Blue Box training

Hand-out

The Blue Box tools

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The blue box is a box containing a set of equipments for field quality testing and screening, with visual and written instructions for the users.

The tools included in the box allow performing grading of cereal grains (including wheat and rice), grading of pulses (such as lentils, peas, chickpeas, beans) and moisture determination of various type of commodities.

The box includes as well necessary tools to conduct sampling exercises in accordance with International Standards (GAFTA/ISO): regular sampling exercise or sampling for microbiological testing i.e. in sterile conditions.

The “Blue Box” is equipped with the sampling equipment required to conduct sampling in accordance with International Standards (GAFTA/ISO) from both Bulk and Bagged Commodities.
# Overview of the Blue Box equipment

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### Equipment – sampling and preparation

#### Grain sampling scoop (x1)

The sampling scoop is to be used for the collection of samples from bulk commodities.

The scoop is made of pewter/tin.

Before using the scoop make sure it is dry and clean.

The procedure gives instructions on:
- Sampling plan to be followed according to the size of the lot
- Size of the sample to be collected
- Methodology on how to use the scoop
- Where to withdraw the samples
- Labelling of the samples

#### Grain sampling spear (x1)

The grain sampling spear is to be used for the collection of samples from bagged commodities.

Before using the spear, make sure it is clean, dry and free of objectionable matters (e.g.: old grains)

Sampling procedure hand-out is included in the Blue Box materials.

The procedure gives instructions on:
- Sampling plan to be followed according to the size of the lot
- Size of the sample to be collected
- Methodology on how to use the scoop
- Where to withdraw the samples
- Labelling of the samples
The Blue Box tools

**Surgical gloves (x100)**

In the purpose of sampling for microbiological tests, the person responsible for taking the sample has to wear gloves in order not to contaminate the samples (with its own microflora).

**Cotton wool balls (x100)**

In the context of sampling for microbiological purpose, the tools for the collection of the sample have to be sterilised using the cotton wool balls.

**Sterile sample bags (x1000)**

The sample has to be collected into sterile sample bags.

**Spray bottle with ethanol (x1)**

The ethanol is to be used for the sterilisation of the tools when collecting samples for microbiological purpose.

In the case of microbiological sampling, i.e. sampling for the testing of microbial contamination of the sample, the collection of the sample has to be performed under sterile conditions. No external contamination shall interfere with the sampling exercise.

The sterilizing agents aim at sterilizing
- Hands of the person who collects the sample
- Scoop and/or spear

Sampling for microbiological testing

The purpose of sampling for microbiological testing is to actually analyse the microflora which potentially contaminates the sample.

Consequently it is very important that the collection of the sample is performed in a sterile manner as to not contaminate the sample with external contaminations.

External contaminants come from:
- Hands of the person
- Atmospheric atmosphere

When sampling for microbiological purpose make sure that:
- The person responsible for the collection of the samples wear gloves (and if possible a mask).
- The spear and the scoop are clean and neat.
- Tools are properly sterilised with ethanol before the use and in-between of each increment.
- Samples are collected into sterile bags which have to be hermetically sealed and properly labelled.

For sampling for microbiological purpose please refer to BB_ho4_Sampling.
The Blue Box tools

**Sample bucket -10 kg (x1)**

All increments withdrawn from the lot have to be gathered. They are collected into the bucket.

Make sure that the bucket is clean, sound, and neat and does not contain objectionable matter (e.g.: older grains from previous sampling exercise).

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**Multiple slot divider (riffle divider)(x1)**

A sample has to be the most representative as possible of the whole lot. During the sampling protocol, aggregate samples have to be reduced into smaller samples.

The reduction of the sample size shall not imply grain segregation (according to grain size, gravity, foreign matters content...), all subsamples have to present the same characteristics.
The Blue Box tools

Equipment - Grading

Grading sieves (minimum 1 set: 1 sieve + 1 pan)
The set of sieves includes one sieve and a pan, of the suitable characteristics and size to determine the grading parameters as in the commodity specification standards e.g.:

- Grain size.
- Foreign matters
- Broken grains etc.

Refer to grading guidelines hand-out included in the Blue Box package.

Digital moisture meter
The moisture meter is an easy and practical tool for the determination of the moisture content in grains and pulses.

This moisture meter is intended to maize, maize high moisture (> 50% m.c.), wheat, soya beans, sorghum, hard red winter wheat, soft red winter wheat, oats, bali, durum, sunflower oil seeds, millet, rape seed, rye, safflower.

The moisture meter provides the percentage of moisture contained into the analysed sample. Moisture content of the sample is expressed as a percentage of the total weigh of the sample.

The moisture meter needs to be calibrated regarding to the commodity that is being tested.

The moisture meter shall be used following the instructions provided in the moisture meter manual included in the Blue Box package.

The moisture meter is provided into its protection case and should be handled with care.

Electronic scale
The electronic scale allows weighing samples with a precision of 0.1g.

The scale is to be used for the determination of the grain or pulses grade. It is important that the scale is calibrated regularly, recommended 1 per year. A 200g calibration weight will be provided with the Blue Box equipment.
The Blue Box tools

**Probe thermometer**

- Probe length: 50 cm
- Temperature range: -20°C to +60°C
- Accuracy: +/- 1°C
- Battery operated (AA size, 1.5V battery)
### The Blue Box tools

#### Equipment - Miscellaneous

**Power inverter**

![Power inverter](image)

**Calculator**

![Calculator](image)

**Magnifying glass**

![Magnifying glass](image)

**Forceps**

![Forceps](image)

**Safety goggles**

![Safety goggles](image)

**Torch**

![Torch](image)

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