वार्षिक प्रगति प्रतिवेदन

आ.व. २०७३/७४

नेपाल सरकार
कृषि विकास मन्त्रालय
खाद्य प्रविधि तथा गुण नियन्त्रण विभाग
बबरमहल, काठमाडौं

वार्षिक प्रगति प्रतिवेदन

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बबरमहल, काठमाडौं, नेपाल ।

फोन नं. ४२६२३६९, ४२६२७३९, ४२४००१६, फ्याक्स: ४२६२३३७

ईमेल: info@dtfqc.gov.np वेवसाईट: www.dtfqc.gov.np

सम्पादक मण्डल

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पत्र संख्या:-
च. नं.:-
प्राप्त पत्र संख्या र मिति:-

प्राक्कथन

खाद्य प्रविधि तथा गुण नियन्त्रण विभागले आफ्नो स्थापनाकाल देखिनै खाद्य वस्तुहरुको गुणस्तर नियमन, प्रविधि विकास एवं प्रसार र पोषण ज्ञान विस्तारको क्षेत्रमा आफ्नो अग्रिम भूमिका निर्वाह गर्दै आएको छ । हाल यस विभागले राष्ट्रिय एवं अर्न्तराष्ट्रिय स्तरमा खाद्य वस्तुहरुको बढ्दो व्यापारिक कारोवारमा गुणस्तरियता र स्वच्छता कायम राख्दै व्यापारलाई सहजीकरण गराई उत्पादनस्तर देखि विक्री वितरण, आयात निर्यात र उपभोगस्तर सम्म खाद्य ऐन २०२३ अनुरुप खाद्य गुणस्तर नियमन तथा निरीक्षण प्रमाणिकरण तथा दाना ऐन २०३३ अनुरुप दाना गुण नियन्त्रण गर्ने कार्य गर्दै आइरहेको छ । खाद्य तथा दाना ऐन अनुरुप मिसावट, न्यूनस्तर तथा दूषित खाद्य तथा दाना वस्तुहरुको उत्पादन तथा विक्री वितरण गर्ने व्यवसायी उपर कानूनी कारवाही गरी उपभोक्ता हक हित र स्वस्थको संरक्षण गर्ने कार्य पनि यस विभागबाट भई आएको छ ।

विभागले लक्षित उद्देश्य पुरा गर्ने क्रममा निरन्तर रुपमा स्वीकृत वार्षिक कार्यक्रम अनुरुप विभागका शाखा, महाशाखा तथा मातहत कार्यालयहरुबाट भए गरेको प्रगति तथा उपलब्धीहरु समेती तालुक निकायमा मासिक, चौमासिक र वार्षिक रुपमा प्रगति प्रतिवेदन तयार गरी पेश गर्ने कार्य गर्दै आइरहेको छ । गत आ.व. २०७३/७४ मा संचालित खाद्य पोषण तथा प्रविधि सम्बन्धी कृयाकलापहरुको वार्षिक कार्य प्रगतिहरुको जानकारी एवं सार्वजनिक गराउने उद्देश्य अनुरुपको वार्षिक कार्य प्रगति प्रतिवेदन तयार गरिएको हो । यस अवधिमा तोकिएको कार्य लक्ष्य पुरा गर्ने तर्फ ठोस योगदान दिने यस विभागका सम्पूर्ण जिम्मेवार कर्मचारीहरुलाई धन्यवाद दिदै सरोकारवाला सबैको लागि यो पुस्तिका उपयोगी हुने आशा लिएको छु ।

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संजीव कुमार कर्ण
महानिर्देशक
खाद्य प्रविधि तथा गुण नियन्त्रण विभाग

नेपाल सरकार
कृषि विकास मन्त्रालय
खाद्य प्रविधि तथा गुण नियन्त्रण विभाग

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सम्पादकीय

खाद्य ऐन २०२३ र दाना ऐन २०३३ तथा यी दुइटा ऐनसंग सम्बन्धित कानूनहरु लागू गरी स्वच्छ, गुणस्तरीय र पोषणयुक्त खाद्य पदार्थको आपूर्तिको एकीन गरी आम नेपाली उपभोक्ताको हक हित र स्वास्थ रक्षा गर्ने एवं दाना पदार्थमा गुणस्तरीयता कायम गर्ने नेपाल सरकारको नियमनकारी निकायको रुपमा खाद्य प्रविधि तथा गुण नियन्त्रण विभागको स्थापना भएको हो । साथै उपयुक्त खाद्य प्रविधि प्याकेजहरुको विकास तथा प्रसार गरी कृषिको व्यवासायीकरण र आधुनिकीकरण मार्फत खाद्य पोषण सुरक्षा कायम गर्ने प्रवर्धनात्मक जिम्मेवारी समेत यस विभागमा रहेको छ । यी दुइटा प्रमुख लक्ष्य प्राप्तिका लागि नेपाल सरकारले यस विभाग मार्फत सालवसाली कार्यक्रम बजेट स्वीकृत गरी कार्यक्रम सन्चालनमा ल्याइरहेको छ ।

यसरी बार्षिक रुपमा तोकिएका कार्यक्रमहरु सम्पन्न गरी प्राप्त उपलब्धिहरु सम्बन्धित सरोकारवालामा जानकारी गराउने उदेश्य अनुरुप आ व २०७३/७४ मा सन्चालित कार्यक्रमहरुको विभागका सबै महाशाखाहरु, शाखाहरु र मातहत निकायहरुबाट प्राप्त प्रगतिहरु समेटी संक्षिप्त प्रगति प्रतिवेदनको रुपमा योजना अनुगमन तथा मूल्यांकन शाखाबाट यो पुस्तिका तयार गरिएको छ । यसरी प्रगति प्रतिवेदन पेश गर्ने महाशाखाहरु, शाखाहरु र मातहत निकायहरु प्रमुखहरु र संवन्धित कर्मचारीहरु सबैमा सम्पादक मण्डल हार्दिक धन्यवाद ज्ञापन गर्दछ । साथै यसरी प्राप्त सबै प्रगतिहरुलाई कम्पाइल गरी यो पुस्तिकालाई यस रुपमा ल्याउन महत्वपूर्ण भूमिका निर्वाह गर्ने सम्पादक मण्डलका सदस्य सचिव श्री प्रतिमा श्रेष्ठ र सम्पादक मण्डलका सदस्य श्री अशोक गौतमलाई विशेष धन्यबाद दिन चाहन्छु । अन्तमा: यस पुस्तिकामा केही कमी कमजोरीहरु देखिन गएमा सो को पृष्ठपोषण गरी आगामी अंकहरुको गुणस्तरको स्तरोन्नती गर्ने कार्यमा संलग्न हुनुहुन समेत सबैमा अनुरोध गर्दछु ।

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नवराज दाहाल
बरिष्ठ खाद्य अनुसन्धान अधिकृत (शाखा प्रमुख)
योजना, अनुगमन तथा मूल्यांकन शाखा
खाद्य प्रविधि तथा गुण नियन्त्रण विभाग

विषय सूची

प्रगति सारांश

यस आर्थिक बर्ष २०७३/७४ मा खाद्य प्रविधि तथा गुण नियन्त्रण विभागले स्वीकृत बार्षिक कार्यक्रम अनुसार निम्न बमोजिमको प्रगति हासिल गरेको छ ।

(क) यस आर्थिक बर्षको अवधिमा ५ क्षेत्रका ४७ जिल्लाहरुबाट कुल २८६५ वटा खाद्य तथा दानाका नमूनाहरुको संकलन गरी जांच परिक्षण गरियो जसमध्ये ३६५ वटा नमूनाहरु (१२.७ %) न्यूनस्तर तथा दूषित पाईयो ।

(ख) १३७१ पटक खाद्य तथा दाना उद्योगहरुको निरीक्षण गरियो ।

(ग) यस अवधिमा न्यूनस्तर तथा दूषित खाद्य तथा दाना वस्तुहरु उत्पादन तथा विक्री गर्ने २६३ व्यवसायीहरुलाई अभियोग सहित मुद्दा दायर गरियो ।

(घ) २५४५ पटक विभिन्नस्तरका होटल, रेष्टुरेण्ट तथा मिठाई मसलहरु निरीक्षण गरियो ।

(ङ) १५१४ वटा खाद्य उद्योगहरुको अनुज्ञापत्र नविकरण गर्नुको साथै ५१७ वटा नयां खाद्य उद्योगहरुलाई अनुज्ञापत्र जारी गरियो ।

(च) विभिन्न भन्सार कार्यालयहरुबाट प्राप्त २७,४२९ खाद्य नमूनाहरुको आयात निर्यात गुण प्रमाणिकरणको कार्य सम्पन्न गरियो ।

(छ) ७९ वटा होटल रेस्टुरेन्टहरुको खाद्य स्वच्छता सम्वन्धि लोगो स्तरीकरणको कार्य सम्पन्न गरियो जसमा २१ वटा उतमस्तर, ४० वटा मध्यमस्तर, १७ वटा न्यूनस्तर र १ वटा खरावस्तर रहेको पाइयो । मध्यमस्तर र न्यूनस्तरलाई खाद्य स्वच्छता सुधार गर्न निर्देशन दिइयो भने खरावस्तर पाउने रेस्टुरेन्ट बन्द गरिएको थियो ।

(ज) रेपिड रेस्पोन्स मोडालिटीमा ५९४ पटक संयुक्त अनुगमनको कार्य सम्पन्न गरियो ।

(झ) ४१,०३५ खाद्य तथा दानाको नमूनाहरु परिक्षण गरी प्रयोगशाला सेवा दिईयो । साथै यस अवधिमा केन्द्रीय खाद्य प्रयोगशालाले १४ वटा माइक्रोवाइलोजीकल पारामिटरहरुमा एक्रडिटेशनको स्कोप थप गर्न सफल भयो ।

(ञ) केन्द्र तथा क्षेत्रीय कार्यालयहरुबाट समेत गरी ३९ वटा पोष्ट हार्भेष्ट प्रविधि सम्बन्धी ट्रायल परिक्षण अध्ययन गरियो । यसैगरी खाद्य प्रविधि विकास सम्वन्धि २ वटा अध्ययन अनुसन्धानको कार्य सम्पन्न गरियो ।

(ट) खाद्य प्रशोधन, संरक्षण, स्वच्छता, प्याकेजिङ्ग र SPS सम्बन्धी ३३ वटा सिपमूलक तालिम संचालन गरी ६३५ जनालाई तालिम दिइयो ।

(ठ) खाद्य पोषण सम्बन्धी १४ पटकमा २९३ जनालाई देशभरी तालिम दिईयो ।

(ड) बहुसंचार र बहुभाषाको माध्यमबाट खाद्य स्वच्छता र पोषण सम्बन्धी सूचना तथा सन्देशहरु निर्माण गरी पटक पटक प्रचार प्रसार गरियो ।

(ढ) ३२ पटक एस पि एस इन्क्वारी सेवा प्रदान गर्ने र ६ वटा एस पि एस सम्वन्धि प्रकाशनहरुको कार्य सम्पन्न गरियो ।

(ण) यस अवधिमा रु २,२८,९४,१८०।- राजश्व प्राप्त भयो ।

खाद्य प्रविधि तथा गुण नियन्त्रण विभाग

(खाद्य पोषण तथा प्रविधि कार्यक्रम ब.उ.शि.नं. ३१२१११३/३१२१११४ केन्द्रीयस्तरिय आयोजना)

परिचय

खाद्य प्रविधि तथा गुण नियन्त्रण विभाग सुरुमा कृषि खाद्य तथा सिंचाई मन्त्रालय मातहत रहने गरी खाद्य विभागको रुपमा २०१८ सालमा स्थापना भएको थियो । हाल कृषि विकास मन्त्रालय अन्तर्गतका २ विभागहरु मध्येको एक विभागको रुपमा कार्यरत रहेको छ । वि.सं. २०२३ सालमा यसलाई विभागस्तरिय कार्यालयकै रुपमा खाद्य अनुसन्धानशाला नामाकरण गरियो । वि.सं. २०२३ सालमा खाद्य ऐन र वि.सं. २०३३ सालमा दाना ऐन तर्जुमा एवं लागु भयो । वि.सं. २०३७ साल पछि लामो समयसम्म यो विभाग केन्द्रीय खाद्य अनुसन्धानशालाको नामले परिचित रह्यो । वि.सं. २०५७ सालमा मन्त्रालयस्तरको पुनर्संरचनामा यसलाई खाद्य प्रविधि तथा गुण नियन्त्रण विभागको रुपमा नामाकरण गरियो । हाल यसले नेपाल अधिराज्यको ७५ जिल्लामा खाद्य स्वच्छता गुणस्तर नियमन र ४० जिल्लामा दाना पदार्थहरुको स्वच्छता नियमन गरी आम उपभोक्ताहरुको हक हितको संरक्षण गर्दै आइरहेको छ । सोही अनुरुप उपभोक्ता एवं व्यवसायीहरुलाई प्रयोगशाला सेवा दिई आई रहेको छ । साथै यस विभागबाट स्थानिय उपयुक्त एवं व्यवसायमूलक खाद्य प्रविधिहरुको विकास एवं शिपमूलक तालिम दिई खाद्य प्रौद्योगिकरणमा टेवा पुऱ्याउनुको अतिरिक्त खाद्य पोषण ज्ञान विस्तार र वाल आहार विकास जस्ता क्रियाकलापहरु संचालन गरी कुपोषण न्यूनिकरणमा समेत सघाउ पुऱ्याउदै आइरहेको छ ।

दूरदृष्टि (Vision)

आम उपभोक्ताहरुलाई स्वच्छ, गुणस्तरिय र पोषणयुक्त खाद्य तथा दाना वस्तुहरुको आपूर्तिलाई सुनिश्चितता प्रदान गर्ने ।

उद्देश्य (Objectives)

- खाद्य वस्तुहरुको उत्पादनस्तर देखि विक्री वितरण लगायत आयात/निर्यात सम्म शुद्धता कायम गर्ने ।
- विश्वसनीय र भरपर्दो प्रयोगशाला सेवा दिने ।

- खाद्य प्रशोधन, संरक्षण र प्याकेजिङ्ग सम्बन्धी उपयुक्त प्रविधि विकास एवं शिपमूलक तालिम कार्यक्रम संचालन गरी खाद्य प्रौद्योगिकरणमा टेवा पुऱ्याउने ।
- खाद्य पोषण ज्ञान विस्तार गर्ने ।
- बाल आहार/पोषिलो आहार विकास तथा न्यून उपभोग एवं अल्प प्रचलनमा रहेका कृषि तथा वनजन्य खाद्य वस्तुहरुलाई Staple food को रुपमा परिकार विकास गर्ने ।

कार्यनीतिहरु

- खाद्य वस्तुहरुमा स्वच्छता तथा गुणस्तर नियमन गर्ने ।
- दाना पदार्थहरुमा स्वच्छता कायम गर्ने ।
- प्रयोगशाला परिक्षण सेवा दिने ।
- खाद्य वस्तुहरुबाट हुन सक्ने संभाव्य जोखिम तथा चुनौति पहिचान गर्ने विशेष परिक्षण/अनुसन्धान गर्ने ।
- प्रयोगशाला एक्रिडिटेशन सम्बन्धी कार्य गर्ने ।
- आयात/निर्यात सहजीकरणको लागि खाद्य क्वारेन्टाइन सेवा दिने ।
- एस पि एस इन्क्वायरी प्वाइन्टको मार्फत एस पि एस सेवा लिने/दिने ।
- खाद्य प्रौद्योगिकरण टेवा पुऱ्याउन उपयुक्त एव व्यवसायिकमूलक प्रविधिहरुको विकास एवं सिपमूलक तालिमहरु दिई खाद्य प्रौद्योगिकरणमा टेवा पुऱ्याउने ।
- खाद्य वस्तुहरुको पौष्तिक तत्व विश्लेषण गर्ने ।
- खाद्य पोषण ज्ञान विस्तार कार्यक्रम संचालन गर्ने ।
- बाल आहार तथा पोषिलो आहार विकास गरी प्रचार प्रसार गर्ने ।
- न्यून उपभोग एवं अल्प प्रचलनमा रहेका कृषि तथा वनजन्य खाद्य वस्तुहरुको पौष्टिक तत्व पहिचान तथा परिकार विकास गरी प्रचार प्रसार गर्ने ।

संगठन संरचना

यस विभाग मातहत निम्न संरचनाहरु कार्यान्वयनस्तरमा रहेका छन् ।

- केन्द्र/काठमाडौं विभाग
  - विभाग मातहत
    - खाद्य गुण नियन्त्रण महाशाखा – १
      (मातहत त्रि.वि.भन्सार निरीक्षण इकाई)
    - खाद्य प्रविधि विकास तथा तालिम महाशाखा – १
    - केन्द्रीय खाद्य प्रयोगशाला – १
    - राष्ट्रिय पोषण कार्यक्रम – १
    - क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय – ५
      (विराटनगर, हेटौडा, भैरहवा, नेपालगञ्ज, धनगढी)
    - एस. पि. एस. इन्क्वायरी – १
    - स्याउ प्रशोधन केन्द्र, जुम्ला – १
    - खाद्य क्वारेन्टाइन प्रयोगशाला – ४
      (कांकडभित्ता, तातोपानी, बीरगञ्ज, महेन्द्रनगर)

  - क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय – ५ मातहत निम्नानुसार जिल्ला खाद्य निरीक्षण इकाईहरु कार्यरत रहेका छन् :
    - (झापा, सुनसरी, सप्तरी, सिराह, उदयपुर, धनुषा, महोत्तरी, सर्लाही, चितवन, पर्सा, रौतहट, तनहुं, कपिलवस्तु, नवलपरासी, कास्की, दांग, बर्दिया, सुर्खेत र कन्चनपुर – १९)

दरवन्दी संरचना

यस विभाग र अन्तरगतका कार्यालयहरुमा खाद्य पोषण तथा गुण नियन्त्रण, केमिष्ट्री, बोटानी र अन्य सेवा समुहहरु गरी जम्मा २३७ जना कर्मचारीहरुको दरवन्दी रहेको छ ।

बार्षिक प्रगति प्रतिवेदन

(२०७३/७४)

१. खाद्य स्वच्छता तथा गुण नियन्त्रण कार्यक्रम :

यस विभागले आ.व. २०७३/७४ मा खाद्य स्वच्छता तथा गुण नियन्त्रण कार्यक्रम अन्तर्गत खाद्य स्वच्छता र गुणस्तर नियमन, स्तर निर्धारण, उद्योग तथा होटल, रेष्टुरेण्ट एवं मिठाई पसलहरुको निरीक्षण, उद्योग अनुज्ञापत्रहरुको जारी तथा नविकरण लगायत उपभोक्ता सूसुचित कार्यक्रम तर्फ निम्नानुसारका कार्यहरु सम्पन्न गरेको छ ।

१.१ बजार निरीक्षण तथा नमूना संकलन कार्यक्रम :

यस अवधिमा खाद्य गुण नियन्त्रण महाशाखा (केन्द्र) तथा क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालयहरु-५ समेतबाट स्थानिय बजार, सुपरमार्केट तथा खाद्य उद्योगहरुको निरीक्षण/अनुगमन गरी खाद्य तथा दानाको २८६५ नमूनाहरु संकलन गरिएको थियो । जस मध्ये ३६५ वटा नमूनाहरु (१२.७ %) न्यूनस्तरका र दूषित भेटिएकोमा न्यून गुणस्तर तथा दूषित खाद्य तथा दाना उत्पादन/विक्री वितरण गर्ने २६३ व्यवसायीहरुलाई अभियोग सहित कानूनी कारवाहीको लागि मुद्दा चलाईयो । बजार निरीक्षण तथा नमूना संकलनको संख्यात्मक प्रगति विवरण तालिका १ अनुसार रहेको छ ।

तालिका १ : बजार निरीक्षण/नमूना संकलन तथा मुद्दा दायरीको विवरण

सि.नं	कार्यालय	नमूना संकलन संख्या	प्रतिकुल नमुना मिसावट/न्यूनगुणस्तर/दुषित	प्रतिशत	मुद्दा दायरी
१.	खाद्य गुण नियन्त्रण महाशाखा, काठमाण्डौ	५०३	१२३	२४.५	६५
२.	क्षेत्रीय कार्यालय,	६०३	६०	९.९५	५७

	विराटनगर				
३	क्षेत्रीय कार्यालय, हेटौडा	६११	६५	१०.६	४३
४	क्षेत्रीय कार्यालय, भैरहवा	३६८	४८	१३	५३
५	क्षेत्रीय कार्यालय, नेपालगंज	४५०	३३	७.३	११
६	क्षेत्रीय कार्यालय, धनगढी	३००	३६	१२	३४
७	स्याउ प्रशोधन केन्द्र, जुम्ला	३०	०	०	०
जम्मा		**२८६५**	**३६५**	**१२.७**	**२६३**

१.२ उद्योग, होटल / रेष्टुरेण्ट तथा मिठाई पसलहरुको निरीक्षण कार्यक्रमः

यस अवधिमा खाद्य गुण नियन्त्रण महाशाखा (केन्द्र) तथा क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय - ५ बाट समेत उत्पादन स्थल तथा खाद्य वस्तुहरुको स्वच्छता गुणस्तरलाई लक्षित गरी १३७१ पटक उद्योग निरीक्षण र २५४५ पटक होटल, रेष्टुरेन्ट तथा मिठाई पसलहरुको निरीक्षण अनुगमन गरेको थियो ।

१.३ खाद्य उद्योग अनुज्ञापत्रको व्यवस्था :

यस विभागले खाद्य उद्योगहरुको स्थापनार्थ सुरु सिफारिस गर्ने , खाद्य तथा दाना उद्योगहरुको अनुज्ञापत्रहरुको सालबसाली नविकरण गर्ने र नयां उद्योगहरुको लागि अनुज्ञापत्र जारी गर्ने कार्य गर्दै आएको छ । यस अवधिमा विभागले ५१७ वटा नयां खाद्य उद्योगहरुलाई अनुज्ञापत्र जारी तथा १५१४ वटा खाद्य तथा दाना उद्योगहरुको अनुज्ञापत्र नविकरण गरेको छ । यसको विवरण तालिका २ अनुसार रहेको छ ।

तालिका २ : उद्योग अनुज्ञापत्र जारी, नविकरण तथा सिफारिस

सि.नं.	कार्यालय	उद्योग अनुज्ञापत्र			
		नविकरण	जारी	सिफारिस	जम्मा
१.	खाद्य गुण नियन्त्रण महाशाखा, काठमाण्डौ	४५८	११८	३२७	९०३
२.	क्षेत्रीय कार्यालय, विराटनगर	२८७	८४	२६६	६३७
३	क्षेत्रीय कार्यालय, हेटौडा	२६४	१३४	१५०	५४८
४	क्षेत्रीय कार्यालय, भैरहवा	१९६	८५	२२६	५०७
५	क्षेत्रीय कार्यालय, नेपालगंज	१८१	४८	९३	३२२
६	क्षेत्रीय कार्यालय, धनगढी	१२८	४८	५१	२२७
जम्मा		**१५१४**	**५१७**	**१११३**	**३१४४**

१.४ खाद्य वस्तुहरुको आयात/निर्यात अनुमति तथा प्रमाणिकरण व्यवस्थाः

यस विभागद्वारा आ.व. २०७३/७४ मा विभिन्न उद्योग तथा फर्महरुको निवेदन स्वीकृत गरी जम्मा २७,४२९ खाद्य तथा दाना पदार्थहरुको नमूना परिक्षण गरी आयात/निर्यात प्रमाणिकरण गरियो ।

१.५ उपभोक्ता जागराण कार्यक्रम

खाद्य स्वच्छता एवं गुणस्तर वारे विभिन्न किसिमका सूचना सामाग्रीहरु तयार गरी पत्रपत्रिका, रेडियो, टेलिभिजन लगायत बुकलेट एवं लिफ्लेटहरुको माध्यमबाट प्रचार प्रसार गरी उपभोक्ता वर्गहरुमा खाद्य स्वच्छता एवं गुणस्तर वारे सचेतना कार्यक्रम ८७६ पटक संचालन गरिएको थियो ।

१.६ निर्देशिका, कार्यविधि तथा उत्पादन मापदण्डहरू

हालसम्म यस विभागबाट बनाइएका तपशिल बमोजिमका निर्देशिका, कार्यविधि तथा उत्पादन मापदण्डहरु मन्त्रालयबाट स्वीकृत भई कार्यान्वयनमा रहेका छन् ।

१. खाद्य पदार्थ आयात/निर्यात, अनुगमन, तथा गुणस्तर प्रमाणीकरण निर्देशिका, २०६३
२. मासुजन्य पदार्थ उत्पादन, प्रशोधन तथा बिक्रि वितरण सम्बन्धि निर्देशिका, २०७४
३. खाद्य पदार्थ आयात निर्यात नियमन निर्देशिका, २०७४
४. खाद्य मेला संचालन कार्यविधि, २०७४
५. महिलाद्वारा संचालित खाद्य प्रशोधन उद्योगहरुलाई प्रदान गरिने अनुदान सम्बन्धि कार्यविधि, २०७४
६. होटेल, रेष्टुरेन्ट लगायतका खाद्य व्यवसायहरुको खाद्य स्वच्छताको आधारमा स्तरिकरण कार्यविधि, २०७४
७. प्रशोधित पिउने पानी उत्पादन मापदण्ड, २०७४

२. प्रयोगशाला विश्लेषण सेवा

२.१ विश्लेषण सेवा

यस अवधिमा केन्द्रीय खाद्य प्रयोगशाला, क्षेत्रीय कार्यलयहरु र खाद्य क्वारेन्टाइन प्रयोगशालाहरुबाट औपचारिक बजार निरीक्षण तथा छड्के जांच, उद्योग निरीक्षण, सर्टिफिकेशन तथा प्रमाणिकरण, गुणस्तर निर्धारण तथा परिमार्जन र उपभोक्ता एवं अन्य सेवाग्राहीको माग अनुसार जम्मा ४१,०३५ नमूनाहरु परिक्षण गरियो । यसको विवरण तालिका ३ अनुसार रहेको छ ।

तालिका ३ : विभागको केन्द्रीय खाद्य प्रयोगशाला र मातहातका कार्यालयबाट परिक्षण भएका नमूना

सि.नं.	कार्यालय	विश्लेषण संख्या
१	केन्द्रीय खाद्य प्रयोगशाला, काठमाडौं	५०४०
२	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, विराटनगर	३४९९
३	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, हेटौंडा	३४८२
४	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, भैरहवा	१४०७४

५	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, नेपालगञ्ज	६२६४
६	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, धनगढी	२३९९
७	स्याउ प्रशोधन केन्द्र, जुम्ला	६०
८	खाद्य क्वारेन्टाइन प्रयोगशाला, कांकडभित्ता	१९३१
९	खाद्य क्वारेन्टाइन प्रयोगशाला, बीरगञ्ज	४०९६
१०	खाद्य क्वारेन्टाइन प्रयोगशाला, महेन्द्रनगर	१९०
११	खाद्य क्वारेन्टाइन प्रयोगशाला, तातोपानी	०
	जम्मा :	***४१,०३५***

यी मध्ये ६,२१७ नमूना संख्याहरु खाद्य वस्तुहरुको आयात/निर्यात क्रममा खाद्य क्वारेन्टाइन प्रयोगशालाहरुबाट भएको र ३४,८१८ नमूना संख्याहरु केन्द्रीय खाद्य प्रयोगशाला तथा क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालयहरुबाट परिक्षण भएको थियो ।

३. खाद्य प्रविधि विकास तथा तालिम महाशाखा

यस आर्थिक बर्ष २०७३/७४ मा खाद्य प्रविधि विकास तथा तालिम महाशाखा लगायत ५ वटै क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालयहरुले निम्नानुसारको कार्य सम्पादन गरेको छ ।

- प्रविधि विकास तथा ट्रायल परिक्षण अध्ययन
- अध्ययन तथा अनुसन्धान
- खाद्य प्रशोधन क्षमता विकास तालिम
- परामर्श सेवा

३.१ प्रविधि विकास तथा ट्रायल परिक्षण अध्ययन

यस आर्थिक बर्ष २०७३/७४ मा खाद्य प्रविधि विकास तथा तालिम महाशाखा लगायत ५ वटै क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालयहरुले निम्नानुसारका प्रविधि विकास तथा ट्रायल परिक्षण अध्ययन गरेको छ ।

१. अकबरे खुर्सानीको संरक्षण गर्ने तरिकाबाट उपभोग्य अवधिमा पर्ने असर ।
२. रुख कटहरबाट बनाउन सकिने विभिन्न परिकारहरुको गुणस्तर अध्ययन ।
३. किवी फलबाट बनाउन सकिने विभिन्न परिकारहरुको गुणस्तर अध्ययन ।
४. ईलाम जिल्लामा पाईने दुधमा आधारित कन्फेक्सनरीको उपभोग्य अवधिको अध्ययन ।
५. नेपालमा पाईने च्युराको भौतिक/रासायनिक अध्ययन ।
६. विभिन्न प्रकारका ताजा माछाको बोटलिङ्ग सम्बन्धी अध्ययन ।
७. विभिन्न किसिमका चामलमा अमाईलोजको मात्रा अध्ययन ।
८. अदुवामा आधारित विभिन्न परिकारहरुको अध्ययन ।
९. साना तथा सुक्ष्म स्तरको लप्सी प्रशोधन उद्योगहरुको प्रशोधन तथा स्वच्छता स्थितिको सर्वेक्षण ।
१०. लसुन पेष्टको उत्पादन तथा गुणस्तर अध्ययन ।
११. फर्सी क्यान्डीको उत्पादन तथा गुणस्तर अध्ययन ।
१२. किवी फलको पेय पदार्थमा इस्टाब्लाईजरले क्लाउड स्टाबीलिटिमा पार्ने असर ।
१३. भटमास-तिलको धुले अचार उत्पादन, गुणस्तर परिक्षण र उपभोग्य अवधि सम्बन्धि अध्ययन ।
१४. भुइँ स्याउ जामको उत्पादन तथा गुणस्तर अध्ययन ।
१५. मेल वाइनको उत्पादान तथा गुणस्तर अध्ययन ।
१६. तामा फ्लेवरको क्रेकर उत्पादन तथा गुणस्तर अध्ययन ।
१७. हाइड्रोक्लोराइड आलु चिप्स्मा कोटिङ्ग गर्दा हुने चिल्लो पदार्थको मात्रामा असर ।
१८. चिराइतो मिश्रित पाउरोटी उत्पादन तथा गुणस्तर अध्ययन ।
१९. विभिन्न पूर्व-उपचारद्वारा सुकाईएको प्याजको रिंग उत्पादन ।
२०. टोमेटो क्यारामेल क्यान्डीको उत्पादन तथा सोको प्लेन क्यारामेलसंग तुलनात्मक अध्ययन ।
२१. भेनिला फ्लेवर छुर्पी उत्पादन तथा गुणस्तर अध्ययन ।
२२. चकलेट इनरोब्ड तिलको लड्डु उत्पादन सम्बन्धि अध्ययन ।
२३. चकलेट फ्लेवर नरिवलको दुध उत्पादन तथा गुणस्तर अध्ययन ।

२४. नन-अल्कोहलिक मिलेट माल्ट पेय पदार्थको उत्पादन तथा गुणस्तर अध्ययन ।

२५. सोफ र मेथी गेडाको क्रूड मिथानोल एक्सट्राक्टको एडभान्स ग्ल्याईकेसन इन्ड प्रोडक्टको इनहिबीटरी क्रियाकलाप ।

२६. सोफ र मेथी गेडाको क्रूड मिथानोल एक्सट्राक्टको प्रशोधित तेलको स्टाबिलिटिमा असर सम्बन्धी अध्ययन ।

२७. रोहु माछा फिलेटको साल्टिङ्ग र सुकाउने प्रबिधि सम्बन्धि अध्ययन ।

२८. परम्परागत तरिकाबाट रबड्डीको उत्पादन तथा गुणस्तर अध्ययन ।

२९. अदुवा क्यान्डी उत्पादनमा बाँकी रहने सिरप द्वारा हार्ड बोइल्ड क्यान्डी उत्पादन सम्बन्धि अध्ययन ।

३०. आँपको पाल्प मिश्रित भटमासको दुध उत्पादन सम्बन्धि अध्ययन ।

३१. नेपालका विभिन्न स्थानबाट संकलित अमलाबाट तयार गरिएको क्यान्डीको अर्गानोलेप्टिक गुणस्तर परिक्षण ।*

३२. दांग उपत्यकामा रहेका होटलहरुको स्वच्छता सर्वेक्षण ।*

३३. नेपालगन्ज उप-महानगरपालिकामा रहेका पानि उद्योगको गुणस्तर सर्वेक्षण ।*

३४. कम्पोजिट पाउरोटी उत्पादन तथा गुणस्तर अध्ययन ।*

३५. कम्पोजिट कुकिज उत्पादन तथा गुणस्तर अध्ययन ।*

३६. कम्पोजिट केक उत्पादन तथा गुणस्तर अध्ययन ।*

३७. कम्पोजिट चाउचाउ उत्पादन तथा गुणस्तर अध्ययन ।*

३८. कम्पोजिट डोनट उत्पादन तथा गुणस्तर अध्ययन ।*

३९. कम्पोजिट सेलरोटी उत्पादन तथा गुणस्तर अध्ययन ।*

नोटः * ट्रायल सारांश प्राप्त नभएको ।

माथि उल्लेखित ट्रायल परिक्षण अध्यनहरुको सारांश निम्न अनुसार रहेको छ:

१. अकबरे खुर्सानीको संरक्षण गर्ने तरिकाबाट उपभोग्य अबधिमा पर्ने असर

Akabare, a round chilly (*Capsicum annuum var cerasiforme L.*) was preserved in different dip solutions (mustard oil: B, 3% acetic acid solution: C, 5% acetic acid: D, natural apple cider vinegar: E, 10% brine: F and a 3% brine solution with 3% acetic acid: G) to study their effects on its sensory properties, especially taste and flavor. Ripe *Akabare* chillies were brought from the market, washed, drained and filled into clean plastic bottles, which were then filled with the aforementioned dip solutions. A control contained boiled and cooled water as filler: A. These bottles of *Akabare* were stored at ambient temperature (22±3 ^{o}C) and the visual changes noted until they go bad. The control, A spoilt on day 4 whereas the samples D and F showed mold growth at the surface after 1 month. The *Akabare* pods being lighter than dip solutions floated to the surface which in turn were exposed to the environmental air leading to molding. The other samples B, C and G kept well beyond 5 months. From sensorial aspect, the *Akabare* dipped in mustard oil were not as hot as the other samples. By nature, capsaicin, the active component responsible for heat, found in chillies being oil soluble must have been extracted into the oil leaving the *Akabare* less hot. Acetic acid though imparted its acetic odor did not affect the heat of the *Akabare.*

२. रुख कटहरबाट बनाउन सकिने विभिन्न परिकारहरुको गुणस्तर अध्ययन

Diverse value added products were made from almost all parts of Jack fruit (avrils: edible flesh; tendril: rags and seeds) except the outer rind and the middle core. Products like Jack fruit leather, osmotically dehydrated Jack fruit flesh, tendril pickle, seed candy and wine were developed from Jack fruit and their quality were assessed. Osmotic dehydration of fruit avrils was done by dipping the avrils in a syrup of different strengths (35 °Brix, 45 °Brix and 60° Brix) overnight at ambient temperature,

drained, washed and dried at 50 °C in a mechanical dryer. On the basis of sensory parameters, osmotically dried avrils using a syrup of 45 °Brix was considered best in terms of colour, texture and taste. Potassium metabisulfite (KMS) treatment gave natural yellowish color while control was found to be unacceptable due to its brown color appeared while drying. Seed candy was also prepared as puffed nuts but its shelf life seems too short due to inappropriate packaging. Its shelf life can be increase in vacuum packaging. Pickles prepared from tendrils were also acceptable in quality in terms of its taste as compared to other pickles.

High sugar content of the Jack fruits juice makes the juice as potential substrate for wine production. Three samples S1, S2 and S3 of wine were prepared. Alcohol content of Sample S1, S2 and S3 was found to be 13.372, 8.812 and 9.954% after two weeks of fermentation whose initial sugar concentration of fruits was 14 °Brix, 6 °Brix and 10 °Brix respectively, which were ameliorated with sugar to a final concentration of 23 °Brix. At the end of fermentation sugar concentration was 8 °Brix of all sample. Pectolytic enzyme (1 g/hL) was added to the samples. In sample S1, the enzyme was added along with yeast while in S2 and S3 enzyme was added before fermentation and allowed to stand overnight before addition of wine yeast. S1 was clearer than S2 and S3. All the jackfruit wines obtained were clear yellow in color and had strong jackfruit aroma. Using most of the parts of a jack fruit for product development can lead to product diversification as well as reduce the amount of waste produced by jack fruit processing unit.

३. किवी फलबाट बनाउन सकिने विभिन्न परिकारहरुको गुणस्तर अध्ययन

The present trial study highlighted the diversification of different products from Kiwi fruits by applying various technological processes. Products such as jam, fruit leather, osmotically dehydrated slices, whole candy, bottled kiwi slices and chunks with considerable shelf life were prepared

successfully. Osmotically dehydrated kiwi slices contained most of its original properties in terms of color, flavor and taste. Kiwi Candy prepared by hardening in calcium chloride (0.5% $CaCl_2$ for 30 minutes) and cooked at 45 °Brix sugar syrup at low temperature of 40 °C produced the best in terms of quality. Temperature above 45 °C led to changes in its natural green color to olive green. Kiwi jam was prepared by adding sugar and Kiwi fruits in ratio 1:0.8 at the same time mixed jam of Apple and Kiwi fruits and sugar was also prepared by mixing 1:1:2. Kiwi to sugar ratio of 1:0.8 produced jam with attractive green color. Kiwi Fruit Leather was prepared as such and also by adding 10% sugar to fruit pulp. Sugar added fruit Leather was good in terms of its appearance and taste than without sugar. Bottling of Kiwi slices was done in a syrup of 20 °Brix and 0.2% citric acid and pressure cooked for 30 minute in a normal pressure cooker. Kiwi pieces were candied until the final T.S.S. reached 50 °Brix, drained and packed in a fresh syrup having the same sugar concentration with an addition of 250 ppm of sulfur dioxide, packed into clean glass containers. These Kiwi fruit preserves were stored for 3 months and later used in fruit cakes. The texture of Kiwi fruits was best retained in Kiwi preserves than the fresh fruits while making Fruit cake.

४. ईलाम जिल्लामा पाईने दुधमा आधारित कन्फेक्सनरीको उपभोग्य अबधिको अध्ययन

Milk Lollipop and *Bombaisan* is a heat desiccated indigenous dairy product popular in Ilam, Eastern part of Nepal. They were prepared from *Khuwa*, a concentrated milk solid mass prepared by heating milk at very low heat with scraping and vigorous mixing. Khuwa:Sugar at the ratio of 5:2 are then cooked with continuous stirring until a typical brown non-sticky mass was formed. The mass is then molded into sticks (lollipop) and bars (*Bombaisan*), allowed to cool and wrapped in different packaging materials. Nutritional Analysis of *Milk lollipop* and

Bombaisan showed almost same in crude fat (7.47%), ash (2.76%), carbohydrate (65.23%), protein (13.50%) and moisture content (11.04%). Samples wrapped in different packaging materials were stored in desiccators containing saturated solution (85% RH) of potassium chloride at room temperature (25±2 °C). Shelf life study of samples was done by taking weight at regular interval based on moisture uptake by sample through different packaging materials (original wraps, plastic laminate, PP and aluminium foil laminate) for four months. The cut off value for shelf life was set at an additional 5% weight gain by the samples, i.e. approximately 16% moisture content (reference % m. c. of *barfi/peda* ~ 20%). Samples in original wrappers gained an additional of 5% weight within 10 days while only 2% was gained by the other samples in three different packaging materials after four months. Thus, by simply changing the packaging materials, the shelf life of *milk lollipop* and *Bombaisan* could be extended to a period of 4 months based on moisture uptake.

५. नेपालमा पाईने च्युराको भौतिक/रासायनिक अध्ययन

In this study different representative samples of Beaten rice (*Cheura*) were collected from the *Cheura* Industries of Nepal. Chitwan, Nawalparasi and Kathmandu are considered to be the main pocket areas for *Cheura* production. In Kathmandu valley it is usually made from *Taichung paddy* where as in Terai belt it prepare from *Makwanpure* and *Radha- 4* paddy varieties. Total 20 roasted and non-roasted *Cheura* samples were collected and then analyzed for its physiochemical properties and for shelf life study. The result revealed an initial moisture content of 3.59% and 12.6 % and an alcoholic acidity of 0.031% and 0.11% in roasted and non-roasted *cheura* respectively. Similarly, to account the shelf life of the *Cheura,* moisture content and alcoholic acidity were measured for a duration of three months. An increase in alcoholic acidity, 0.07% and 0.36% and moisture content of 5.9% and 14.63% were observed for roasted and non-roasted *Cheura* after 3 months. Since color is important attribute

of food, which influences the consumer choice; it was determined instrumentally, using a "MINOLTA" Chroma meter CR 400. No significant difference was noted in the whiteness between the different *Cheura* samples. Mycotoxin (total aflatoxin) was analyzed by ELISA method and found to be in 1 ppb in all *Cheura* samples. Based on these observations, non-roasted *cheura* is more prone to faster moisture uptake and an increase in alcoholic acidity during storage, leading to a shorter shelf life.

६. विभिन्न प्रकारका ताजा माछाको बोटलिङ्ग सम्बन्धी अध्ययन

Two varieties of fishes, Rainbow trout (*Oncorhynchus mykiss*) and Rohu (*Labeo rohita*) were bottled in mason jars using three different fillers (10% brine, sunflower oil & tomato sauce: 15 ^{o}Brix). The fishes were collected fresh from Godavari fish farm, beheaded, degutted and filleted. The fillets were dry salted overnight using 10% by weight. They were washed, surface dried at 60 ^{o}C and filled into clean sterile mason jars. The remaining space was packed with fillers and the jars lidded. The bottles were then heated at 130 ^{o}C for 30 minutes under 15 psi. A control was packed with potable water. These bottled samples didn't show any bulging for 4 months when stored at ambient room temperature (24±3 ^{o}C). Rohu fish was considered better for bottling as its muscles were much resilient than Rainbow trout and didn't show muscle rupture during dry salting.

७. विभिन्न किसिमका चामलमा अमाईलोजको मात्रा अध्ययन

Six varieties of rice available in Nepal were analyzed for their amylose content. Black rice and mansuli (Kathmandu), *Jamrume* (Nuwakot), *Jethobudho* (Kaski), Secret (Achham), Jumli marsi (Jumla) were collected. Amylose content in the rice samples were done according to the protocol of ISO 6647, 2007. High amylose content was found to be in Secret variety (27±1.4%), intermediate in Jethobudho (22.5±0.5%) and Mansuli (21.7±0.8%) and low in Black rice (17±0.7%), Jumli marsi

(16.25±1.40.85%) and Jamrume (15.5±0.75%). Based on this outcome, recommendations can be made for the use of different rice varieties for different dietary and processing purpose.

८. अदुवामा आधारित विभिन्न परिकारहरुको अध्ययन

A study was conducted to develop ginger (*Zingiber officinale*) based products in order to increase the utilization of fresh ginger. Different products such as honey-ginger syrup, honey infused ginger shreds in honey and fermented and unfermented ginger based RTS beverages. In most of the products, honey was used as an alternate sweetener for higher value addition to the products.

- **Honey-ginger (HG) syrup:** The syrup was developed by mixing ginger juice (°Brix = 4, T.A. (c. ā) = 1.12%) with honey (°Brix = 80, T.A.= 0.1% as lactic acid) at different ratios in order to achieve a final °Brix of 65, 68 and 70 and citric acid was added to the final product to achieve an acidity of 0.5%. The HG syrup was packed in laminate pouches at a unit volume of 25 mL and stored at ambient temperature for sensory testing. 125 mL water was added to the HG syrup prior to consumption. The product having 68 °Brix was found to be the best from sensory perspective. The HG syrup had a_w value of 0.74 and was stable at ambient temperature for 4 months.
- **Honey infused ginger shreds in honey:** Ginger shreds were dipped in fresh honey at the ratio of H:G in 70:30, 80:20 and 90:10. Change in °Brix of honey was noted on a daily basis. The product obtained from the use of dipping ratio of 90:10 was found to be stable and achieved a final value of 69 °Brix and a water activity value (a_w) of 0.733 while the other combinations showed fermentation after 2 weeks of storage at ambient temperature. Thus, to prevent the products from undergoing fermentation for lower combination ratios the ginger shreds were drained and re-dipped in fresh honey for several times until soluble solids content of honey remained constant. Finally, the ginger

shreds were dipped into a fresh honey having 80 °Brix for stability. This product was stable at ambient temperature for 4 months and no crystallization of honey was noted during storage.

- **Ginger based RTS:** A ready to serve beverage was developed based on the concept of ginger beer to determine its acceptability. The ginger juice having a total soluble solids (T.S.S.) contents of 4 °Brix was chaptalized with either sugar or honey (80 °Brix) to a final T.S.S. content of 12 °Brix and citric acid to attain a titrable acidity of 0.4%, pitched with either wine yeast *Saccharomyces cerevisiae* or baker's yeast; and allowed to ferment at ambient temperature for 48 hours when the T.S.S. decreased to 5 °Brix. Then it was refrigerated until further use. This fermented beverage was then mixed with freshly prepared unfermented ginger based beverage (Ginger juice = 5%, 7.5% and 10%; final T.S.S. of 12% with either honey or sugar and T.A. of 0.4% with citric acid) at the ratio of 1:3. The beverage was filled into sterile plastic bottles, capped and kept in a refrigerator (~ 4°C). The flavor of the products both fermented and unfermented beverage containing honey was affected by honey and were less favored by panelist as compared to sugar added beverages. Also, the RTS containing fermented juice was favored more by the panelist because of its appealing color (faint peach), appetizing flavor and lingering sweet after-taste. The fermentation process involved in the making of the beverage could have a positive impact in the development of the flavor and the natural carbondioxide to taste. When kept refrigerated, these products retained their color and taste for a month. Longer period of storage led to formation of sediments (ginger remains) at the bottom of the bottles.

९. साना तथा सुक्ष्म स्तरको लप्सी प्रशोधन उद्योगहरुको प्रशोधन तथा स्वच्छता स्थितिको सर्वेक्षण

A survey was designed to have depth insight on real processing and safety status of *lapsi* processing industries in Kathmandu valley. As a first step, questionnaire was developed to ask processor on the present status on overall aspects of *lapsi* processing and on site visit was done for some *lapsi* industries. The questionnaire specifically enquires on raw material used, processing technology used, storage provisions, sanitary facilities and controls, personal hygiene, waste disposals and others. Also, feedback was taken on what they think should be done for improvement in present status.

From the survey it was observed that majority of *lapsi* processing industries collected the raw materials locally in seasons but during the off seasons they used *lapsi* pulp preserved by chemical additives and packaged in plastic bags. However, almost all of the processors were unknown about the regulatory framework on appropriate dosage of additives to be used and processors were found to use quantity of additives on their own rationale. Next to that, it was found that processors are confronting hygiene and safety problems on pulping and drying step. Many processors still used manual pulping while few used pulper machine. Also, adequate sanitary control was not practiced by processors during processing. Further, sun drying method was found to be practiced by all processors without proper provision for maintaining hygienic conditions.

It was observed from this study that *lapsi* processors need to improve their knowledge on improved processing, packaging and storage technology along with proper use of additives for improvement in their existing conditions. So, from this study it can be inferred that proper training course should be developed and provided to them in such a way to address their necessity.

१०. लसुन पेष्टको उत्पादन तथा गुणस्तर अध्ययन

Garlic (*Allium sativum*) is widely used around the world for its pungent flavor as a seasoning or condiment. Garlic cloves are used for consumption (raw or cooked) or for medicinal purposes. Garlic paste is one of garlic product, which may retain its fresh flavor and is ready to use in cooking. Color change of paste during storage is one of major problem. Present study was conducted to observe effect of different treatment on visual acceptability in terms of color of garlic paste. Garlic paste was prepared with various treatments (heat, KMS, citric acid, benzoic acid, guar gum). The result showed acceptability of treated garlic paste in terms of color than without treatment upto one month of storage.

११. फर्सी क्यान्डीको उत्पादन तथा गुणस्तर अध्ययन

Pumpkin is an economic vegetable that is affordable by almost every Nepalese. In Nepal its use has been merely confined to as a general vegetable. Processing like candying is one of alternate method to make product attracting consumers of various age groups. Present study was conducted to prepare by various treatments (blanching, potassium metabisulfite (KMS), ascorbic acid, calcium chloride, sucrose, glucose syrup and dextrose) and select superior pumpkin candy based on sensory quality. *There was no significance difference in terms of color. From sensory evaluation the candy prepared with 0.6% $CaCl_2$ in blanching water treatment) was found to be superior than other treatments.*

१२. किवी फलको पेय पदार्थमा इस्टाब्लाईजरले क्लाउड स्टाबीलिटिमा पार्ने असर

Cloud loss of kiwifruit RTS (ready to serve) beverage severely limits its marketability. *Therefore*, this work attempts to study the effect of hydrocolloid stabilizers (xanthan gum, pectin, mixture of xanthan gum and pectin) and thermal treatment on cloud stability of kiwifruit RTS beverage. For this, kiwifruit RTS beverages were prepared by using these hydrocolloid stabilizers and thermal treatment, stored for 2 months and analyzed for cloud stability, colour, flavour, body and overall acceptability

by sensory evaluation. Sensory analysis showed that mixture of xanthan gum and pectin prevented cloud loss while pectin alone and thermal treatment were not satisfactory. The result suggests that use of stabilizers can enhance marketability of kiwifruit RTS beverage.

१३. भटमास-तिलको धुले अचार उत्पादन, गुणस्तर परिक्षण र उपभोग्य अबधि सम्बन्धि अध्ययन

Dhule achar, an indigenous product of Nepal, was prepared using soybean and sesame as major raw materials. The present study was conducted to prepare soybean-sesame *Dhule achar* to evaluate its quality. Raw materials like soybean, sesame, *Chuk amilo* (Acid), coriander, cumin, garlic, chili, ginger and salt, brought from local market of Dharan and Biratnagar were used for the preparation of *Dhule achar*. *Dhule achar* of five different compositions were prepared i.e. a) soybean : sesame (100 : 0); b) soybean : sesame (75 : 25); c) soybean : sesame (50 : 50); d) soybean : sesame (25 : 75) and e) soybean : sesame (0: 100) making spices proportion constant. From the sensory evaluation on different attributes (color, taste, flavor, texture and overall acceptance), *Dhule achar* prepared by using equal proportion of soybean : sesame i.e. (50:50), was found to be best as compared to other product made from different ratio.

१४. भुइँ स्याउ जामको उत्पादन तथा गुणस्तर अध्ययन

Ground apple jam were prepared by using 45:55, 50:50, 55:50 pulp: sugar ratio and 0.5%, 0.75%, 1% respectively. The jam prepared from 50:50 Sugar: pulp ratio, 1% citric acid and 1% pectin was found to be the best by sensory evaluation. The best score ground apple jam was analysed and its moisture, TSS, titrable acidity, reducing sugar and pH were found to be 24.5%, 68.5^{0}Bx, 0.45%, 22.05%, and 2.5 respectively. It was found that TSS, titrable acidity and reducing sugar were 69 ^{o}Bx; 69.5 ^{o}Bx and 70 ^{o}Bx, 0.56%; 0.59% and 0.65% and 24.25%; 27.13% and 29.76% after 15, 30 and 45 days from the storage under ambient conditions respectively.

१५. मेल वाइनको उत्पादान तथा गुणस्तर अध्ययन

Mehel wine was prepared from meheljuice by using wine yeast (*Saccharomyces cerevisiae*). Effects of pasteurization and sulphitation in the mehelwine with eight different variation such asA(17^{o}BX at pH4), B(21^{o}BX at pH4), C(17^{o}BX at pH4), D(21^{o}BX at pH4), E(17^{o}BX at pH5), F(21^{o}BX at pH5), G(17^{o}BX at pH 5) and H(21^{o}BX at pH 5)were studied. Sample A, B, E, F was prepared by pasteurization (72^{o}C for 15 sec) and C, D, G, H were prepared by Sulphitation (70 ppm) respectively and thus from score obtained from the sensory evaluation, the product prepared by pasteurization method obtained highest mean score and is considered to be the best product among other formulation. The average PH, TSS, reducing sugar, acidity and alcohol content (v/v) of the best final product were found to be 4.2, 11^{o}BX, 0.14%, 0.385%,5.12% respectively.

१६. तामा फ्लेवरको क्रेकर उत्पादन तथा गुणस्तर अध्ययन

Crackers are one of the widely accepted snack product all over the world. They are widely available in various flavors but the most widely used is that of prawn (shell fish). Tama (*Mesu*) is the salted lactic acid fermented young bamboo shoot product consumed in bamboo growing region of Nepal. Crackers is produced by mixing flavouring item , food starch, salt, sugar and monosodium glutamate (MSG). Other ingredients may be added depending on the producer choice. Tama obtained from local market was ground into paste and cooked under simmering condition for half an hour to prepare tama stock. 500 g of corn starch was added to 2 liters of tama stock. Different concentration of salt, MSG and baking powder were added to the mix and spread on plastic sheet for drying till moisture content reached 5%. Crackers produced from 0.5% salt, 0.3% MSG and 0.5% baking powder was found to be significantly acceptable as determined by sensory evaluation. Further, crackers dried in solar drier was more acceptable than those dried in hot air oven.

१७. **हाइड्रोक्लोराइड आलु चिप्स्मा कोटिङ्ग गर्दा हुने चिल्लो पदार्थको मात्रामा असर**

The use of coating agents is one effective way to reduce oil absorption in fried products. Reducing the fat content of fried foods by application of coatings is an alternative solution to comply with both health concerns and consumer preferences. The aim of this study was to analyze the effect of hydrocolloids as coating agent on the quantity of oil uptake of potato chips. The effect of the coating composition showed that the minimum fat content was related to blanched samples of 1% carboxymethyl cellulose, 0.5% guar gum, and 1.5% gum Arabic with 21.49, 22.45 and 26.18%, respectively, and the highest of fat content was related to blank sample (non-coated, unblanched), 0.5% carboxymethyl cellulose, 1.5% guar gum and 0.5% gum Arabic with 48.5, 34.88 and 47.23, 48.12% of oil content, respectively ($p<0.05$).

१८. **चिराइतो मिश्रित पाउरोटी उत्पादन तथा गुणस्तर अध्ययन**

The present work is focused on to develop a white bread incorporated with *chiraito* (*Swertia chirayita*) powder which has medicinal value. Five samples of white bread namely A, B, C, D, and E was formulated with *chiraito* content of 0.10, 0.20, 0.30, 0.40 and 0.00% respectively, while other ingredients remaining the same for all bread samples. The sensory analysis report revealed that sample-A containing 0.10% *chiraito* in the bread was best among other samples. However, sample-E (controlled sample) containing 0% *chiraito* was a reference sample that scored the highest sensory mark. Similarly, Sample-C containing 0.30% *chiraito* was found to be least accepted while carrying out sensory test.

१९. **विभिन्न पूर्व-उपचारद्वारा सुकाईएको प्याजको रिंग उत्पादन**

The common onion (Allium cepa L.) is a vegetable of major commercial importance throughout the world. A large quantity of onions is used as fresh however; the surplus quantity in the market can be processed by dehydration. Dehydration of onion is one of the most economical and feasible methods of

preservation of surplus produce. This study aims to visualize the effects of various pretreatments prior to drying and different drying conditions on the quality characteristics of the dehydrated onions. Onions are sliced at angles to the vertical axis with a sharp home slicer, to obtain slices of 4-5mm thickness and are dipped in different treatment solutions (0.25% KMS, 2% NaCl, 0.25% KMS + 2% NaCl) for 5 minutes before drying at different temperatures (50°C, 60°C and 70°C). Higher retention of vitamin-C and improved rehydration ration was found in dehydrated rings pretreated with 0.25%KMS+2% NaCl solution for 5 min prior to drying. Onion rings dipped in 0.25%KMS+2% NaCl solution and dried at temperature 50°C and 60°C were insignificant in terms of vitamin-C retention. Retention of vitamin C was a little greater in sample dried at temperature 50°C. Effect of drying temperature had no significant effect in terms of rehydration characteristics.

२०. टोमेटो क्यारामेल क्यान्डीको उत्पादन तथा सोको प्लेन क्यारामेलसंग तुलनात्मक अध्ययन

Seasonal flux of low cost tomatoes can be incorporated in caramel to enhance the nutritional value of the product. The main objective was to optimize the concentration of tomato juice to obtain a final product similar to plain caramel and perform sensorial comparison between the optimized product and plain caramel prepared from the similar recipe just excluding the tomato juice ingredient.

Tomato caramel prepared from 44% by weight tomato juice (5°Bx) was selected having highest sensory score in terms of color, flavor, texture and overall acceptance. No significant different was found between the tomato caramel and plain caramels as shown by t-test of mean sensory scores between them. Similarly, plain caramel was prepared using the same formulation but excluding tomato juice. Both caramels were sent to sensory analysis and compared in terms of color, flavor, texture and overall acceptance.

२१. भेनिला फ्लेवर छुर्पी उत्पादन तथा गुणस्तर अध्ययन

Chhurpi is a traditional Cheese, mainly produced in the Himalayan region of Nepal, Sikkim, Darjeeling, Bhutan and Tibet. *Chhurpi* is a popular cottage cheese prepared by the Himalayan native people by following their traditional knowledge and they preserve this proteinaceous food for the winter season for the preparation of healthy food and sell in the mountain and terai region of the country. This study was aimed to prepare vanilla flavored hard *chhurpi* which make it better competitor in the market. Different concentration of vanilla flavor were used to prepare the *chhurpi*. To make hard *chhurpi* the fermented solid mass of buttermilk was separated and kept in a soft clothes or jute bag. Then the bag was kept under pressure in cheese pressure machine. Based on sensory and chemical evaluation, product containing 0.4% vanilla flavor was found to be best. Proximate analysis confirmed that *chhurpi* is very proteinaceous product, long preserved due to low moisture and fat.

२२. चकलेट इनरोब्ड तिलको लड्डु उत्पादन सम्बन्धि अध्ययन

Sesame seeds bought from local market was cleaned manually. The sesame seeds were roasted using conventional process using *kadhai* under low flame till color of seed changed to light red. Dried coconut was grated into small threads. For optimization of mixture of sesame and grated coconut 4 samples having the following proportion of sesame seeds and grated coconut were prepared A (*95% sesame and 5% coconut*), B (*90% sesame and 10% coconut*), C(*85% sesame and 15% coconut*) , D (*80% of sesame and 20 percent of coconut*). From sensory analysis, sample B was found to be of best. For optimization of cooking stage of *Jaggery*, two samples were prepared using constant amount of jaggery and mixture varying cooking stage of jaggery, A (*60 part mixture and 40 part jaggery, cooking stage of jaggery: softball*) and B*(60 part of mixture and 40 part jaggery, cooking stage of jaggery : hardball stage*). Based on sensory score sample A was found to be best. For optimization of amount of

jaggery and mixture (sesame + *coconut*), 4 samples were prepared having the following part of jaggery of total mixture and having cooking stage of jaggery i.e softball constant. A (*amount of jaggery: 20 part of mixture*), B (*amount of jaggery: 30 part of mixture)*, C (*amount of jaggery: 40 part of mixture)* , D(*amount of jaggery : 50 part of mixture*). From sensorical analysis sample D was found to be best. For optimization of enrobing, 2 samples were prepared having enrobing having coating percent of A (2-3%) and (6-7%) was prepared. sample B was found to be best sensorically.

२३. चकलेट फ्लेवर नरिवलको दुध उत्पादन तथा गुणस्तर अध्ययन

Fresh Coconut (*C. nucifera)* bought from local market of *Bhairahawa* was dehulled, peeled, sliced manually optimization for extraction process of coconut milk was carried out. Hot and cold method of extraction was used. in hot method the cubes were blanched in boiling water for 10 min.the average yield was 56.6% for hot method whereas for cold was 53.7%.the fat content of milk obtained was 35% but fat content coconut of coconut was standardized to 10 % using pearsons square method for optimization of cocoa paste cocoa was added to milk in the following rate 1%, 2%, 3%, 4%, 5%.from sensory analysis 5% cocoa paste was found to be best. For optimization of sucrose content five samples having the following composition was prepared 1%, 2%, 3%, 4%, 5% sucrose respectively from sensory analysis coconut milk having 4% sucrose was found to be best.

२४. नन-अल्कोहलिक मिलेट माल्ट पेय पदार्थको उत्पादन तथा गुणस्तर अध्ययन

Finger millet (local variety) was collected, cleaned and steeped in water for 24 hrs, germinated for 36 hrs and kilned in dryer at 50±5^{o} C. The Non-alcoholic finger millet malt drink was prepared after successive mashing, straining, wort boiling and hot filling process which were subjected to chemical analysis. The produced sweet wort was analyzed for its chemical

composition and found to have pH, acidity, total soluble solid, total suspended solid, total solid, crude protein, total reducing sugar and color 6.11, 0.12 % as citric acid, 14.23 ^{o}Brix, 0.24 %, 14.47 %, 0.23 g/100 ml, 11.08 g dextrose/100 g and 11.03 EBC units respectively. The sweet wort was adjusted to TSS 20 ^{o}Brix and acid content was varied with added citric acid in proportion of 0.20, 0.25, 0.30, 0.35 and 0.40 %. The sensory analysis revealed that sample with 0.30% added acid had higher overall sensory score (p<0.05).

२५. **सोफ र मेथी गेडाको क्रूड मिथानोल एक्सट्राक्टको एडभान्स ग्ल्याईकेसन इन्ड प्रोडक्टको इनहिबीटरी क्रियाकलाप**

Advanced glycation end-products (AGEs) are implicated with diabetes related complications, atherosclerosis and aging. Several pharmacological agents such as aminoguanidine have been developed for inhibiting the formation of AGEs. However, their side effects are severely limiting their applicability. This situation calls the need for finding effective and safe agents. In this regard, seeds of fenugreek and fennel, which are claimed traditionally to be antidiabetic and being used in antidiabetic formulation in Ayurveda system of medicine, selected for the study. The dry seeds were powdered and steeped in 80% methanol for 12 h and filtered. The filtered extracts were analysed for total phenol content, DPPH free radical scavenging activities, glyoxal inhibitory activities and AGEs inhibitory activities. The latter two analysis were made on glucose-BSA model.Total phenol content, IC50 concentration for DPPH inhibition, glyoxal content in glucose-BSA model and AGEs inhibitory activity of Fennel seed extract were 76.51 ± 2.93 mg GAE/ g dry extract, 16.09 ± 0.13 µg/mL, 0.12 ± 0.003 mM and 24.21 ± 0.39 % respectively. Similarly, total phenol content, IC50 concentration for DPPH inhibition, glyoxal content in glucose-BSA model and AGEs inhibitory activity of Fenugreek seed extract were 86.05 ± 4. 36 mg GAE/ g dry extract, 14.94 ± 0.11 µg/mL, 0.13 ± 0.007 mM and 15.75 ± 0.68 % respectively.

२६. सोफ र मेथी गेडाको क्रूड मिथानोल एक्सट्राक्टको प्रशोधित तेलको स्टाबिलिटिमा असर सम्बन्धी अध्ययन

The major problem associated with fats and oils is related to its instability in different conditions. Since they are widely used as the chief ingredients in industrial processes such as deep frying and culinary practices, more concern must be given towards the stability.The deterioration or oxidation of fats and oils could develop undesirable flavors and lower the quality of food product it is incorporated in. Therefore, this work attempts to study effect of crude ethanolic extracts of Fennel and Fenugreek seeds on stability of RBD oil during accelerated oxidation storage was carried out. For this dried seeds of Fennel and Fenugreek were powdered and steeped in ethanol for 12 h. RBD oil was divided into three containers where one container was taken as control while in other two containers filtered extracts of Fennel and Fenugreek were added at the rate of 200 ppm and these containers were incubated at 70 °C. Acid value (AV) and peroxide value (PV) of oils in these containers were measured at the intervals of 24 h up to 4 days. Acid values and peroxide values of oil increased with time for all samples.

The total phenol content and antioxidant activities of crude extracts of Fennel and Fenugreek seeds were 74.83 ± 1.42 mg GAE/g dry extract and 22.32 ± 0.17 µg/mL; and 80.05 ± 2.67 mg GAE/g dry extract and 18.19 ± 0.28 µg/mL respectively. Acid value of control oil exceeded the legal limit of 0.5 mg KOH/g after 24 h and reached 1.44 ± 0.025 mg KOH/g on 4^{th} day. The Fenugreek seed extract treated oil and Fennel seed extract treated oil exceeded the legal limit of acid value on second day of storage and reached a value of 0.66 ± 0.005 mg KOH/g and 0.68 ± 0.01 mg KOH/g respectively on 4^{th} day. In case of peroxide value control oil exceeded the legal limit of 10 mequi. peroxy oxygen/kg on second day of storage and reached a value of 39.92 ± 1.62 mequi. peroxy oxygen/kg on 4^{th} day. Similarly, Fenugreek seed extract treated oil and Fennel seed extract treated oil exceeded the legal limit of peroxide value on

third day of storage and reached a value of 21.93 ± 0.45 mequi. peroxy oxygen/kg and 27.57 ± 0.85 mequi. peroxy oxygen/kg respectively on 4th day. The results suggest that stability of RBD oil can be improved by using crude ethanolic extracts of Fenugreek and Fennel seeds.

२७. **रोहु माछा फिलेटको साल्टिङ्ग र सुकाउने प्रबिधि सम्बन्धि अध्ययन**

Dried fish fillets were prepared by combination of dry salting and wet salting then sun drying. The proportion of salt and fillet was maintained at 1: 4 by weight for dry salting and 1: 2 of fish and saturated brine solution by weight for wet salting. Brining was done for 24 hour at room temperature then sun dried. Dried fillets were evaluated by sensory parameters. From the average sensory result it was concluded that overall sensory quality parameter are slight higher for wet salting than dry salting also Water loss is high on dry salting and weight gain high on wet salting.

२८. **परम्परागत तरिकाबाट रबड्डीको उत्पादन तथा गुणस्तर अध्ययन**

Study was conducted to evaluate the chemical and sensory quality of indigenous milk-based product *Rabbadi*. A control sample was made in RFTQCO laboratory by traditional method and other four samples were collected from different places of Nepalgunj viz. *Dhamboji chowk, North Tribhuvan Chowk, South Tribhuvan Chowk* and *Eknaini Chowk.* The concentration of moisture content of *Rabbadi* varied from 50 to 58%. Sensory quality of *rabbadi* was within the acceptable range. The mean sensory score of *Eknaini Chowk* was found to be highest for all the parameters.

२९. **अदुवा क्यान्डी उत्पादनमा बाँकी रहने सिरप द्वारा हार्ड बोइल्ड क्यान्डी उत्पादन सम्बन्धि अध्ययन**

Ginger (*Zingiber officinale)* belongs to the family zingiberaceae consumed worldwide as a spice or condiment for over 2000 years. Ginger candy is a traditionally ready to eat product have great demand in confectionary due to the acceptable sensorial

characteristics. An attempt was made to utilize the by-product sugar syrup obtained from ginger candy making. The leftover syrup obtained from ginger candy making was collected from ginger candy processing plant, Salyan district. Hard boiled candy was made in open pan at 145^0C. The product so obtained was analyzed for moisture content, ash and acidity as ascorbic acid and was found to be 2.31%, 0.11%, 0.16 respectively.

३०. आँपको पाल्प मिश्रित भटमासको दुध उत्पादन सम्बन्धि अध्ययन

The study was conducted to prepare soymilk incorporating mango pulp by using various combinations. Four blends of soymilk and mango pulp were prepared. Each sample was analyzed for chemical analysis and sensory qualities were evaluated by sensory panelist. From the results of chemical analysis, significant difference was in terms of TSS, percentage acidity, pH, fat percentage, ash percentage, total sugar percentage, reducing sugar percentage and ascorbic acid. The data on effects in overall acceptability suggested that the beverage prepared by 1:1 proportion of soya milk and mango pulp was liked by judges as maximum score was recorded for all the sensory parameters as compared to the rest of the combination.

३.२ अध्ययन तथा अनुसन्धान

यस अवधिमा निम्न अनुसारको अध्ययन भएको थियो ।

१. इन्क्याप्सुलेटेड र फ्री यिस्ट प्रयोग गरि वाइन उत्पादन ।
२. धादिङ र चितवनका राजमार्गमा अवस्थित रेस्टुरेन्ट र भोजनालयहरुमा खाद्य पदार्थ नाश सम्बन्धि सर्वेक्षण ।

माथि उल्लेखित अध्ययन तथा अनुसन्धानको सारांश निम्न अनुसार रहेका छन्:

१. इन्क्याप्सुलेटेड र फ्री यिस्ट प्रयोग गरि वाइन उत्पादन

A study was carried out on encapsulation of wine yeast (*Saccharomyces cerevisiae*) and use it for red and white wine making as compared to free yeast. Rehydrated active dry yeast was mixed with 2% sodium alginate solution and cross linked with different molar concentration of CaCl2 solution (0.1, 0.2, 0.3, 0.4 and 0.5M) for 30 minutes and assessed for yeast leakage density. The molar concentration with minimum leakage (0.2M) was used for preparation of encapsulated yeast. Colony count was done for both free yeast and encapsulated yeast so as to equilibrate the rate of yeast pitching for wine fermentation. Thus prepared encapsulated yeast and free yeast was analyzed for colony count (cfu/ml). Physiochemical properties of red and white grapes used for wine making were analyzed and used for wine making with free yeast and encapsulated yeast. Total soluble solids, acidity and pH was found to be 16.5 ^{o}Brix, 0.397 % and 3.92 for white grapes while for red grapes the value were 19.1 ^{o}Brix, 0.635% and 3.2 respectively. Total soluble solids and acidity profile was examined every alternative day for 2 weeks for both red and white wines prepared from free yeast and encapsulated yeast. In both wine there was gradual reduction in TSS while acidity increased for 10 days then gradually decreased. Reduction in TSS was quiet fast for free yeast for first week but in the second week value was nearly equal as for encapsulated yeast. The final TSS of red wine after primary fermentation was 7.11 and 7.23 for free yeast and encapsulated yeast. Likewise, TSS decreased to 6.1 and 6.2 for free and encapsulated yeast. Likewise, final acidity was also nearly equal for free and encapsulated yeast which was in the range of 0.826 and 0.840 %. The alcohol content of red wine was in average 13.22 %

while for white wine it was in average 7.54 %. Also, there was no significant difference in alcohol content with the use of free yeast and encapsulated yeast for both types of wine. However, wine prepared from encapsulated yeast had less turbidity than wine from free yeast. So, from this study it was concluded that encapsulated yeast was equally effective as free yeast with increased clarity of wine.

२. धादिङ र चितवनका राजमार्गमा अबस्थित रेस्टुरेन्ट र भोजनालयहरुमा खाद्य पदार्थ नाश सम्बन्धि सर्वेक्षण

Food waste or food loss is food that is discarded or lost or uneaten. The causes of food waste or loss are numerous, and occur at the stages of production, processing, retailing and consumption. The objective of this study is the identification and quantification of the main causes of food losses in the selected food supply chains i.e. food processing loss and the analysis of the measures to reduce food losses. The surveyor physically followed the product from raw materials to wastage, made direct observations and measurements, and discussed with food processors in sixteen different restaurants along the section of Prithivi highway in Dhading and Chitwan districts. It was found that wastage from plate accounted at the range of 4 to 15 % of rice, dal and vegetables. Maximum loss was observed during preparation (12 - 22%). The food waste incurred in the eateries and restaurants along the highway was similar to that incurred in Kathmandu valley, where wastage from plate accounted for 6-11 % for rice, 3-7 % for dal, 4-8 % for curry and preparation loss of 12- 19 % (DFTQC, 2072/73). Losses were found lower compared to other countries which accounts upto 30- 35%. The good aspect was that the wasted food were fed to pigs.

३.३ खाद्य प्रशोधन तालिम

संभाव्य खाद्य उद्यमी व्यवसायी विकास गरी खाद्य प्रौद्योगिकरणमा टेवा पुऱ्याउने उद्देश्य अनुरुप यस अवधिमा जम्मा ६३५ (३५८ पुरुष र ३१८ महिला) लाई केन्द्र लगायत क्षेत्रीय कार्यालय एवं जुम्लाबाट विभिन्न विभिन्न खाद्य वस्तुहरुको प्रशोधनमा आधारित तालिम दिइयो । खाद्य प्रशोधन तालिमको विवरण तालिका ४ मा प्रस्तुत गरिएको छ ।

तालिका ४: खाद्य प्रशोधन तालिम सम्बन्धी विवरण

सि.नं	कार्यालय	तालिम संख्या	सहभागी संख्या		
			महिला	पुरुष	जम्मा
१	खाद्य प्रविधि विकास तथा तालिम महाशाखा	३	४२	१८	६०
२.	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, विराटनगर	२	३४	६	४०
३	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, हेटौडा	२	४०	०	४०
४.	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, भैरहवा	२	४१	२	४३
५	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, नेपालगंज	२	३३	७	४०
६	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, धनगढी	२	३७	५	४२
७	स्याउ प्रशोधन केन्द्र, जुम्ला	२	२८	५२	८०
८	जि एम पि/एच ए सि सि पि तथा अदुवा तथा मुसुरो प्रशोधन तालिम (एन टि आई एस/प्याक्ट आयोजना)	६	२६	१४	४०
९	गुण नियन्त्रण तालिम	१२	६७	१८३	२५०
जम्मा		**३३**	**३५८**	**३१८**	**६३५**

३.४ परामर्श सेवा

यस अवधिमा खाद्य प्रशोधन, प्याकेजिङ्ग, संरक्षण वारे उद्यमी व्यवसायी/उद्योग तथा संघ संस्थाहरुको माग अनुसार वाइन, क्याण्डी, ब्राण्डी, ससेज, सिन्के चाउचाउ, अचार, केटचप, जाम, स्याउको जुस, सिस्नो पाउडर, आलुबखडाको जुस तथा स्क्वास बनाउने तथा प्रशोधन गर्ने प्रविधि बारे विभिन्न स्तरमा ४५७ पटक परामर्श सेवा टेवा दिई खाद्य उद्यमी व्यवसायी विकासमा टेवा पुऱ्याइएको छ साथै, सुन्तलाको नेक्टर, फलफूल उद्योग स्थापना, दुध प्रशोधन र ढुवानी, वेकरी उद्योगको लागि आवश्यक मेशिनरी, औजार लगायतको विषयमा पनि प्रविधिमूलक सुझावहरु दिइयो ।

४. राष्ट्रिय पोषण कार्यक्रम

यस आ.व. २०७३/७४ मा खाद्य तथा पोषण सम्बन्धी निम्न बमोजिमका कार्यहरु सम्पादन गरियो ।

- विभिन्न खाद्य पदार्थहरुको पौष्टिक तत्व विश्लेषण
- खाद्य तथा पोषण सम्बन्धी ज्ञान विस्तार
- बाल आहार विकास कार्यक्रम
- खाद्य पोषण तालिम
- पोषण सर्भेक्षण

४.१ पौष्टिक तत्व विश्लेषण

यस अवधिमा कृषिजन्य खाद्य वस्तु लगायत तयारी खाद्य वस्तुहरुको पौष्टिक तत्व विश्लेषण एवं पहिचान गर्ने उद्देश्यले जम्मा १९८१ वटा खाद्य वस्तुका नमूनामा पौष्टिक तत्व विश्लेषण गर्ने काम भयो । पौष्टिक तत्व विश्लेषण विवरण तालिका ५ मा प्रस्तुत गरिएको छ ।

तालिका ५: पौष्टिक तत्व विश्लेषण सम्बन्धी विवरण

सि.नं.	खाद्य वस्तु	नमूना संख्या
१	अन्न तथा अन्नबाट बनेका परिकारहरु	१०
२	नून	१९६०
३	हरियो तथा सुख्खा तरकारी	३
४	मसलाजन्य पदार्थ	
५	दाना पदार्थ	
६	विविध	५
	जम्मा	**१९८१**

४.२ खाद्य पोषण ज्ञान विस्तार

"घरेलु खाजा स्वस्थ्य पोषिलो ताजा", र "आफ्नै बारीका सागपात र फलफुल खाऔं, स्वस्थ र निरोगी बनौं" विषयक खाद्य तथा पोषण सम्बन्धी रेडियो कार्यक्रम तयार गरी इमेज एफ.एम., उज्यालो एफ.एम. र उज्यालो एफ.एम.को कायाकैरन कार्यक्रमवाट ८५३ पटक प्रशारण गरियो । साथै खाद्य मेला सम्बन्धी सूचना विभिन्न लोकल तथा राष्ट्रिय एफ.एम. हरुबाट ९५ पटक प्रशारण गरियो ।

४.३ खाद्य पोषण तालिम

यस अवधिमा राष्ट्रिय पोषण कार्यक्रम लगायत ५ क्षेत्रीय कार्यालयहरुबाट प्राथमिकस्तरका विद्यालयका शिक्षक शिक्षिका, महिला स्वास्थ्य कार्यकर्ता, बाल कल्याण संघ संस्थाका प्रतिनिधि र आमा समुहहरुलाई लक्षित गरी २९६ जनालाई खाद्य पोषण तथा बाल आहार बारे तालिम दिइयो । खाद्य पोषण तालिमको विवरण तालिका ६ मा प्रस्तुत गरिएको छ ।

तालिका ६: खाद्य पोषण तालिम सम्बन्धी विवरण

सि.नं	कार्यालय	तालिम संख्या	सहभागी संख्या		
			महिला	पुरुष	जम्मा
१	राष्ट्रिय पोषण कार्यक्रम	३	४५	१५	६०
२.	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, विराटनगर	२	२६	१८	४४
३	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, हेटौडा	२	४०	५	४५
४.	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, भैरहवा	२	२१	२३	४४
५	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, नेपालगंज	२	२१	१९	४०

६	क्षेत्रीय खाद्य प्रविधि तथा गुण नियन्त्रण कार्यालय, धनगढी	२	३५	५	४०
७	स्याउ प्रशोधन केन्द्र, जुम्ला	१	१५	५	२०
	जम्मा	१४	२०३	९०	२९३

४.४ पोषण परिकार विकास

यस आ.व.मा स्थानियस्तरमा पाइने विभिन्न अन्नहरुको समिश्रणयुक्त पोषिलो रोटि, पोषिलो निसेउसे (सुदुर, डुप्का (दाल/सुप), पोषिलो रोटि (फर्काउने माडा) र खट्टे सातुको ट्रायल अध्ययन गरियो ।

५. एस.पि.एस नेशनल इन्क्वायरी प्वाइन्ट

यस अवधिमा एस पि एस नेशनल इन्क्वायरी प्वाइन्टबाट निम्न अनुसारको कृयाकलापहरु संचालन भएको थियो ।

- ३२ वटा इन्क्वायरी सेवा पदान
- १ एस पि एस वेवसाइट अध्यावधिक सम्बन्धी तालिम
- ६ वटा कोडेक्स/ओ आइ इ डकुमेण्टहरु तयार गरी प्रकाशन ।

६. राजश्व संकलन

यस अवधिमा विभाग र यस मातहतका कार्यालयद्वारा विभिन्न सेवा तथा नमूना विश्लेषण गरी प्रयोगशाला परिक्षण सेवा वापत कुल जम्मा २,२८,९४,१८० (दुई करोड अठ्ठाइस लाख चौरानब्बे हजार एक सय असि) रुपैया गैरकर राजश्व संकलन गरियो ।

७. अन्य आयोजना

यस अवधिमा खाद्य प्रविधि तथा गुण नियन्त्रण विभागमा निम्नानुसारका आयोजनाहरु संचालन गरिए ।

- सरकारी लगानीमा आयोजित
  - कृषि तथा खाद्य सुरक्षा आयोजना
  - एन टि आई एस आयोजना

- वैदेशिक लगानीमा आयोजित
  - ई.यू. फण्डेड टि.पी.एस.डी. आयोजना
  - डब्लु एच ओ (कोलावेरेटिभ कार्यक्रम खाद्य स्वच्छता सम्बन्धी)
  - आई एफ पि आर आई (कोलोवेरेटिभ कार्यक्रम)
  - पि टि वि आयोजना
  - प्याक्ट आयोजना