



མོན་མོན་པ་མཁའ་མཁའ་མཁའ་མཁའ་མཁའ་  
འབྲུག་མོན་མོན་པ་མཁའ་མཁའ་མཁའ་མཁའ་མཁའ་  
རྒྱལ་ཡོངས་ཐོ་རྒྱུ་མཁའ་མཁའ་མཁའ་མཁའ་

Royal Government of Bhutan  
Ministry of Agriculture and Forests

Bhutan Agriculture and Food Regulatory Authority (BAFRA)



### **National Food Testing Laboratory**

**Quarterly Progress Report: July 2015 - September 2015**  
**National Food Testing Laboratory (NFTL)**  
**BAFRA, MoAF, Yusipang**

#### **Background:**

This Report provides the instant information on the types of food samples and the total number of samples tested at NFTL, BAFRA, Yusipang on quarterly basis i.e., from *July to September 2015*.

The food and water samples had been received from various BAFRA field offices, food business operators and Government agencies for testing to serve their intended purposes. The samples have been tested through application of internationally adopted/validated methods of analysis such as FAO, WHO, AOAC, APHA, BAM, IS etc. The quality of our test reports issued are ensured through implementation of ISO/IEC 17025:2005 (General Requirements for the Competence of Testing and Calibration Laboratories) for both microbiological and chemical parameters.

The samples are tested for the following test parameters at NFTL; depending on the types of samples being received:

- I. **Microbiology:** Aerobic Plate Count, Yeast & Mould Count, Coli form Count by MPN and E coli by MPN.
- II. **Chemistry:** Total Soluble Solids (TSS), Acidity, Moisture, Ash, Acid Insoluble Ash, Fat Content, Acidity of Extracted Fat, Protein, Dry Matter Content, Total Ash, Water Soluble Ash, pH, Acidity, Total Dissolved Solids (TDS), Alkalinity, Total Hardness, Lead (as Pb), Cadmium (as Cd), Zinc (as Zn), Refractive Index, Peroxide Value and Acid Value.

#### **I. Samples Tested for Microbiological Parameters**

| Sl. No. | Types of food commodities   | No. of Samples tested & Report issued |        |           | Total |
|---------|-----------------------------|---------------------------------------|--------|-----------|-------|
|         |                             | July                                  | August | September |       |
| 1.      | Raw/packaged drinking water | 5                                     | 10     | 9         | 24    |
| 2.      | Processed milk              | -                                     | 2      | 2         | 4     |
| 3.      | Cheese & butter             | -                                     | 1      |           | 1     |
| 4.      | Vegetable pickle            | 4                                     | 6      |           | 10    |



མོན་མོན་པོ་འཛིན་གྱི་འཕྲུལ་ལྟ་སྒྲུབ་ལྷན་ཁག་  
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ཀྲུལ་ཡོངས་འཛིན་བརྒྱུ་ལྷན་ཁག་



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|                    |                  |    |   |   |           |
|--------------------|------------------|----|---|---|-----------|
| 5.                 | Fruit jam        | 3  | - | 1 | 4         |
| 6.                 | Fruit squash     | 3  | - |   | 3         |
| 7.                 | Fruit juice      | 12 | 6 |   | 18        |
| 8.                 | Ketchup & sauce  | 6  | 6 |   | 12        |
| 9.                 | Raw cereal       | -  | - | 1 | 1         |
| 10.                | Chilli powder    | -  | 1 |   | 1         |
| 11.                | Eazay            | -  | 1 |   | 1         |
| 12.                | Canned vegetable | 1  | - |   | 1         |
| 13.                | Canned fruit     | -  | 1 |   | 1         |
| 14.                | Dried vegetables | -  | 1 | 3 | 4         |
| 15.                | Tea              | -  | 2 |   | 2         |
| 16.                | Candies          | -  | 1 |   | 1         |
| 17.                | Yogurt           | -  | - | 1 | 1         |
| 18.                | Food additives   | -  | - | 1 | 1         |
| <b>Grand Total</b> |                  |    |   |   | <b>90</b> |

## **II. Samples Tested for Chemical Parameters**

| Sl. No.             | Types of food commodities   | No. of Samples tested & Report issued |        |           | Total     |
|---------------------|-----------------------------|---------------------------------------|--------|-----------|-----------|
|                     |                             | July                                  | August | September |           |
| 1.                  | Raw/packaged drinking water | 6                                     | 9      | 11        | 26        |
| 2.                  | Processed Milk              | 1                                     | 2      | -         | 3         |
| 3.                  | Cheese & butter             | -                                     | 1      | -         | 1         |
| 4.                  | Biscuit                     | 1                                     | 1      | -         | 2         |
| 5.                  | Vegetable pickle            | 5                                     | -      | -         | 5         |
| 6.                  | Fruit jam                   | 3                                     | -      | 1         | 4         |
| 7.                  | Fruit juice                 | 9                                     | 12     |           | 21        |
| 8.                  | Fruit squash                | 2                                     | -      | -         | 2         |
| 9.                  | Ketchup & sauce             | 6                                     | 6      | -         | 12        |
| 10.                 | Honey                       | 1                                     | 1      | -         | 2         |
| 11.                 | Eazay                       | -                                     | 6      | -         | 6         |
| 12.                 | Oil                         | 1                                     | 1      | -         | 2         |
| 13.                 | Dried vegetables            | -                                     | -      | 3         | 3         |
| 14.                 | Tea                         | 1                                     | 1      | -         | 2         |
| <b>Grand Total:</b> |                             |                                       |        |           | <b>91</b> |



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### III. Aflatoxin Surveillance:

NFTL also conducted aflatoxin surveillance in food products as listed below, using ELISA based test kits.

| Sl.# | Sample        | Codes    | Test Parameter (s) | Test Result | Sample collected by         |
|------|---------------|----------|--------------------|-------------|-----------------------------|
| 1    | Chilli Powder | FTL/3067 | Total Aflatoxin    | 4.5ppb      | NFTL                        |
| 2    | Chilli Powder | FTL/3068 | Total Aflatoxin    | 7.3 ppb     | NFTL                        |
| 3    | Kharang       | FTL/3069 | Total Aflatoxin    | 3.3ppb      | NFTL                        |
| 4    | Wheat floor   | FTL/3070 | Total Aflatoxin    | 7.6ppb      | NFTL                        |
| 5    | Khalo Dal     | FTL/3071 | Total Aflatoxin    | ND          | NFTL                        |
| 6    | Gendum        | FTL/3072 | Total Aflatoxin    | ND          | NFTL                        |
| 7    | Tengma        | FTL/3073 | Total Aflatoxin    | 8.5ppb      | NFTL                        |
| 8    | Dry bean      | FTL/3074 | Total Aflatoxin    | 4.1ppb      | NFTL                        |
| 9    | Thingye       | FTL/3075 | Total Aflatoxin    | 33.8ppb     | NFTL                        |
| 10   | Dried apple   | FTL/3076 | Total Aflatoxin    | 4.6ppb      | NFTL                        |
| 11   | Dried pear    | FTL/3077 | Total Aflatoxin    | 6.2ppb      | NFTL                        |
| 12   | Thingye       | FTL/3088 | Total Aflatoxin    | 37.6ppb     | BAFRA, T/phu<br>Dzongkhag   |
| 13   | Chana Dal     | FTL/3142 | Total Aflatoxin    | 4 ppb       | BAFRA, Tsirang<br>Dzongkhag |
| 14   | Dal           | FTL/3143 | Total Aflatoxin    | ND          | BAFRA, Tsirang              |



མཆོག་འཕགས་པའི་རྒྱལ་ཁབ་  
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|    |                  |          |                 |          |                             |
|----|------------------|----------|-----------------|----------|-----------------------------|
|    |                  |          |                 |          | Dzongkhag                   |
| 15 | Chilli powder    | FTL/3144 | Total Aflatoxin | 24.5 ppb | BAFRA, Tsirang<br>Dzongkhag |
| 16 | Parmal rice      | FTL/3145 | Total Aflatoxin | ND       | BAFRA, Tsirang<br>Dzongkhag |
| 17 | Pea nut          | FTL/3146 | Total Aflatoxin | ND       | BAFRA, Tsirang<br>Dzongkhag |
| 18 | Rice (beaten)    | FTL/3176 | Total Aflatoxin | 1.1 ppb  | BAFRA, T/phu<br>Dzongkhag   |
| 19 | Kaabche          | FTL/3177 | Total Aflatoxin | 4.6ppb   | BAFRA, T/phu<br>Dzongkhag   |
| 20 | PothraBori       | FTL/3178 | Total Aflatoxin | 3 ppb    | BAFRA, T/phu<br>Dzongkhag   |
| 21 | Poilo Dal        | FTL/3179 | Total Aflatoxin | 1.1 ppb  | BAFRA, T/phu<br>Dzongkhag   |
| 22 | Sathubadmash     | FTL/3180 | Total Aflatoxin | 1.8 ppb  | BAFRA, T/phu<br>Dzongkhag   |
| 23 | Dry motor        | FTL/3181 | Total Aflatoxin | 1.1 ppb  | BAFRA, T/phu<br>Dzongkhag   |
| 24 | Chana Dal        | FTL/3182 | Total Aflatoxin | 1.8 ppb  | BAFRA, T/phu<br>Dzongkhag   |
| 25 | Buck wheat floor | FTL/3183 | Total Aflatoxin | 12.5 ppb | BAFRA, T/phu<br>Dzongkhag   |
| 26 | Pepper           | FTL/3184 | Total Aflatoxin | 87.8 ppb | BAFRA, T/phu<br>Dzongkhag   |



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|    |               |          |                 |          |                  |         |
|----|---------------|----------|-----------------|----------|------------------|---------|
| 27 | Chilli powder | FTL/3185 | Total Aflatoxin | 4.9 ppb  | BAFRA, Dzongkhag | T/phu   |
| 28 | Chilli Powder | FTL/3190 | Total Aflatoxin | 14.6 ppb | BAFRA, Dzongkhag | Wangdue |
| 29 | Kharang       | FTL/3191 | Total Aflatoxin | 0.68 ppb | BAFRA, Dzongkhag | Wangdue |
| 30 | Soya bean     | FTL/3192 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Wangdue |
| 31 | Peanut        | FTL/3193 | Total Aflatoxin | 0.4 ppb  | BAFRA, Dzongkhag | Wangdue |
| 32 | Peanut        | FTL/3216 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Punakha |
| 33 | Chilli powder | FTL/3217 | Total Aflatoxin | 0.9 ppb  | BAFRA, Dzongkhag | Punakha |
| 34 | Chilli powder | FTL/3218 | Total Aflatoxin | 3.9 ppb  | BAFRA, Dzongkhag | Punakha |
| 35 | Chilli powder | FTL/3224 | Total Aflatoxin | 5.2 ppb  | BAFRA, Dzongkhag | Punakha |
| 36 | Peanut        | FTL/3225 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Punakha |
| 37 | Chilli powder | FTL/3226 | Total Aflatoxin | 14.3ppb  | BAFRA, Dzongkhag | Punakha |
| 38 | Chilli powder | FTL/3227 | Total Aflatoxin | 8.2 ppb  | BAFRA, Dzongkhag | Punakha |
| 39 | Soya bean     | FTL/3235 | Total Aflatoxin | 3.9 ppb  | BAFRA,           | Haa     |



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|    |               |          |                 |          |                          |
|----|---------------|----------|-----------------|----------|--------------------------|
|    |               |          |                 |          | Dzongkhag                |
| 40 | Chick pea     | FTL/3236 | Total Aflatoxin | 1.8 ppb  | BAFRA, Haa<br>Dzongkhag  |
| 41 | Soya Chunk    | FTL/3238 | Total Aflatoxin | ND       | BAFRA, Haa<br>Dzongkhag  |
| 42 | Rice (WFP)    | FTL/3239 | Total Aflatoxin | 2 ppb    | BAFRA, Haa<br>Dzongkhag  |
| 43 | Nutrila       | FTL/3241 | Total Aflatoxin | 7.5 ppb  | BAFRA, Haa<br>Dzongkhag  |
| 44 | Chilli powder | FTL/3248 | Total Aflatoxin | 4.4 ppb  | BAFRA, Haa<br>Dzongkhag  |
| 45 | Chilli Powder | FTL/3251 | Total Aflatoxin | 5.9 ppb  | BAFRA, Haa<br>Dzongkhag  |
| 46 | Chilli powder | FTL/3253 | Total Aflatoxin | 46.7 ppb | BAFRA, Haa<br>Dzongkhag  |
| 47 | Soyabari      | FTL/3254 | Total Aflatoxin | 12.2 ppb | BAFRA, Haa<br>Dzongkhag  |
| 48 | Kharang       | FTL/3260 | Total Aflatoxin | 65 ppb   | BAFRA, Haa<br>Dzongkhag  |
| 49 | Lentil black  | FTL/3267 | Total Aflatoxin | ND       | BAFRA, Paro<br>Dzongkhag |
| 50 | Nutrila       | FTL/3268 | Total Aflatoxin | 2.2 ppb  | BAFRA, Paro<br>Dzongkhag |
| 51 | Peanut        | FTL/3269 | Total Aflatoxin | 1.7 ppb  | BAFRA, Paro<br>Dzongkhag |



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|----|-------------------|----------|-----------------|----------|------------------|--------|
| 52 | Chilli powder(1)  | FTL/3270 | Total Aflatoxin | 1.1 ppb  | BAFRA, Dzongkhag | Paro   |
| 53 | Chilli powder (2) | FTL/3271 | Total Aflatoxin | 31.3ppb  | BAFRA, Dzongkhag | Paro   |
| 54 | Chilli powder(3)  | FTL/3272 | Total Aflatoxin | 11.4 ppb | BAFRA, Dzongkhag | Paro   |
| 55 | Chilli powder (4) | FTL/3273 | Total Aflatoxin | 7.3 ppb  | BAFRA, Dzongkhag | Paro   |
| 56 | MBM Mirch powder  | FTL/3274 | Total Aflatoxin | 77.9 ppb | BAFRA, Dzongkhag | Paro   |
| 57 | Salted peanut     | FTL/3275 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Paro   |
| 58 | Chana             | FTL/3276 | Total Aflatoxin | 2 ppb    | BAFRA, Dzongkhag | Paro   |
| 59 | Local maize       | FTL/3277 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Paro   |
| 60 | Dried peas        | FTL/3283 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Paro   |
| 61 | Lentil orange     | FTL/3284 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Paro   |
| 62 | Dal               | FTL/3288 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Mongar |
| 63 | Soya bean         | FTL/3289 | Total Aflatoxin | 4 ppb    | BAFRA, Dzongkhag | Mongar |
| 64 | Kharang           | FTL/3290 | Total Aflatoxin | ND       | BAFRA, Dzongkhag | Mongar |



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|----|---------------|----------|-----------------|----------|--------------------------------|
|    |               |          |                 |          | Dzongkhag                      |
| 65 | Chana         | FTL/3291 | Total Aflatoxin | 2.3ppb   | BAFRA, Mongar<br>Dzongkhag     |
| 66 | Chilli powder | FTL/3292 | Total Aflatoxin | 4.8 ppb  | BAFRA, Mongar<br>Dzongkhag     |
| 67 | Dal           | FTL/3297 | Total Aflatoxin | ND       | BAFRA, Gasa<br>Dzongkhag       |
| 68 | Chana         | FTL/3298 | Total Aflatoxin | ND       | BAFRA, Gasa<br>Dzongkhag       |
| 69 | Chilli powder | FTL/3299 | Total Aflatoxin | 18.4 ppb | BAFRA, Gasa<br>Dzongkhag       |
| 70 | Chilli powder | FTL/3326 | Total Aflatoxin | 15.8 ppb | BAFRA, Trashigang<br>Dzongkhag |
| 71 | Chilli powder | FTL/3327 | Total Aflatoxin | 58.1 ppb | BAFRA, Trashigang<br>Dzongkhag |
| 72 | Peanut        | FTL/3328 | Total Aflatoxin | 1.7 ppb  | BAFRA, Trashigang<br>Dzongkhag |
| 73 | Chilli powder | FTL/3329 | Total Aflatoxin | 8.4 ppb  | BAFRA, Trashigang<br>Dzongkhag |
| 74 | Chilli powder | FTL/3330 | Total Aflatoxin | 24 ppb   | BAFRA, Trashigang<br>Dzongkhag |
| 75 | Chilli powder | FTL/3331 | Total Aflatoxin | 4.9 ppb  | BAFRA, Trashigang<br>Dzongkhag |
| 76 | Chilli powder | FTL/3332 | Total Aflatoxin | 57.7 ppb | BAFRA, Trashigang<br>Dzongkhag |



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|----|-----------------------|----------|-----------------|----------|-----------------------------|
| 77 | Kharang               | FTL/3333 | Total Aflatoxin | 2.1 ppb  | BAFRA, Trashigang Dzongkhag |
| 78 | Chilli powder         | FTL/3334 | Total Aflatoxin | 10.5 ppb | BAFRA, Trashigang Dzongkhag |
| 79 | Chilli powder         | FTL/3335 | Total Aflatoxin | 11.9 ppb | BAFRA, Trashigang Dzongkhag |
| 80 | Chilli powder         | FTL/3336 | Total Aflatoxin | 39.8ppb  | BAFRA, Trashigang Dzongkhag |
| 81 | Chilli powder         | FTL/3337 | Total Aflatoxin | 35.3 ppb | BAFRA, Trashigang Dzongkhag |
| 82 | EpcheEazay (Boensem)  | FTL/3374 | Total Aflatoxin | 14.5 ppb | Private, Thimphu city       |
| 83 | Epcheeazay (Zhimtshi) | FTL/3375 | Total Aflatoxin | 23.8 ppb | Private, Thimphu city       |
| 84 | Chilli Powder         | FTL/3403 | Total Aflatoxin | 10.4 ppb | BAFRA, Sarpang Dzongkhag    |
| 85 | Chana Dal             | FTL/3404 | Total Aflatoxin | ND       | BAFRA, Sarpang Dzongkhag    |
| 86 | Dried peas            | FTL/3405 | Total Aflatoxin | ND       | BAFRA, Sarpang Dzongkhag    |
| 87 | Chana                 | FTL/3406 | Total Aflatoxin | ND       | BAFRA, Sarpang Dzongkhag    |
| 88 | Chilli Powder         | FTL/3419 | Total Aflatoxin | 6.7 ppb  | BAFRA, P/Gatshel Dzongkhag  |
| 89 | Kharang               | FTL/3420 | Total Aflatoxin | 3.3 ppb  | BAFRA, P/Gatshel            |



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|----|-----------------------------|----------|-----------------|----------|-------------------------------|
|    |                             |          |                 |          | Dzongkhag                     |
| 90 | Oya bean                    | FTL/3421 | Total Aflatoxin | 5.5 ppb  | BAFRA, P/Gatshel<br>Dzongkhag |
| 91 | Peanuts                     | FTL/3422 | Total Aflatoxin | 4.3 ppb  | BAFRA, P/Gatshel<br>Dzongkhag |
| 92 | Herbal Tea                  | FTL/3447 | Total Aflatoxin | 30.64ppb | PAQS, BAFRA, P/ling           |
| 93 | Kharang                     | FTL/3454 | Total Aflatoxin | 1.25 ppb | BAFRA, T/phu<br>Dzongkhag     |
| 94 | Vhilli powder               | FTL/3456 | Total Aflatoxin | 79 ppb   | BAFRA, T/phu<br>Dzongkhag     |
| 95 | Dried red<br>wrinkle chilli | FTL/3457 | Total Aflatoxin | 6.5 ppb  | NFTL                          |
| 96 | Chili powder<br>(wrinkled)  | FTL/3458 | Total Aflatoxin | 7.3 ppb  | NFTL                          |
| 97 | Chilli powder<br>(Refine)   | FTL/3459 | Total Aflatoxin | 63.9 ppb | NFTL                          |