



# THE TRAINING OF MEAT INSPECTORS IN BOTSWANA

A Presentation at OIE-AVTA-GALV med Regional Conference on  
the role of Veterinary Para-Professionals in Africa.

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## *Brief Background*

The meat industries of many African countries face a challenging future as a result of changing consumer attitudes on issues such as food safety, animal welfare and general health-related needs. Well qualified and adaptable Veterinary Para-Professionals (Meat Inspectors), technical managers are needed to respond positively to problems and marketing opportunities.





## *Brief Background cont.*

- In meeting the needs of the African continent in manpower development for safe food, Food and Agriculture Organisation (FAO) established an Institute in Botswana and located it in Lobatse. It was named FAO Regional Training Centre for Meat Inspectors and Meat Technologists in Africa. This was a cooperative undertaking by the Government of Botswana and Denmark with the technical and operational assistance from the FAO of the United Nations.





## *Brief Background cont.*

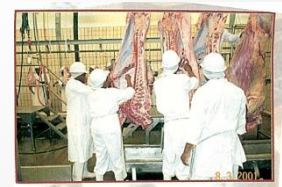
- Preliminary training started in October 1984 while full training operations started in 1985.
- FAO managed and organized courses until the end of the Agreement period and then handed the Institution over to the Botswana Government in September 1991.





## *Brief Background cont.*

- The Institution was renamed Meat Inspection Training Centre (MITC). Academic activities commenced in January 1996 after a break of 5 years.
- A Certificate in Meat Inspection is awarded to successful participants after a six-month (6) training.
- Since its establishment in 1984, over 1,900 participants from 45 African countries have undergone training at the Institution.
- Short trainings and refresher courses for Veterinarians and Food Business Operators from Ethiopia, Somalia and Uganda have been organized on request.
- Further afield, some German and Italian veterinarians have had short-term attachments at the Institute while another German veterinarian is expected in August 2016.





## *Take-over of MITC by BCA*

- On the 01<sup>st</sup> of April 2012, MITC was taken-over by the Botswana College of Agriculture (BCA) through a Presidential Directive. The name of the Institution was amended to Meat Industry Training Institute (MITI). The goal of this take-over is to place the Institution under the umbrella of a well-established and internationally recognized Tertiary Academic establishment so that it can grow to meet the various training needs of the continent.
- The Institute currently still offers the Certificate in Meat Inspection Programme.
- MITI Certificate Programme is accredited by the Botswana Qualifications Authority (BQA)
- Development of a Higher Diploma in Meat Inspection programme is at an advanced stage. It is planned to commence in August 2016.





## *Facilities*

- Facilities at MITI consist of two classrooms, three hostel blocks with total bed space of 40 (2 sharing), an administration block, staff offices, library, a laboratory, 2 bed-room guest house and an abattoir.
- The abattoir serves as a training facility with the ability to process 50 head of cattle, 50 sheep, 50 goats and 50 pigs per day. Furthermore, the modern abattoir of Botswana Meat Commission (BMC), an EU-approved export abattoir, is in the immediate neighborhood and provides additional training facilities for the Institute.







## *Teaching & Support Staff*

- MITI has highly qualified training and support staff consisting of:
- veterinarians with post-graduate training in veterinary public health and with emphasis on meat hygiene.
  - All teaching staff have a minimum of 4 years working experience at the BMC export abattoir before recruitment to teach at MITI. The Institute also receives teaching support of some lecturers from the main campus, Botswana College of Agriculture.
- A Chief technician and one technical officer who are trained Meat Inspectors (Veterinary Para-Professionals)
- A Laboratory Technician
- 2 Library Officers.
- Administrative and other support staff.







# Course content & Entry Requirement

- 1. Parasitic diseases of food animals
- 2. Ante-mortem and post mortem inspection
- 3. Microbiology for meat inspectors
- 4. Pathology of food animals
- 5. Food safety
- 6. Sanitation of meat establishments
- 7. Anatomy and physiology of food animals
- 8. Food safety legislation
- 9. Epidemiology and zoonosis
- 10. Meat preservation
- 11. Poultry inspection
- 12. Abattoir by-products collection, processing and utilization
- **ENTRY REQUIREMENTS**
- Pre-requisite qualification and experience for the meat inspection programme is;
- Certificate in Animal Health and Production with a minimum of 2 years working experience in the meat industry.





# Fees for the Certificate in Meat Inspection Programme

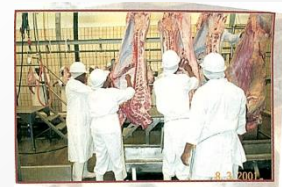
	SADC STUDENTS	NON SADC STUDENTS
FEEDING (Breakfast, Lunch, Dinner and Two Tea-Breaks and snack) for six months	BWP 5,980	BWP 5,980
ACCOMODATION : (Two sharing) for 6 months	BWP 3,880	BWP 3,880
TUITION - 30 CREDITS @P851.00/Credit for SADC Students and P1872.00/ credit for Non SADC Students	BWP 43,680	BWP 56,160
ADMINISTRATION & Transport (Transport to and from Airport, as well as educational trips)		
LAUNDRY FEE - for 6 months	BWP 827	BWP 827
IDENTITY CARD FEE - flat charge	BWP 55	BWP 55
STUDENT LIFE - for 6 months	BWP 133	BWP 133
APPLICATION FEE - flat charge	BWP 260	BWP 520
PROTECTIVE CLOTHING FOR PRACTICALS (belong to students after training)	BWP 676	BWP 676
REFUNDABLE CAUTION FEE		
GRADUATION ACADEMIC GOWN		
<b>TOTAL COST</b>	<b>BWP 55,491</b>	<b>BWP 68,231</b>





## *Justification: Higher Diploma Meat Inspection Programme.*

- Meat inspection duties had centered on the application of the organoleptic principles in the use of the senses to determine wholesomeness or otherwise of meat and meat products. This approach has been found to be inadequate in meeting the demands of consumers who progressively place considerable emphasis on the welfare of animals prior to slaughter. Organoleptic method has also been known not to be preventative as its application focuses on the after-effect of processing unlike the HACCP principle of prevention and detecting areas of critical control. Consumers demand safe meat and meat products from processing plants and place their trust in the controlling authorities to ensure this.





## *Justification: Higher Diploma Meat Inspection Programme cont.*

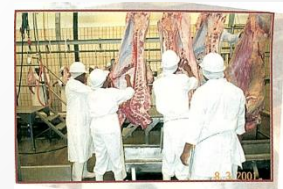
- The current Certificate in Meat Inspection runs for only six months and places more emphasis on the organoleptic approach with very minimal course content on the vital issues of HACCP, Animal Welfare and self-auditing of operations.
- The trend all over the world now is for Food Business Operators (FBO) to regulate their process activities while the national controlling authorities carryout periodic auditing of the establishments for compliance.





## *Justification: Higher Diploma Meat Inspection Programme cont.*

- The introduction of the six semester (3 years) Higher Diploma Meat Inspection (HDMI) programme is to cater for the shortcomings of the current six-month Certificate programme. Emphasis are placed more on HACCP principles and their applications, food safety and animal welfare issues as well as competence in auditing procedures at a meat processing plant.
- The Diploma programme also makes provision of a minimum of 12 weeks practical attachment to various meat processing plants so as to enhance competence and skills of students such that they can stand on their own immediately on completion of the HDMI programme.





## *Justification: Higher Diploma Meat Inspection Programme cont.*

- This is very critical as graduates of our Institute will end up being in charge of processing plants with little or no assistance from the Veterinarians who are, in most cases, fully engaged in livestock disease control and eradication.
- They are essentially, **SUPER**
- **VETERINARY PARA-PROFESSIONALS.**



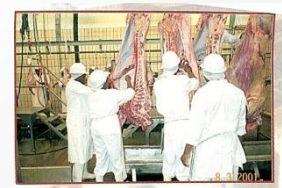


## *Planned Higher Diploma Meat Inspection.*

### **Programme**

- a. 3 year full time programme comprising of 30 courses made up of 3 credits each which brings them to a total of 90 credits excluding Field Practical Training (FPT).

There will be a 12 week FPT of 3 credits between levels 200 and 300.





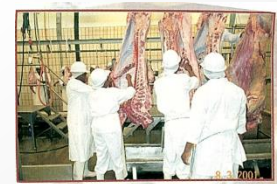


## *Planned Higher Diploma Meat Inspection cont.*

### **b. Level 100 Semester I courses:**

- i. BSB110: Mathematics I
- ii. BSB111: General and Inorganic Chemistry
- iii. BSB112: Physics I
- iv. BSB113: Biology of Cells
- v. ICT121: Computer Skills Fundamentals I.
- vi. COM141: Introduction to Communication and Academic Literacy

*These are a prerequisite for Level 100 Semester II courses.*





## *Planned Higher Diploma Meat Inspection cont.*

### **c. Level 100 Semester II courses:**

- i. BSB120: Mathematics II
- ii. BSB121: Physical and Organic Chemistry
- iii. BSB122: Physics II
- iv. BSB123: Biodiversity
- v. ICT122: Computer Skills Fundamentals II
- vi. COM142: Advanced and Professional Communication

***Level 100 Semester II courses are a prerequisite for FPT 100 and Level 200 courses.***





## *Planned Higher Diploma Meat Inspection cont.*

### **d. Level 200 Semester I courses:**

- i. MID210: Veterinary Parasitology for Meat Inspectors
- ii. MID211: Veterinary Anatomy and Physiology for Meat Inspectors
- iii. MID212: Veterinary Pathology for Meat Inspectors
- iv. MID213: Welfare of Animals at Slaughter
- v. GEC214: Elective

***Level 200 courses are a prerequisite for FPT 200 and Level 300 courses.***





## *Planned Higher Diploma Meat Inspection cont.*

### **e. Level 200 Semester II courses:**

- i. MID220: Meat Inspection of Red Meat Species
- ii. MID221: Microbial Diseases for Meat Inspectors
- iii. MID222: Livestock Judging and Carcass Grading
- iv. MID223: Meat Safety and Regulations
- v. GEC224: Elective

***Level 200 courses are a prerequisite for FPT 200 and Level 300 courses.***



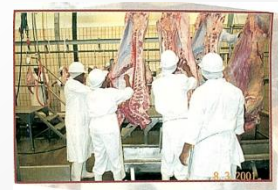


## *Planned Higher Diploma Meat Inspection cont.*

### **f. FPT between levels 200 and 300**

This will be a 12 week practical attachment focussing mainly on meat inspection and carcass grading, as well as traceability systems, hygiene monitoring and HACCP and its related procedures.

The attachment will be divided into 6 weeks poultry and 6 weeks red meat species.





## *Planned Higher Diploma Meat Inspection cont.*

### **g. Level 300 Semester I courses:**

- i. MID310: Meat Inspection of White and Game Species
- ii. MID311: Meat Preservation Technology
- iii. MID312: Meat Science
- iv. MID313: Hazard Analysis Critical Control Point System (HACCP)
- v. GEC314: Elective

*Level 300 courses are a transition to work environment. During this semester, students will practice mainly as operator personnel under the supervision of relevant lecturer, technician as well as staff of the establishment.*





## *Planned Higher Diploma Meat Inspection cont.*

### **h. Level 300 Semester II courses:**

- i. MID320: Verification of Compliance with Animal Welfare Rules at Slaughter.
- ii. MID321: Applied Carcass Grading
- iii. MID322: Applied Hygiene Monitoring Systems
- iv. MID323: Applied Meat Inspection
- v. MID324: Verification of Compliance with Food Safety

*Level 300 Semester II courses are a transition to work environment. During this semester, students will practice as regulatory personnel under the supervision of relevant lecturer, technician as well as staff of the establishment.*







## *Planned Higher Diploma Meat Inspection cont.*

### **An outcome-based programme.**

- a. Students should have demonstrated knowledge, skills and competencies upon completion of the programme.





## *Planned Higher Diploma Meat Inspection cont.*

### **A hands-on programme.**

- a. The programme is structured such that class room presentations are followed by practicals in the laboratory/meat premises.
- b. In semesters 5 & 6 students will be based in laboratories and meat premises on a rotational basis under the supervision of the relevant lecturers and industry personnel.
- c. Students will be required to complete an intensive 12 week FPT programme to qualify for or be awarded with a Diploma.





## *Planned Higher Diploma Meat Inspection cont.*

### **Progression to Higher Learning.**

- a. Students can progress to Degrees in Meat Science, Food Science, Food Technology and other food safety related programmes wherever they are offered.





## *Planned Higher Diploma Meat Inspection cont.*

### **An industry aligned programme.**

- a. There would be a forum between the College and the related industry players to ensure value addition in terms of programmes, graduates and research outputs.
- b. There will be regular performance audits of the graduates.





## *Entry Requirement Higher Diploma Meat Inspection.*

- Admission into the Higher Diploma in Meat Inspection shall be as specified in the Faculty of Agriculture Special Regulations AG 11.20
- Holders of a minimum of a Certificate in Meat Inspection awarded at a recognized Institution or its equivalent.





## *Conclusion.*

- Meat hygiene is closely linked to the development of the livestock industry. Slaughterhouses generate a wealth of data on the trends of animal diseases, carcass yield and other information useful in the improvement of animal production.
- Organized meat inspection protects the consuming public against the hazards of meat borne diseases. This therefore implies that meat hygiene procedures aid in the control of zoonosis.
- **VETERINARY PARA-PROFESSIONALS (VPP) PLAY A LEADING ROLE IN ACHIEVING THESE OBJECTIVES.**





# *Method of Application*



- METHODS OF APPLICATION
- Application forms for the Certificate in Meat Inspection can be accessed from BCA website at [www.bca.bw](http://www.bca.bw).
- Botswana College of Agriculture
- Meat Industry Training Institute
- Private Bag 45
- Lobatse, Botswana
- Tel:267 5330671
- Fax: 267 5332259
- Email: [anderua.aganga@gmail.com](mailto:anderua.aganga@gmail.com)







## *UPDATE ON BOTSWANA COLLEGE OF AGRICULTURE.*

- Botswana government has granted permission for Botswana College of Agriculture (BCA) to transform into a fully-fledged University.
- Its new name is:
- **BOTSWANA UNIVERSITY OF AGRICULTURE AND NATURAL RESOURCES (BUAN)**

