared to last year. About 15.4% of samples were found sub-standard in the year 061/62. Sample collection and substandard percent are shown in Table-2 and Table-3.

Table-2: Samples collection* from Market and Industry Inspection

Commodity	Total Samples	Number of Substandard Sample
Milk & Milk Products	83	51
Fats & Oil	105	33
Fruits & Vegetable Products	108	24
Spices & Condiments	153	11
Tea, Coffee, Cocoa & their Products	48	3
Salt	4	0
Cereal, Pulses & their products	339	25
Processed Drinking Water	52	3
Sweetening Agent	14	0
Sweet & Confectionary	13	1
Feed	39	9
Miscellaneous Food Products	127	7
Total	1085	167

* Formal samples as per the food act and feed act from Kathmandu valley (Kathmandu, Lalitpur and Bhaktapur district) and from Kavre District.

1.2 Industry Inspection and Monitoring

Altogether 189 inspections and monitorings were made in food and feed industries. Premises and surroundings environment of industry, processing plants, cleaning of equipments, storage condition of raw and finished products, Processing Technology used, Good Manufacturing Practices (GMP), Good Hygiene Practices (GHP) and Hazard Analysis Critical Control Point (HACCP) were focused. Detail of the industry inspection is given in Table 6.

Table-6: Industry Inspection and monitoring in Kathnamdu Valley

Type of Industry	No. of Inspection
Milk & Milk Products	13
Fat & Oil	17
Fruit & Vegetable Products	39
Spice & Condiment	20
Tea, Coffee, Cocoa & their products	5
Snacks	18
Bakery & Biscuits	23
Noodles	9
Processed Drinking Water	15
Sweets & Confectionary	2
Honey	3
Weaning Food	1
Ice-cream	4
Miscellaneous Food	9
Feed	11
Total	189

2. Law Enforcement

2.1 Compliance and Action

Altogether 81 adulterated cases were submitted to Chief District Office (CDO) for case decisions. The adulterated food commodities and number of submitted cases were shown in Table-7.

Table-7: Food Adulterated cases submitted to CDO

Food Commodity	No. of Cases	Substandard Parameter
Pasteurized Milk	7	Low Fat, SNF, Volume, Coliform
Ghee	23	Low RM, High RI, Acid Value, Moisture
Milk Product	1	Label
Mustard Oil	2	Argemone presence
Vegetable Ghee	1	High MP, SOT negative
Tomato Ketchup	2	Low TSS, Low Acetic acid
Fruit Products	2	Low TSS
Spices	2	Ash high, Crude fiber
Tea	1	Low caffeine
Cereal and Pulses	7	High OEG, OFM, Damage grain, Foreign color
Instant Noodles	6	Label, High Moisture, Ash
Noodles	6	Foreign colour presence, Moisture
Biscuits	4	High Moisture, Label
Bakery	1	Label
Processed Drinking Water	7	Label, Mesophilic count high
Dalmoth, Bhujia	5	Khesari Presence, Label

Sweets	1	Unedible colour
Papad	1	Khesari Presence
Feed Products	2	Low crude fat
Total	81	

[SNF: Solid Not Fat RM: Reichert Messel, RI: Refractive Index, MP: Melting Point, SOT: Sesame oil test, TSS: Total Soluble Solid, OEG: Other Edible Grain, OFM: Organic Foreign Matter]

3. Food Industry Licensing

As per the Food Act and Regulation, the industry is liable to be issued a license. The issued license is to be renewed annually. About 574 food industries were taken in action in terms of issuing new license or renew license and certification for establishment food industries (Table 8). Furthermore, trend of licensing of food industry is gradually increasing shown in Fig 3.

Table-8: Food Industry Licensing

Type of Industry	Industry License			
	Renew	New	Certified	Total
Milk & Milk Products	12	5	14	31
Fat & Oil	21	16	7	44
Fruit & Vegetable Products	12	20	47	79
Spice & Condiment	13	11	39	63
Tea, Coffee, Cocoa & their products	6	5	18	29
Snacks	11	15	31	57
Bakery & Biscuits	33	17	44	94
Noodles	7	9	18	34
Processed Drinking Water	14	11	10	35
Soft Drink	1	-	2	3
Honey	3	2	-	5
Mishri	1	1	-	2
Aachar	6	12	20	38
Flour	2	2	-	4
Weaning food	3	1	-	4
Ice cream	1	3	12	16
Confectionary	4	-	4	8
Cereal and Pulse	1	-	2	3
Salt	1	-	-	1
Meat Product	-	-	3	3
Miscellaneous	6	9	6	21
Total	157	139	278	574

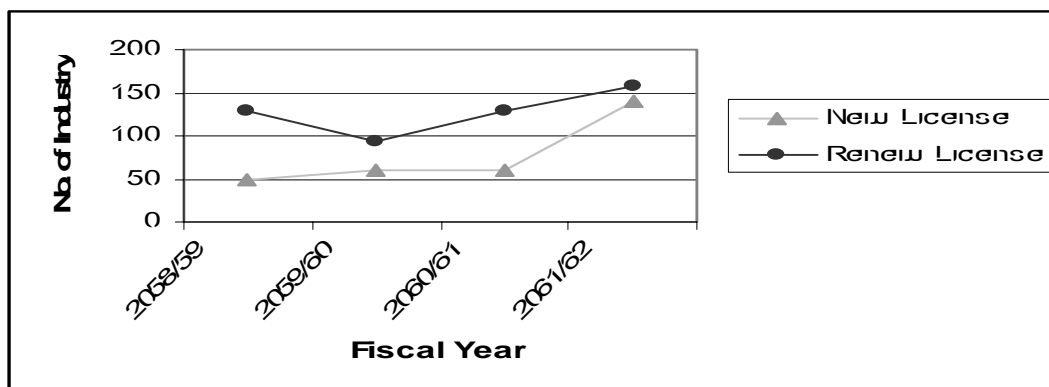


Fig- 3: Trend of Food Industry Licensing

4. Food Standardization

Altogether 101 food commodities have generic quality standards notified by government (Table 9). Four technical sub-committees (Soya sauce, Blended edible vegetable oil, Rice, Food additives) and two food quality standard committee (Rice, Blended edible vegetable oil) were conducted in fiscal year 2061/62. These food standards are under the process of notification with minor correction as indicated by the committee. The change and the additional standards of the food products imposed were governed by the following reasons issues:

1. Harmonization of the standards with codex in view of the World Trade Organization (WTO)
2. Harmonization of the standards with the regional level such as South Asian Association for Regional Cooperation (SAARC).

Table 9: Existing Standards of Food Products in Nepal

<i>Food Group</i>	<i>Food Commodity</i>	<i>Drafted Food Standards</i>
Milk & Milk Products	17	
Fat & Oil	16	1 (Blended Edible veg. oil)
Fruits & Vegetable Products	17	
Spices & Condiments	20	
Tea, Coffee & their Products	3	
Salt	2	
Cereal, Pulses & their Products	19	1 (Rice)
Processed Drinking Water	1	
Sweetening Agent	3	
Sweets and Confectionary	3	
Total	101	

5. Development of Code of Practice

The code of practice is an appropriate tool in maintaining the safe and quality food products. In the fiscal year 2061/62, the following code of practices was developed:

1. Code of Practice for Instant Noodle Industry
2. Code of Practice for Edible Vegetable Ghee and Refined Oil Industry

The Code of Practices for Instant Noodle Industry and Edible Vegetable Ghee and Refined Oil Industry has been prepared as these products have high potentiality for export.

6. Study Report on Pesticide Residues

Preliminary survey on pesticide residues has been completed collecting 68 samples of tea and vegetables in the eastern development region and honey in Chitawan and Nawalparasi district. The detail of the study is published as a separate report.

7. Consumer Awareness

In the fiscal year 2061/62 five main activities (Table 10) were conducted as follows:

- ☞ Two seminars on food hygiene, sanitation, safety and food adulteration were successfully conducted in ward no. 11- Tripureswor and 31- Ratnapark, in Kathmandu Metropolitan City. The participants were local food vendors, small restaurants, and sweet shop keepers. The demonstration of test kit and distribution of food safety posters were also included in the seminar. Around 40 participants took part in the seminar.
- ☞ Food inspection and quality control training was given to 30 new technical assistants and 2 old technical assistants. The participated technical assistants were from five region offices and food quarantine laboratories.
- ☞ Five test kit boxes were prepared for the spot visit inspection.
- ☞ About 500 pieces of books (Checking for food adulteration) were published to distribute different regional offices and public.
- ☞ Twelve messages about Food Safety, Food Adulteration, Food Licensing, Food Law and Regulation, Food Additives, Food Color, Food Labeling, Preservatives and Pesticide were published in the Gorkhapatra daily news paper.

Table 10: Summary of Consumer Awareness Programme

Program	Activity	Times	Participated Agency	Participants
Dissemination of Notice of Food Hygiene & Safety, food adulteration, colour, preservatives.	Dissemination by News Paper.	12	Daily News Paper Publication, RSS	MC
Seminar on Food Hygiene, Safety & Adulteration. (Consumer awareness in food safety.)	Seminar in Local level (Kathamndu Metropolitan City, ward no. 11 and 31)	2	Local Government, Small restaurant, Street food Vendors	61 + 44
Training on Food Inspection and Food Quality Control	Training	2	DFTQC & RFTQCOs.	20 + 12

[MC: Mass Communication, RSS: Rastriya Samachar Samiti]

II. CENTRAL FOOD LABORATORY

A. Analytical Services:

Samples of different food and feed commodities were received and analyzed as follows.

1. Milk and Milk Products:

Altogether 341 milk and milk products were analyzed, 26 samples were found to be below standard. Out of 32 pasteurized/fluid milk, 6 samples were below standard due to low SNF or Fat and 6 samples were found to be below standard due to higher coliform count. Out of 289 samples of milk products, 14 samples were found to be below standard.

2. Fats and Oil

Altogether 527 samples of fats and oils were received. Among them were 148 samples of rapeseeds/mustard oil, 32 soybean, 89 ghee, 96 vegetable ghee, 14 coconut oil, 12 sunflower oil, 16 bakery shortening. Remaining 120 samples of different types of oils, fats and seeds, among which 7 of margarine, 4 hydrogenated palm kernel oil, 1 corn oil, 5 sesame and Niger chop, 2 olive oil, 6 cooking oil and each 1 of sesame and Chiury ghee. Besides these, 4coconut powder, 21 rape/mustard seed, 43 Palm oil and 25 Palmolein were analyzed.

A total of 121 (22.9%) samples of fats and oil were found to be sub-standard. Sub-standard samples of mustard/rapeseed oil, ghee, vegetable ghee, and coconut oil were found to be 22.9, 55.1, 26.0 and 78.5 % respectively. Among them, highest percentage of sub-standard was found to be in case of coconut oil due to high acid value. Most of the ghee samples were substandard due to high refractive index, low Reichert Meissel Value, high acid value and positive sesame oil test. In most of the substandard mustard/rapeseed oil, high acid values.

3. Sweeteners

Among 84 samples sweeteners; 2 Mishri, 65 Honey, 1 Gur (Sakhkhar) and 23 Glucose were analyze, out of which 11 samples were found to be below standard.

4. Fruits and Vegetables: Altogether 275 samples of fruits and vegetable products were analyzed, out of which 46 samples were found to be below standard.

5. Cereal and Cereal Products: Out of 612 samples of cereals and cereal products, 43 samples were found to be below standard. The substandard noodle (instant and stick) samples of different brands were found to have high percentage of moisture, total ash & acid insoluble ash. Khesari test was found to be negative in all of the Besan samples analyzed.

6. Tea and Coffee:

Altogether 130 tea samples were analyzed. Among them 13 were found substandard due to low caffeine and water extract. As per request, 8 herbal tea were analyzed. Seven samples of coffee were analyzed where one was found substandard due to low alkalinity of ash.

7. Spices

Altogether 283 samples of different varieties of spices were analyzed, among them 29 samples (10.24%) were found substandard. Among 75 turmeric, 2 samples were found to be substandard due to high AIA. Seventeen samples of Mix masala were found to be substandard because of high crude fiber, high total Ash, high AIA, high salt and low non volatile ether extract. Six samples of chilly powder out of 77 samples analyzed were found to be substandard due to high total ash, high crude fiber and low non volatile ether extract. Out of 50 samples of coriander 1 sample was found to be substandard due to high total ash and high acid insoluble ash. Similarly, one out of 35 samples of Cumin powder was found to be substandard because of high acid insoluble ash. Among 4 samples of pepper powder 2 samples were found substandard due to low non volatile ether extract.

8. Salt

Altogether 24 samples of three types of salts namely Common Salt, Black Rock Salt and White Rock Salt were analyzed. Among 21 samples of common salt, 2 are noted substandard due to low sodium chloride content. Out of

two black rock salt samples one was analyzed according to parameters prescribed for the common salt, while another was analyzed for the elements Ca, Mg, Fe, Zn, Cl, and Na as per request.

9. Processed Drinking Water:

Altogether 121 samples of mineral and drinking water of different brand were analyzed for chemical parameters. 13 samples were found substandard; 5 samples were substandard due to presence of ammonia. 2 samples were due to hardness, 3 were due to high pH and 3 with high iron content. Similarly, 140 samples of Processed Drinking water and Drinking Water were analyzed. Out of which, 29 samples were substandard due to High Total Mesophilic Bacterial Count, Coliform Count, Faecal Coliform and E. coli.

10. Grading

A total number of 217 samples of cereals and pulses, spices and others were analyzed for their grading standards. None of the samples were found to be below standard.

12. Food Additives:

Color: Out of 274 samples of sweets and others analyzed for color, 8 samples were found to be below standard.

13. Food Hygiene: Altogether 597 samples of different food commodities (Drinking water, Milk and milk products, cereal and cereal products, Meat and meat products, Tomato ketchup, Soya sauce, soft drinks, bakery products, chop, herbal tea, Candy, Pickles, Instant noodles, Masaura, etc) were analyzed for their hygienic quality. Contamination was found in 148 samples.

Pasteurized Milk: Altogether 33 pasteurized milk samples of different brands were analyzed for contamination and of which 5 samples were found to be Coliform positive.

Milk and Milk Products:

Total number of 33 samples of milk from different dairies and 157 samples of milk products (Skimmed milk powder, Full cream milk powder, Churpi, Ice cream, butter, cheese and Yogurt) were analyzed. About 29 samples of milk products were found to be contaminated with coliform. The result of analysis of milk and milk products is shown in Table 26.

Food and Food Products

Out of 267 samples of different food and food products, 70 samples were found to be below the hygienic standard.

Veterinary Drug Residue:

Altogether 50 samples of milk were analyzed for antibiotic drug residue. Antibiotic residue was not detected in the analyzed samples.

14. Contaminants

Radiation: Altogether, 20 samples of food were received to measure the radiation contamination. Radiation levels of 0 to 122 were detected in those samples. But none of the samples were found to be higher level of radiation than the standard.

Aflatoxin:

110 samples of various types of food and animal feed were analyzed for the detection of aflatoxin B₁ & B₂. The samples were analyzed by thin layer chromatographic method. Estimation were made by the comparison of the fluorescence of samples spot with the fluorescence of standard. Out of 110 samples, 39 samples were found to be contaminated with Aflatoxin B₁ and B₂. The Aflatoxin B₁ (168 ppb) was found in feed samples similarly the highest Aflatoxin B₂ (8 ppb) was also found in feed samples. []

Pesticide Residue:

Altogether 141 samples of different food commodities were received for the detection and estimation of pesticide residue. The samples were analysed by Thin layer chromatography for organochlorine (DDT & BHC) and organophosphorous (Parathion, Methyl Parathion & Malathion) pesticides. None of the samples were found to be contaminated with those pesticides.

Heavy metal:

Out of 28 samples of different commodities were analyzed for heavy metals, in 3 samples (Cold drink 1, flavor enhancer 1 and chicken seasoning 1) Arsenic was detected, in one sample (Vegetable fiber drink), Sodium was detected and in one sample (Tea), Copper was detected.

15. Feed and Feed Ingredients:

Altogether 90 samples of feed and feed ingredients were analyzed for quality control and standardization purpose. Among them 74 samples were of poultry feed, 4 samples were of cattle feed, where as 12 samples were of feed ingredients.

Out of 78 feed samples, 31 were found to be inferior in quality due to low protein, fat, calcium and phosphorus and crude fiber and acid in soluble ash percentage. The substandard samples of layer 1 were due to the low fat and calcium content. Substandard samples of layer 2 were found to have low protein, fat and high salt content. Similarly substandard samples of layer 3 were found due to the low protein, fat and high acid in soluble ash. Among samples of boiler 1, 11 samples were found to be substandard due to low protein, fat, phosphorus, and high acid in soluble ash, crude fiber, and salt. Out of 25 samples of boiler 2, 9 samples were found to be substandard due to low phosphorus, calcium and high acid in soluble ash content. Among 4 samples of cattle feed, 1 sample was found substandard due to high moisture content.

16. Miscellaneous Samples: Out of 233 samples of miscellaneous food samples (chewing/bubble gum, confectioneries, Lapsi candy, chips and cracker, wine/alcohol) 22 samples were found to be below standard. Likewise 70 samples of other various food items were also analyzed. Out of 275 miscellaneous samples of fruits and vegetables, 46 samples were found to be below standard.

B. Quality Assurance Program:

In the context of WTO, Quality Assurance Programme is inevitable in order to harmonize the laboratory practices for the conformity and authenticity of the test. It involves documentation, calibration, testing and improvement of skill of analysts. The following programmes were conducted in this fiscal year 2061/62 under the Quality Assurance Programme.

1. Laboratory Proficiency Testing

- A total number of 150 samples of wheat flour, oil and milk powder were prepared and sent to various laboratories of the Department of Food Technology and Quality Control and to the Regional Food

Technology and Quality Control Offices. The reports were collected and analyzed for their proficiency levels.

2 Updating of Laboratory Manual

Please ask and write specifically how many and what manuals were updated.

3. Calibration of the Laboratory Instruments:

In the fiscal year 2061/62, two types of instruments were proposed to be calibrated. The fundamental thing of laboratory work is the use of accurate weighing instruments, which can be assured by calibration. The other crucial instrument is thermometer. Both of them two weighing balances and 25 thermometers were calibrated in Nepal Bureau of Standards and Metrology (NBSM).

III. FOOD TECHNOLOGY DEVELOPMENT & TRAINING DIVISION

A. Food Technology Development Program:

- Standardization of chhop production based on Niger and Sesame for the establishment of chhop processing unit
- Study of storage stability of green beans (*Phaseolus vulgaris*) in zero energy cool-chamber
- Product Development from Green Banana and Technology transfer through training to the Farmers
- Quality Evaluation of Dried Cauliflower Packed in Different Packaging materials
- Study on the possibility of shelf life extension of Tofu
- Trial production of Maseura from chayote (*Eskus*) and gourd
- Frozen French Fries Production trial study
- Studies on the Preparation and Storage of Vegetable based Sauce
- Study on the preparation of Lapsi pulp stock using IMF technology and storage stability

B. Training program

DFTQC has been conducting training programmes with an aim to generate self-employment, enhance food safety, food availability through processing and income generation leading to poverty reduction targeting especially women, farmer and the unemployed youth as well as to promote food processing industries in Nepal. In the fiscal year 2061/62, Food Technology Development & Training Division, Babarmahal, has conducted four different training packages at different places as shown in Table 47. A total number of 83 participants from different districts participated in the trainings and among them 67 % of the participants were women.

Table 47: Different training programs conducted during FY 2061/62

Subject	Duration	Place	Participants	% Male Participants	% Female Participants
Food processing technology	1 week	Kathmandu	25	28	72
Sauce/Pickle Processing technology	1 week	Kathmandu	25	36	64
Fruits and Vegetable processing	1 week	Dhanakuta	25	20	80
Post harvest handling	1 week	Kathmandu	8	75	25
Total No. of Participants			83	33	67

C. Publications:

In the fiscal year 2061/62(2004/2005), Food Technology Development & Training Division has published the following:

- Directory of the Food Processing Industries in Nepal 2062
- Traditional Food Technology: An Introduction" (Phala Tatha Tarkarima Aadharit Paramparagat Khadya Prabidhi: Ek Parichaya)

D. Problem Identification of Processed Foods:

In order to identify the causative factors of the existing problems of quality food production in sauce and pickle processing industries, a survey was conducted in the FY 2061/62 using the questionnaire method. All of the factories surveyed found to lack qualified technical manpower and the laboratory facilities. The sanitation practices followed and the location of the factories themselves were not satisfactory. Waste disposal system was also very poor which has polluted the surrounding environment also. Workers were not using aprons, cap and gloves. From the information gathered through the surveys, the problems faced by the factories were categorized into four groups: Financial, Technical, Legal and Others. Mostly the technical problems faced by the factories were due to lack of qualified manpower and hygienic condition maintenance and can be overcome by providing training to the managers and the technical personnel about food hygiene and food safety.

E. Purchasing of machineries/ equipments

In the fiscal year 2061/62(2004/2005) the Food Technology Development and Training Division bought the following machines and equipments so as to strengthen its capacity for Research and Development activities (Table 48)

Table 48: List of equipments purchased

Particulars:	Quantity:
Computer with printer	1 set
Digital camera	1 set
Penetrometer	1 set

F. Consultancy services

During the fiscal year 2061/62(2004/2005), technical consultancy services related to food processing were provided to 20 different entrepreneurs, interested individuals and organizations from different districts. The services provided mostly were on different areas of food processing such as drying, pickling, spiced candy (titaura) production, chemical preservation methods, fermentation, bulk storage method, candy technology, noodle making and honey processing as well as on the use of packaging materials, food colors, and preservatives. The technical experts as trainers were provided for such as Bael processing factory and "Kafal processing training" organized by Micro-Enterprise Development Programme in Ramechhap and "Snack food training" program in Bhaktpur.

IV. NATIONAL NUTRITION PROGRAM

1. Food and Nutrition Analysis:

Altogether, 200 samples of food items were analyzed for their nutrient content. Among them 45 samples were various cereal and legume flours, 46 fresh vegetables, 46 various types of Maseura and 68 were other food items.

2. Food and Nutrition Research and Development

2.1. Recipe Development: Two recipes (Sel Roti and Pakauda) were developed and analyzed for their nutritional quality.

Out of three Sel Roti recipes, Sel Roti with pumpkin was found to be soft (desirable), the color of Sel Roti with ripe banana was dark (undesirable) and the color and taste of Sel Roti with raw banana powder was found to be less acceptable. The Sel Roti made of pumpkin was too oily. Out of four Pakauda recipes, Pakauda with carrot was found to be tastiest and the one made of corn flour and besan was not too tasty and the texture was also not good.

2.2. Study on Snacks Consumption Behavior and Nutritional Status of School Children:

Snacks consumption study was conducted on the basis of predetermined questionnaire. Five private and five government schools were selected for the purpose. On the basis of predetermined structured questionnaires, a survey was conducted among 950 school children of class 6 to 10 and age group 10 to 19

from 10 schools. The questionnaire included the snacks consumption behavior as well as statistics regarding personal and family was collected. The obtained data was analyzed and the summary of the result is given below :

- About 51.8% of the children were found to be undernourished (BMI < 18.5), where as 2.7 % were found to be overweight (BMI > 25)
- Both underweight and overweight percentage was found to be slightly higher among the students of in private schools in comparison with those of government schools.
- Among boys, government school has a higher percentage (58.7 %) of undernourishment than in the private schools (55.1 %). But the overweight rate was found to be higher in private schools (3.5%) than in the government schools (2%).
- Among girls, the underweight % was found to be higher (50.0 %) in private schools than in government schools (40.9%). Similarly, overweight rate was found to be higher in private schools (2.8%) than in the government schools (2.0%)

3. Food and Nutrition Education and Communication

3.1. Food and Nutrition Radio Program: A total number of 24 radio programmes were developed and broadcast through Agriculture Radio Program.

3.2. Food and Nutrition Message through Radio: A radio jingle based on food based dietary guidelines was prepared and broadcast 16 times through Radio Nepal.

3.3. Tele film: Two Telefilms were telecasted through Nepal Television. One named "*Pasni*" (the feeding ceremony) one time and other named "*Ankha Khulyo*" (Eye Opened) another time.

3.4. Poster Publication: Two posters were published. Among them one poster regarding the 'Kitchen Garden as Source of Vitamin A and Iron Rich Foods' and another regarding 'Food Composition Table based on Nepalese Foods.'

4. Community Nutrition Improvement Program

4.1. Food and Nutrition Survey: A food and nutrition survey was conducted in Gundu, Katunze and Dadhikot VDCs of Bhaktapur district. On the basis of predetermined questionnaire, the summary of the finding is given as follows:

- Among under five children,
 - 38.9% (41 % boys and 37% girls) children were found to be stunted (z score of height for age <-2sd) with 19.3 % (20.1 % boys and 18.5 % girls) severely stunted (z score of height for age <-3sd).
 - 22.3% (25.9 % boys and 19.1 % girls) were found to be underweight (z score of weight for age <-2sd) with 6.4% (5.8 % boys and 7 % girls) severely underweight (z score of age for weight <-3sd).
 - 7.8% (9.4 % boys and 6.3 % girls) were found to be wasted (z score of weight for height <-2sd) with 1.4% (2.2 % boys and 0.6 % girls) severely wasted.
 - 3.7% were found to be obese (z score of weight for height >2sd)
- Among adults,
 - 14.3% (Male 14 % and female 14.6 %) were found to be overweight (BMI > 25) and 19.2% (19.9 % males and 18.4 % females) were found to be underweight (BMI < 18.5)

4.2. Seminar: A seminar was organized on 12th Chaitra, 2061 in District Agriculture Office, Bhaktapur. In the seminar, the report of household nutrition survey was presented and District Agriculture Officer, Mr. Ram Ayodhya Mahato was commentator. There were 20 participants from various government as well as non- government organizations.

4.3. Food and Nutrition Training (Assistant Level): A three days' Nutrition Training was organized in Katunje, Bhaktapur. There were 20 participants from three VDCs i.e. Dadhikot, Gundu and Katunje. The participants were from Agriculture Service Center, Livestock Service Center, Women Development Office, VDC and other non- government organizations.

4.4. Food and Nutrition Training (Mothers' Level): Three days' training was organized in three VDCs (Gundu, Dadhikot and Katunje). One Female Community Health Volunteer and one woman from each ward were invited for the training. In each training program, 20 participants were included, where a total number of 60 participants completed the training.

V. SPS NATIONAL ENQUIRY POINT

Progress Report of SPS National Enquiry Point towards meeting the obligation of WTO is presented in the table below :

Table 59: Progress towards meeting the obligations

<i>Action</i>	<i>Implementation Date</i>	<i>Responsible organization</i>	<i>Present Status</i>
1. Establishment and operation of a single Contact Point for Information ("enquiry point") (Article 7 and Annex B:2)	1 January 2004	Department of Food Technology and Quality Control (DFTQC)	National SPS enquiry point has been established.
2. Acquisition of equipment and training of SPS enquiry point personnel (Article 7 and Annex B:2)	1 January 2005	DFTQC	<ul style="list-style-type: none"> ☞ One set of computer acquired. ☞ E-mail account opened (spsnepal@ntc.net.np) ☞ Internet connected. ☞ Website prepared and hosted. (http://www.spsenquiry.gov.np) ☞ One of the staffs from SPS enquiry point was subjected to a 3 days training program on SPS, organized by WTO. ☞ Request for training and other equipments has been forwarded to higher authorities.
3. Approval or Amendments to: Plant Protection Act 1972	Prior to 1 July 2005	Plant protection Directorate/ Legal Section MoAC	
4. Approval or Amendments to: Seed Act of 1988	Prior to 1 July 2005	National Seed Board / Legal Section MoAC	
5. Designation of authority responsible for making notifications to the WTO and ensuring transparency obligations are met on an ongoing basis.	Prior to 1 July 2005	WTO Section of ABPSD	
6. Review of all existing regulations and new amendments to ensure regulations are based on risk assessments and sufficient scientific evidence.	Prior to 1 July 2005	MoAC / Legal Section MoAC	<ul style="list-style-type: none"> ☞ Draft Food Act for amendment has been prepared in the assistance of FAO. ☞ Translation of draft into Nepali has been completed ☞ The translated draft has to be subjected for discussion with stakeholders, then it has to be presented to legislative procedure for enactment.
7. Upgrading of human resources with special emphasis on quarantine management, meat inspection, veterinary investigation and animal disease risk analysis.	Prior to 1 July 2005	Administration Division MoAC in coordination with Departments DFTQC, DoA, DLS.	<ul style="list-style-type: none"> ☞ Four Food Quarantine Lab established at four customs points (Tatopani, Kakabhitta, Birgunj, Mahendranagar) and one TIA Custom Food Inspection Unit. Most of the staffs are appointed (11 posts fulfilled out of 13). ☞ Request for the resources for training program has been forwarded to higher authorities.
8. Declaration of pest or disease-free areas and areas of low pest or disease prevalence (Article 6 and Annex A: 6 and A: 7)	Prior to 1 July 2005	Plant Protection Directorate, Animal Health Directorate, NARC	
9. Approval or Amendments to: Plant Protection Regulations 1975	Prior to 1 January 2006	Plant Protection Directorate/ Legal Section MoAC	

10. Membership in the International Plant Protection Convention (IPPC)	Prior to 1 January 2006	Administration Division MoAC	
11. Implementation of Publication and Notification procedures including a process to take comments into account without discrimination (Annex B: 1, 3, 5 and 10)	Prior to 1 January 2006	WTO Section / ABPSD	
12. Initial notification of legislation and regulations to WTO	Prior to 1 January 2006	WTO Section / ABPSD	
13. Development of SPS guidelines and protocols	Prior to 1 July 2006	DFTQC	<ul style="list-style-type: none"> ☞ Working guidelines for Quarantine ☞ The Draft of the Food Act has been prepared and circulated. ☞ Work on the preparation of other SPS and food safety related document is going on.
14. Upgrading and strengthening of quality control unit, laboratory, quarantine system and field veterinary system	Prior to 1 January 2007	DFTQC/ DOA / DLS	☞ Budgetary resources for upgrading and strengthening of quality control unit, laboratory, has been allocated recently.
15. Opening new quarantine check post and development of pre and post quarantine facilities	Prior to 1 January 2007	Plant Quarantine Section / DoA / Animal Quarantine Section / DLS, MoAC	
16. Harmonization with international standards, guidelines, and recommendations (Article 3)	Prior to 1 January 2007	DFTQC	☞ Process for the Harmonization of standard on different food products with CODEX is going on.
17. Control, inspection and approval procedures for all SPS measures	Prior to 1 January 2007	National SPS Enquiry Point	☞ Process is going on.
18. Review the import of the PIC listed pesticides Methyl Parathion and Monocrotophos		Plant Protection Directorate	
19. Streamline and scientifically build land border quarantine procedures (in line of APPPC)		Plant Quarantine Section/ Animal Quarantine Section	
20. Full implementation of the WTO Agreement on Sanitary and Phytosanitary Measures	Prior to 1 January 2007	HMG/ Nepal	

[Note: The report includes the progress accomplished till the end of Ashad 2062.]

Documents Available at SPS Enquiry Point

Codex Standards for

- ☞ Pineapple
- ☞ Guavas
- ☞ Honey
- ☞ Wheat Flour
- ☞ Vegetable Protein Products
- ☞ Irradiated Foods
- ☞ Table Olives
- ☞ Kimchi
- ☞ Fermented Milk
- ☞ Baby Corn
- ☞ Animal Fats
- ☞ Sugars
- ☞ Bananas
- ☞ Cheese in Brine
- ☞ Dried Edible Fungi
- ☞ Named Vegetable oils
- ☞ Milk Fat Products
- ☞ Milk Powders and Cream Powders
- ☞ Canned Shrimps or Prawns
- ☞ Use of Dairy Terms
- ☞ Litchi
- ☞ Butter
- ☞ Vegetable Juices
- ☞ Wheat and Durum Wheat
- ☞ Peanuts
- ☞ Sorghum Flour
- ☞ Certain Pulses
- ☞ Rice
- ☞ Grade Salts
- ☞ Ginger
- ☞ Cheese
- ☞ Canned Tomatoes
- ☞ Canned Mushrooms
- ☞ Canned Green Beans and Canned Wax Beans
- ☞ Canned Grape Fruits
- ☞ Apple Juice Preserved exclusively by physical means

Other Documents

- ☞ A guide to WTO SPS Agreement - A Training CD-ROM
- ☞ SPS Measures & Environmental Management in Bangladesh
- ☞ Codex Rules of Procedures
- ☞ Sanitary and Phytosanitary Measures in SAARC Countries
- ☞ General Requirements for the competence of testing and calibration of laboratories

Documents available in Soft copies

- ☞ Issue Paper from Pakistan regarding SPS & TBT agreements
- ☞ The Prevention of Food adulteration acts and Rules (2004)
- ☞ Agreement on the application of sanitary and Phytosanitary measures
- ☞ The Challenge of Conforming to SPS Measures for China's Agricultural Exports
- ☞ International Harmonization of SPS Standards-submitted by India
- ☞ Food Sanitation Law in Japan
- ☞ Food additives in Japanese Food laws
- ☞ Food safety basic law (Japanese)
- ☞ Pakistan plant quarantine acts
- ☞ Terrestrial Animal Health Code (2004)

VI. REGIONAL FOOD TECHNOLOGY AND QUALITY CONTROL OFFICES (RFTQCOs)

Annual progress report of RFTQCOs for the Fiscal Year 2061/62

<i>Programme</i>	<i>Unit</i>	<i>Biratnagar</i>	<i>Hetauda</i>	<i>Bhairahawa</i>	<i>Nepalgunj</i>	<i>Dhangadhi</i>
Market Inspection and Sampling	Food Feed	502 25	525 11	702 18	390 25	240 ---
Food Industry Inspection	Number	100	127	100	10	65
Inspection of Hotels and Restaurants	Number	140	224	128	121	70
Industry Licensing	Number	77	195	136	35	24
Analytical Service	Collected	527	536	720	635	240
	Requested	3324	5736	200	100	100
Training on Food Processing	Times	2	2	2	2	2
Technology Trial Study	Times	6	6	6	6	6
Interaction Programme on Food Safety	Times	1	1	1	1	1
Establishment of Food Inspection Unit	Times	2	7	4	2	2
Machinery Purchase	Times	1	1	1	1	1
Training Hall and Drainage system Repair	Times	--	2	--	--	--

VII. APPLE PROCESSING CENTRE, JUMLA

Apple Processing Centre, Jumla is established to provide the training and technical consultancy services on fruits and vegetable processing especially focused on apple to the local people of Karnali Zone. The progress report of Apple Processing Centre, Jumla is given in Table 62.

Table 62: Annual Progress Report of Apple Processing Centre, Jumla

<i>Programme</i>	<i>Unit</i>	<i>Achievement</i>
Training on Apple and Vegetable Processing	Times	2
Technical Trial Study	Study	6
Consultancy and Technical Services (Processing of Apple)	Kilogram of Apple	20,000

VIII. FOOD QUARANTINE LABORATORIES (FQLs)

Four Food Testing Laboratories were established at the customs points respectively in Kakarvitta, Birgunj, Mahendranagar and Tatopani. The objective of Food Quarantine Laboratories is to ensure that SPS/WTO measures of the export import food commodities are being complied to ensure that quality and safe food commodities are being imported and exported. Some of the laboratories have started their function and some others are in the initial phase of their establishment.

Please put it under the Organization/Regional Offices

DFTQC has 5 different Regional Food Technology and Quality Control Offices (RFTQCOs) situated at Biratnagar, Hetauda, Bhairahawa, Nepalgunj and Dhangadhi respectively. The brief description and progress report of these offices for fiscal year 2061/62 is reported in Table 60 and Table 61 respectively.

Table 60: Brief Description of the RFTQCOs

Regional offices	Location	Est. (B.S.)	Working districts	Food Quarantine Laboratories (FQL)
RFTQCO, Biratnagar	Biratnagar 13, Sombare Hatiya, Morang	2036	Okhaldhunga, Khotang, Udayapur, Bhojpur, Sankhuwasabha, Solukhumbu, Dhankuta, Terhathum, Taplejung, Panchthar, Ilam, Jhapa, Morang, Sunsari, Saptari, Siraha (16 Districts)	Kakarvitta FQL
RFTQCO, Hetauda	Hetauda Industrial District, Hetauda-9, Makawanpur	2032	Sindhuli, Dhanusha, Mahottari, Sarlahi, Rautahat, Bara, Parsa, Makawanpur, Chitawan (9 Districts)	Birgunj FQL
RFTQCO, Bhairahawa	ThutePipal Bhairahawa	2050	Gorkha, Lamjung, Parbat, Mustang, Manang, Myagdi, Baglung, Tanahun, Kaski, Ayangia, Palpa, Gulmi, Arghakhanchi, Kapilbastu, Nawalparasi, Rupandehi (16 Districts)	
RFTQCO, Nepalgunj	Surkhet Road, Nepalgunj, Banke	2050	Humla, Mugu, Jumla, Dolpa, Kakikot, Dailekh, Jajarkot, Rukum, Rolpa, Salyan, Pyuthan, Dang, Surkhet, Banke, Bardia (15 Districts)	
RFTQCO, Dhangadhi	Dhangadhi, Kailali	2050	Kailali, Doti, Achham, Bajura, Bajhang, Darchula, Baitadi, Dadeldhura, Kanchanpur (9 Districts)	Mahendranagar FQL

[Note: Out of 75 districts, rest 10 districts are under the DFTQC (Established at 2018 B.S.). Tatopani FQL & TIA Customs Food Inspection Units are under the DFTQC.] [District Food Inspection Units are established in Jhapa, Sunsari, Saptari, Siraha, Udayapur, Dhanusha, Mahottari, Sarlahi, Chitawan, Parsa, Bara, Rautahat, Tanahu, Kapilbastu, Nawalparasi, Kaski, Dang, Bardiya, Surkhet and Kanchanpur districts]

Please put it under the Activities

Major Activity Areas of RFTQCOs

1. Quality Control Activities: Out of the total programmes as targeted annually by RFTQCOs, the main focus has given to the program related to quality control, which obviously includes regular inspection of market and industries. After analyzing the samples collected on inspection, the samples not complying to the prescribed standards of the given food/feed commodity, the cases are considered as the violation of Food Act and proceeded forward for legal action. Thus the technical aspects such as inspection, sampling and analysis has been the vital factors for the preliminary emergence of the cases has to be thoroughly tackled by RFTQCOs in the regions in order to create the fundamental ground for the legal aspect to proceed on. In addition to that, the regional offices have to notify to the opponent for the explanation and forward the file to the district attorney accompanying all the technical evidences, including explanation of the opponent. Upon submission of the evidences to district attorney, who gives the decision whether the case has been matured to file in the preliminary court Chief District Officer (CDO). Sometimes, because of the delay or reluctance from the side of the opponent to attend for explanation, the time lapses between sampling and case file will be significantly prolonged. RFTQCOs also conduct the Consumer Awareness programmes for food quality and safety.

2. Analytical Services: Important activity of the RFTQCOs is to provide the Analytical Services. Two types of samples are received in the RFTQCOs i.e. Collected and Requested. Food inspectors of the RFTQCOs and District Food Inspection Unit collect the food and feed samples as per the food and feed act. The RFTQCOs receives the samples from the different food and feed industries, from the custom points and from the consumers and other related associations. The sample which cannot be analyzed (for specific parameter) in RFTQCOs is sent to the DFTQC, Central Laboratory for the analysis.

3. Technology Development and Training: Another important activity of the RFTQCOs relates to the Technology Development and Training on appropriate Food Processing especially on fruits and vegetables Processing, Packaging and Preservation.

SPS Enquiry Point

Department of Food Technology and Quality Control (DFTQC) under Ministry of Agriculture and Cooperatives (MOAC), is designated as Nepal's SPS National Enquiry Point in 1 January 2004 after Nepal's Accession to WTO since Each WTO member is required to set up a single SPS National Enquiry Point (NEP).

TASK OF NATIONAL ENQUIRY POINT(NEP)

NEP is responsible for providing information to all the WTO members regarding

- ☞ Any Sanitary and Phytosanitary regulations adopted or proposed within the country.
- ☞ Any control or inspection procedures, production and quarantine treatment, pesticide tolerance and food additive approval procedures, which are operated within the country.
- ☞ The membership and participation of the member, or of relevant bodies within Nepal, in international and regional Sanitary and Phytosanitary organizations and systems.
- ☞ Risk assessment procedures, factors taken into consideration as well as the determination of the appropriate level of Sanitary and Phytosanitary Protection
- ☞ The membership and participation of the member in the bilateral and multilateral agreements and arrangements within the scope of the SPS agreements.
- ☞ The texts of such agreements and arrangements.

NATIONAL ENQUIRY POINT is also responsible for

- ☞ Requesting information about SPS measures in other WTO countries for His Majesty's Government of Nepal agencies
- ☞ Managing overseas government requests for information
- ☞ NEP avails necessary logistics from the Department of Food Technology and Quality Control and request the MOAC for other supports.