MINISTERIAL STATEMENT BY HON. DR. EUSTARCKIO KAZONGA, MP
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ON THE
BANANA BUNCHY TOP DISEASE (BBTD) OUTBREAK IN ZAMBIA
MARCH 2011
1.0 INTRODUCTION

MR. SPEAKER

THE NATION HAS OVER THE LAST FEW WEEKS HEARD OR READ REPORTS BOTH IN THE ELECTRONIC AND PRINT MEDIA ABOUT A DEVASTATING BANANA DISEASE IN THE CHIAWA/CHIRUNDU AREAS. IT IS IN VIEW OF THIS THAT I WISH TO BRIEF THE NATION THROUGH THIS AUGUST HOUSE ON THE BANANA DISEASE.

IN MY STATEMENT I COVER THE FOLLOWING: WHAT THE DISEASE IS; SIGNS OF THE DISEASE; HOW IT IS TRANSMITTED; AREAS AFFECTED; MEASURES TAKEN BY GOVERNMENT TO CONTROL THE DISEASE AND THE WAY FORWARD.

THE BANANA BUNCHY TOP DISEASE (BBTD) IS A VIRAL DISEASE WHICH IS TRANSMITTED BY A VIRUS CALLED BANANA BUNCHY TOP VIRUS (BBTV). BBTD CAUSES HUGE LOSSES TO BANANA PRODUCTION AND HAS BEEN IDENTIFIED IN SOME BANANA PLANTATIONS ON THE COPPERBELT, CENTRAL AND LUSAKA PROVINCES.

ZAMBIA CULTIVATES A VARIETY OF BANANAS NAMELY; GRANDE NAINE, DWARF CAVENDISH AND WILLIAMS. BANANAS IN THE COUNTRY ARE MOSTLY GROWN UNDER IRRIGATION SYSTEMS. ALL BANANA VARIETIES AND PLANTAINS ARE SUSCEPTIBLE TO BBTV.

BANANAS PLAY A VERY IMPORTANT ROLE IN THE ZAMBIAN ECONOMY. THEY ARE AVAILABLE THROUGHOUT THE YEAR AND ARE A SOURCE OF CARBOHYDRATES, PROTEIN AND VITAMINS SUCH AS VITAMIN A, B, C, D AND E. BANANAS ARE PRODUCED BY BOTH SMALL SCALE AND COMMERCIAL FARMERS. THE PRODUCTION OF BANANAS CONTRIBUTES SIGNIFICANTLY TO FOOD SECURITY, EMPLOYMENT CREATION AND POVERTY REDUCTION.

IN THE PAST, ZAMBIA USED TO IMPORT MOST OF HER BANANAS FROM NEIGHBORING COUNTRIES SUCH AS ZIMBABWE AND SOUTH AFRICA. HOWEVER, THIS TREND HAS REDUCED TREMENDOUSLY DUE TO INCREASED CULTIVATION BY BOTH COMMERCIAL AND SMALL-SCALE FARMERS. THE POTENTIAL FOR BANANA PRODUCTION IN ZAMBIA IS VERY HIGH, ESTIMATED AT 60 MT PER HECTARE, ANNUALLY. THIS POTENTIAL IS UNDER THREAT BY THE SPREAD OF BBTV.
2.0 CAUSES OF THE DISEASE

MR. SPEAKER

THE ORIGIN OF BBTD IS NOT KNOWN WITH CERTAINTY. HOWEVER, THERE IS EVIDENCE TO SHOW ITS EXISTENCE IN COUNTRIES IN THE FAR EAST AS FAR BACK AS 1889. IN ZAMBIA, THE OCCURRENCE OF THE DISEASE WAS CONFIRMED 10 YEARS AGO. SYMPTOMS OF THIS DISEASE IN BANANA PLANTS IN AN ADVANCED STAGE OF INFECTION INCLUDE STUNTEDNESS, THE ‘THROAT’ OF THE PLANT IS CHOKED WITH A “ROSETTE” OF SHORT, NARROW, ERECT LEAVES, GIVING THE TYPICAL “BUNCHY TOP” APPEARANCE AND WAVY YELLOW LEAF MARGINS. THE MOST DISTINGUISHING SYMPTOM IS A SERIES OF DOT-DASH DARK GREEN LINES RUNNING PARALLEL TO THE VEINS AND HOOKING AS THEY ENTER THE LEAF PETIOLE. SEVERELY INFECTED BANANA PLANTS DO NOT BEAR FRUITS.

IN ZAMBIA, SOME BANANA GROWERS KNOW THE DISEASE AND CAN IDENTIFY THE SYMPTOMS BUT USUALLY TAKE ACTION TOO LATE WHEN THE DISEASE IS FULLY EXPRESSED.

MR. SPEAKER

THE BBTD IS SPREAD THROUGH APHID TRANSMISSION AND USE OF DISEASED PLANTING PLANTS.

APHID TRANSMISSION

THE APHIDS KNOWN TO SPREAD THE DISEASE ARE CALLED BANANA APHIDS (PENTALONIA NIGRONERVOSA). THESE APHIDS HOWEVER, ARE WEAK FLYERS. THIS MEANS THAT THEY MAY NOT SPREAD THE DISEASE FAR FROM THE SITE OF INFECTION UNAIDED BUT THEY CAN MOVE SHORT DISTANCES AND, OVER A LONG PERIOD OF TIME, THEY MAY COVER A GREATER PART OF THE BANANA FIELD. THE POPULATION OF THESE APHIDS IS VERY LOW IN ZAMBIA ACCORDING TO THE RESULTS OF SURVEYS CONDUCTED IN THE PAST.

USE OF DISEASED PLANTING MATERIALS

THIS IS THE MOST LIKELY MEANS OF DISSEMINATING BBTD IN ZAMBIA. WHEN A PLANT IS INFECTED BY THIS DISEASE, THE CAUSAL VIRUS SPREADS TO ALL PARTS OF THE PLANT INCLUDING THE SUCKERS GROWING FROM THE INFECTED MOTHER PLANTS. SINCE BANANA PLANTS ARE VEGETATIVELY PROPAGATED, THE SUCKERS TRANSFERRED FROM
DISEASED FIELDS CARRY THE DISEASE TO NEW FIELDS. THIS WAY, THE DISEASE SPREADS TO NEW FIELDS.

3.0 AREAS AFFECTED

MR. SPEAKER

SO FAR THE DISEASE HAS BEEN IDENTIFIED IN LUSAKA, SOUTHERN, CENTRAL, COPPERBELT, EASTERN AND LUAPULA PROVINCES. THE EARLIEST REPORT OF BBTD, AS REPORTED BY FARMERS DURING THE SURVEYS OF 2009 TO 2010, INDICATED THE PRESENCE OF THIS DISEASE ABOUT 11 YEARS AGO IN CHIPATA WHEREAS IN OTHER DISTRICTS THE DISEASE WAS REPORTED LESS THAN 10 YEARS AGO.

AS A RESULT OF THIS DISEASE, SOME FARMERS HAVE ABANDONED BANANA GROWING ALTOGETHER. IN 2007, A SURVEY OF 20 FARMS COVERING ABOUT 212HA OF FARMS UNDER BANANA CULTIVATION IN CENTRAL AND COPPERBELT PROVINCES REVEALED A 65% INFECTION. IN 2010, A SURVEY IN LUSAKA PROVINCE (KAFUE, CHIAWA, CHIRUNDU AND LUSAKA DISTRICTS) SHOWED HIGH INCIDENCE OF BBTD. ALMOST ALL THE FARMS SURVEYED SHOWED SOME PRESENCE OF BBTD. IN LUSITU (SIAVONGA) AND KAPULULIRA SETTLEMENT (CHIRUNDU) AND MANY OTHER BANANA FIELDS OWNED BY SMALL-SCALE FARMERS THE DISEASE PRESSURE WAS VERY HIGH.

4.0 CONTROL MEASURES TAKEN BY GOVERNMENT

MR. SPEAKER

THE GOVERNMENT IS ENCOURAGING FARMERS TO FOLLOW SCIENTIFICALLY RECOGNISED BBTD CONTROL MEASURES. THESE INCLUDE:

- STRINGENT QUARANTINE (MOVEMENT OF DISEASED BANANA PLANTS) PROCEDURES. WHEN ADOPTED AND CAREFULLY PRACTICED THIS HAS THE POTENTIAL TO REDUCE THE RISK OF DISSEMINATING THE BUNCHY TOP VIRUS;
- ENCOURAGING FARMERS TO PLANT DISEASE FREE SUCKERS;
- ERADICATION OF THE DISEASED PLANTS;
- ALL DISEASED PLANTS SHOULD BE UPROOTED AND DESTROYED;
- EARLY BBTD SYMPTOM IDENTIFICATION, MARKING AND DESTRUCTION OF INFECTED MATS;
- CORRECT DISPOSAL OF DESTROYED PLANTS; AND
VECTOR (APHID) CONTROL BY SPRAYING AGAINST BANANA APHIDS USING DIMETHOATE OR KEROSENE OIL.

HOWEVER, THE CONTROL OF BBTD HAS A NUMBER OF CHALLENGES. THESE INCLUDE:

- LACK OF A RELIABLE SOURCE OF CHEAP BUT DISEASE FREE PLANTING MATERIALS;

- UNWILLINGNESS TO DESTROY DISEASED PLANTS. FARMERS WOULD RATHER MAINTAIN DISEASED PLANTS IN THEIR FIELDS THAN DESTROY THEM WHEN THERE IS NO ASSURED SOURCE OF NEW PLANTS; AND

- THE HIGH COST ASSOCIATED WITH SOME CONTROL MEASURES SUCH AS SPRAYING ESPECIALLY AMONG SMALL-SCALE FARMERS.

MR. SPEAKER

GOVERNMENT HAS FOR SOME TIME NOW BEEN ACTIVELY INVOLVED IN TRYING TO ADDRESS THE PROBLEM OF BBTD. MOST EFFORTS BY HAVE BEEN TARGETED AT:

1. UNDERTAKING SURVEYS TO UNDERSTAND THE DISTRIBUTION OF THE DISEASE IN ZAMBIA;

2. UNDERSTANDING THE MOST OBVIOUS MODE OF SPREAD OF THE DISEASE IN THE BANANA GROWING AREAS;

3. EMPOWERING FARMERS WITH KNOWLEDGE ON EARLY BBTD SYMPTOM DETECTION; AND

4. ENCOURAGING FARMERS TO APPLY RECOMMENDED DISEASE CONTROL MEASURES

AS INDICATED EARLIER, THE MOST LIKELY MODE OF DISSEMINATION OF BBTD IN ZAMBIA IS THROUGH PLANTING OF DISEASE MATERIALS. SURVEY RESULTS INDICATE THAT MOST FARMERS DO NOT HAVE A RELIABLE SOURCE OF ‘CLEAN’ PLANTING MATERIALS. FARMERS THEREFORE, EXCHANGE PLANTING MATERIALS WITHOUT PRIOR TESTING FOR BANANA BUNCHY TOP DISEASE. THE PROBLEM OF LACK OF A RELIABLE SOURCE OF PLANTING MATERIALS IN ZAMBIA HAS BEEN WORSENED BY THE HIGH COST OF IMPORTING CLEAN TISSUE CULTURED PLANTS FROM OUTSIDE THE COUNTRY. CURRENTLY, AMIRAN IS THE ONLY COMPANY WHICH IS IMPORTING TISSUE CULTURED BANANA PLANTS FROM OUTSIDE THE COUNTRY. THESE ARE HOWEVER, SUPPLIED TO COMMERCIAL FARMERS.
WHO CAN MEET THE COST OF THESE PLANTS. SMALL-SCALE FARMERS CANNOT AFFORD TO BUY THESE PANTING MATERIALS.

MR. SPEAKER

IN TRYING TO ADDRESS THE BANANA BUNCHY DISEASE SPREAD, GOVERNMENT HAS ALSO BEEN CARRYING OUT SENSITIZATION MEETINGS WITH FARMERS BOTH SMALL-SCALE AND LARGE SCALE. IN ADDITION, SURVEYS AND BROCHURES CONTAINING INFORMATION ON THE DISEASE CONTROL MEASURES HAVE BEEN DISTRIBUTED.

GOVERNMENT WITH ASSISTANCE FROM THE JAPANESE INTERNATIONAL COOPERATION AGENCY (JICA) HAS MODIFIED ONE OF THE BUILDINGS AT MOUNT MAKULU CENTRAL RESEARCH STATION INTO A TISSUE CULTURE FACILITY. THIS FACILITY WILL ENABLE MY MINISTRY TO PRODUCE DISEASE FREE TISSUE CULTURED BANANA PLANTS FOR DISTRIBUTION TO THE FARMING COMMUNITY. FURTHER, STAFF HAVE BEEN TRAINED IN TECHNIQUES THAT WILL ENABLE THEM PRODUCE DISEASE FREE PLANTING MATERIALS.

IN 2010, GOVERNMENT WITH CO-OPERATION FROM THE WORLD BANK UNDER THE AGRICULTURE DEVELOPMENT SUPPORT PROGRAMME (ADSP) AND FAO WAS ABLE TO;

I. STRENGTHEN FIELD AND LABORATORY DETECTION OF BBTV;
II. PRODUCE BROCHURES ON BBTD MANAGEMENT FOR DISTRIBUTION TO FARMERS;
III. CONDUCT TRAINING WORKSHOPS ON INTEGRATED PEST MANAGEMENT (IPM) FOR THE MANAGEMENT OF BBTD. A TRAINING WORKSHOP WAS ORGANIZED IN 2010 IN CHIWA AND LUSITU ON IDENTIFICATION AND CONTROL OF BBTD. THE WORKSHOP WAS ATTENDED BY A NUMBER BANANA FARMERS IN THE KAPULULIRA SETTLEMENT SCHEME IN CHIRUNDU, LUSITU IRRIGATION SCHEME AND CHIWA AREA; AND
IV. DEVELOP IPM STRATEGIES FOR BBTD MANAGEMENT.

MR. SPEAKER

GOVERNMENT THROUGH MY MINISTRY IS TAKING THE FOLLOWING MEASURES AS A WAY FORWARD FOR TACKLING THE BANANA BUNCH DISEASE:

A) ESTABLISHMENT OF A FARMER BASED BANANA SEED SYSTEM THROUGH PRODUCTION OF TISSUE CULTURED DISEASE-FREE
BANANA PLANTING MATERIALS. THE PLANTS PRODUCED WILL BE USED TO ESTABLISH PRIMARY NURSERIES. THIS WILL BE THE SOURCE OF PLANTING MATERIALS FOR DISTRIBUTION TO SMALL-SCALE FARMERS. FURTHER, THE ESTABLISHMENT OF A TISSUE CULTURE LABORATORY AT MOUNT MAKULU WILL PLAY A MAJOR ROLE IN THE PRODUCTION OF TISSUE CULTURED DISEASE-FREE BANANA PLANTS.

B) FARMERS WILL BE PERSUADED TO DESTROY DISEASED FIELDS FOLLOWED BY FALLOWING FOR 2-3 MONTHS, AND THEN REPLANTING WITH CERTIFIED DISEASE FREE PLANTING MATERIALS.

C) STRENGTHENING MONITORING OF THE RESURGENCE OF THE DISEASE AND IMPLEMENTATION OF EMERGENCE MEASURES TO AVERT RE-ESTABLISHMENT OF BBTD IN THE NEW FIELDS.

D) PUTTING IN PLACE AN EARLY WARNING SYSTEM FOR MONITORING BBTD IN ALL BANANA GROWING AREAS

5.0 CONCLUSION

MR. SPEAKER

IN CONCLUSION, IT IS IMPORTANT TO NOTE THAT THE BBTD CAN BE MANAGED. FARMERS HAVE TO MAINTAIN HYGIENE IN THEIR FIELDS, PLANT DISEASE FREE MATERIALS ERADICATE ALL DISEASED MATS AND WHERE POSSIBLE, SPRAY TO CONTROL THE APHIDS. GOVERNMENT WILL ALSO PLAY ITS PART IN ENSURING THAT THE PRODUCTION OF TISSUE CULTURED PLANTS IS PUT IN PLACE AND PROVIDE THE NECESSARY EXTENSION SERVICES TO FARMERS.

I THANK YOU
1. Banana aphid on leaf lamina
2. Banana aphids and ants on pseudostem
3. Severely diseased (BBTV) banana plants.
4. Healthy banana plant