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CHALLENGES OF QUALITY STANDARDS IN THE COCOA INDUSTRY

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1.0 INTRODUCTION

Quality determines the value placed on a product. Thus market determined premiums in commodity markets are based among other factors on quality perceptions. In cocoa, it is not just the perception, it is the reality. The different marketing systems we have today have often produced differential effects at assuring quality of produce. Ghana, however, has proved beyond all doubt that with effective and efficient structures in the marketing chain, quality of cocoa could be maintained and improved upon.

While the quality of Ghana's cocoa has been a benchmark for assessing cocoa from other origins in the trade, there are always new challenges as the demands of the market keep changing. This paper will seek to address some of the challenges we face in meeting international quality standards for dry cocoa beans.

1.1 INTERNATIONAL QUALITY STANDARDS

Among the set of regulations governing the international cocoa trade are the quality standards, standard delivery weights and the material for packaging. Ghana, as an origin of merchantable cocoa beans must conform to quality standards demanded by the trade.

This implies that the buyer, the cocoa processor and the chocolate manufacturer must be satisfied of the quality of produce that is delivered on the international market.

The required quality specifications of dry cocoa beans as stated in the sales contract include the following, among others:

(1) Superior Quality/Good Fermented: Cocoa should contain not more than 5% slaty beans and not more than 5% of all other defects.

(2) Fair Average Quality/Fair Fermented: Cocoa should contain not more than 10% of "all other defects." Mouldy, germinated, flat, insect attacked beans etc. are considered as "all other defects".

In all cases, bean count (i.e. the number of beans per 100gm wt.) should either be:

(i) Main Crop beans i.e. up to 100 beans/100gms.

(ii) Light Crop beans i.e. 101 – 120 beans/100 gms.

Other quality parameters covered in the sale contract documents are:

i. Uniformly fermented cocoa

ii. Dry beans – moisture content of 7.5%

iii. Uniform in size

iv. Homogeneous in all other respects and the parcel shall be:

(a) Fit for the production of a foodstuff

(b) Virtually free from foreign matter and adulteration, contamination, live insects (including mites) rodents or other types of infestation.

(c) Reasonably free from flat beans, germinated beans and residue.

2.0 PROBLEMS IN MEETING INTERNATIONAL QUALITY STANDARDS

As with any human undertaking, there are a number of problems which militate against the achievement of international quality standards. These problems can broadly be classified into two – natural factors and structural/financial factors.

2.1 NATURAL FACTORS

2.1.1 Effects of the Weather

Cocoa production in the country is small scale and rain-fed. The management of the country's vegetation or the environment therefore has marked effect on the weather. Under regimes of good rainfall distribution as well as good sunshine intensities, bean sizes are greatly improved. Erratic rainfall pattern and long spells of drought have often resulted in poor bean formation making it impossible to ensure the supply and delivery of cocoa of uniform bean sizes.

The mismanagement of the environment will adversely affect our desire to meet international quality standards in terms of uniformity of beans sizes. Bean size uniformity is an important element of cocoa quality as far as roasting of beans is concerned and irregular rainfall patterns pose a problem to our ability to meet this international standard.

Fat yield has a direct relationship to bean count and poor fat yield because of low bean count is a concern for the processor.

2.1.2 Sunshine and drying of cocoa beans

Ghana's cocoa beans are sun-dried. In areas of the country where heavy rainfall is abundant, farmers face the problem of inadequate sunshine for bean drying. Drying therefore takes a lot more time resulting in the production of off-flavored cocoa and unpolished (dark) chocolate brown cocoa. This is the case of cocoa produced in the West/Eastern Nzima districts.

A moisture content of 7.5% - 8% is indicative of proper drying. An important element of cocoa quality is the absence of mould development. Insufficient drying leads to the beans becoming mouldy both on the inside and the outside, which in turn lead to high free fatty levels and off -flavours.

2.2 STRUCTURAL /FINANCIAL FACTORS

The other set of problems which we have classified as structural/financial relate to the following.

2.2.1 Absence of direct extension services

Since 2000, COCOBOD has stopped the provision of input driven extension support to cocoa farmers. The result is that the farmer is often either left unattended to or has little extension support. It is our conviction that the pre and post harvest activities of farmers contribute to over 80% of the quality of the produce.

As we plan towards higher yields of cocoa using strategies such as control of pests and diseases and the "hi-tech" programme, the farmer obviously will have to be educated on the handling of high volumes of cocoa so that some of the cultural practices on fermentation which ensure good quality are not sacrificed.

2.2.2 Funding of Research Activities

The very existence of the industry is dependent among other things on efficient and effective research activities for both pre and post-harvest production stages. Cocoa Research Institute of Ghana (CRIG) is credited with a lot of good works achieved in the industry by way of research.

However, a greater part of the research funding has been sourced externally implying that the various agenda could be set from outside. Even though such funds have been sourced from external agencies, they have proved inadequate thus stalling the progress of research activities. Research should be given the required priority and the needed funding provided by producing countries themselves.

Research should not be simply an intellectual exercise but should seek to provide applicable solutions to specific quality problems. For instance, it is high time funds are provided for research into the production of bio-insecticides that leave no traces or residues in cocoa and also prove to be non-carcinogenic as is the case with many agrochemicals currently in use.

Providing well-equipped laboratories with adequate training for staff can go a long way in lending support to the quality improvement effort.

2.2.3 High Levels of Chemical Residues

Recently, there have been some complaints about high levels of chemical residues in cocoa beans in general. Our investigations, however, have proved that chemicals with high maximum residue levels (MRLS) are often the non-approved types and these have not been tested by CRIG.

These non-approved agrochemicals are meant for other crops. Unfortunately, they are openly displayed and sold to unsuspecting cocoa farmers. Our porous borders have also contributed to a situation where every agrochemical said to be a booster for cocoa production is allowed into the country. The Environmental Protection Agency (EPA) has also not developed the capacity to confiscate such unauthorized agrochemicals which hinder our efforts at meeting the new residue levels.

The high chemical residue levels could be solved by enforcing compliance with the adoption of good cultural practices, better and regular education of the farmers and the education of the retailers/distributors of the chemicals as well as training of spraying gangs in the proper application of chemicals.

2.2.4 Presence of Heavy Metals

Heavy metals such as lead and boron have been detected in cocoa and cocoa products. The source of these heavy metals is the soil. There is an absence of relevant equipment for the detection of such metals in the soil and cocoa beans. There is the need to effectively analyze the soil in the demarcated suitable areas of cocoa production where such metals are likely to exist and to prescribe means of neutralizing the effects of such metals.

2.2.5 Use of Jute Sacks for the Export of Cocoa

Studies have revealed that cocoa shipped in bulk poses no problem with infestation at ports of destination. The seams of the jute sacks have been the source of infestation in cases where the export of produce is done in jute sacks. This contributes to cases of re-fumigation at destination and therefore our inability to meet the standards.

Cultural practices in the fumigation of cocoa could be improved by using insecticides with long lasting effect on the seams of the bags to reduce infestation. There are occasions when exportable cocoa has been certified to be of wholesome quality on inspection just prior to shipment only to be reported by the buyer that the cocoa was infested or did not meet international quality standards upon arrival at the destination. Such cases could be due to cross-infestation.

2.2.6 Mode of Shipment

Cocoa beans are shipped from origin countries to various destinations designated by the buyers. Unfortunately, some destinations prefer the use of traditional ship holds for the import of cocoa beans. The use of ship holds especially for bagged cocoa exposes the cocoa to infestation of all kinds.

Rat infested ship holds encourage rat infestation where droppings and urine could contaminate the cocoa. The cocoa bean in such a hold is predisposed to insect cross infestation in cases where infested produce are in close proximity.

3.0 CHALLENGES IN MEETING INTERNATIONAL QUALITY STANDARDS

Ghana has over the years produced well fermented cocoa that attracts a high premium. It is important that we maintain the confidence and trust of our external and local buyers. The biggest challenge is to ensure consistency in the quality of cocoa that is supplied. This implies that cocoa farmers must continue not only to adhere to and adopt good agronomic practices but improve upon whatever good cultural practices they are currently applying.

Good Agricultural Practices include among others the following:

i. Choice of good soil to enhance plant establishment
ii. Good land preparation and soil fertility maintenance
iii. Use of prescribed planting material
iv. Low shading to enhance plant establishment
v. Regular and proper weed control
vi. Adopting the right spacing in planting
vii. Thinning out of the plant to ensure the recommended spacing for good aeration
viii. Pruning of the matured plants
ix. Control of diseases, pest, parasites etc.
x. Provision of wind breaks
xi. Harvesting of ripe pods regularly
xii. Breaking the harvested pods at the right time with little or no damage to the beans
xiii. Fermenting the beans in the prescribed manner and for the recommended duration of the fermentation process
xiv. Sun-drying the beans on a raised platform for at least 10 days of good sunshine regime
xv. Polishing and spreading out the beans during drying and picking out the black/defective, and flat beans

xvi. Beans that have fallen through the members of the mat need not be collected and added to the beans on the mat

xvii. Dry beans should not be stored in infested receptacles/bags/materials and should not be in close proximity to sources of smoke

xviii. Beans for sale should be thoroughly dry, of 7.5% moisture content and kept in clean 'B' twill food grade sacks.

xix. Proper post-harvesting warehousing management and pest control practices.

Farmers should regularly be educated on good cultural practices and such practices passed over to succeeding generations.

3.1 COMMITTED QUALITY CONTROL PERSONNEL

For Ghana to consistently produce high premium cocoa, the quality control personnel should be dedicated, loyal, motivated and well trained. The challenge therefore is to ensure that the quality control personnel live above reproach in order to offer dedicated and loyal services. A truly professional quality assurance team is what is required.

This will avoid the certification of poor quality produce as good and ensure that relevant regulations and guidelines on quality of the produce are strictly enforced so that exports of cocoa meet the set international standards. Capacity of the quality control personnel through staff training is one way on maintaining product quality.

3.2 STAFF LOYALTY, HONESTY AND DEDICATION

Our quality control system is such that most of the activities are labour intensive. Most private operators in the industry are profit-oriented and most are prepared to cut corners to make their margins by using some staff within the industry to cheat the system.

Despite the existence of appropriate sanctions to discourage malpractices, it is better to motivate the staff to win their loyalty and support for them to perform their functions diligently.

3.2 UNIFORMITY IN QUALITY STANDARDS

In recent times, the greatest challenge is meeting the different requirements of the various cocoa consuming blocks with respect to residue levels in cocoa beans. African countries should use the forum of the ICCO and the FAO to demand a harmonization of the quality standards especially those pertaining to residue levels.

4.0 CONCLUSION

In Ghana, quality assurance activities have strictly followed all promulgated laws and legislative instruments together with administrative directives which appear even higher in standard than what pertains in the trade. The three quality checks in the value chain are for the confirmation of quality specifications. Similarly, the use of appropriate insecticides/agrochemicals to control infestation at recommended dosages is meant not only to reduce post-harvest losses but also to ensure the safety of the produce from insect damage.

Mr. Chairman, Ladies and Gentlemen, the quality specifications being demanded by our partners put enormous burden on the local operators of the Industry. It is however, unfortunate that prices and premiums for cocoa are not commensurate with the efforts put in to produce top quality produce. Prices of cocoa should not only relate to supply and demand but more especially to the quality of the produce.

Agro-chemical residue issues have become topical of late. COCOBOD, in living up to the challenge, has initiated steps to set up three laboratories at the Cocoa take-over centres, i.e. Kaase in Kumasi, Takoradi and Tema Ports and in addition, re-equip our research institute, CRIG to be able to conduct analyses of chemical residues and issue certificates thereon. International harmonization of quality standards instead of country-specific quality requirements could be an opportunity for us to meet international quality standards.

Thank you for attention.