



International Coffee Organization  
Organización Internacional del Café  
Organização Internacional do Café  
Organisation Internationale du Café

EB 3948/08

15 May 2008  
Original: English

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Executive Board  
267<sup>th</sup> Meeting  
20 and 22 May 2008  
London, England

**Responses to the survey on coffee pests  
and diseases**

## **Background**

In August 2007 and February 2008, in the light of concerns raised by Members during Council sessions about the proliferation of pests and diseases affecting coffee, the Executive Director circulated documents ED-2020/07 and ED-2020/07 Rev. 1, inviting Members to complete and return a questionnaire on four leading coffee pests and diseases (coffee berry borer, coffee leaf rust, white stem borer and coffee wilt disease – tracheomyces). This document contains a summary of responses received from 20 Members, representing close to 75% of world production.

## **Action**

The Board is requested to consider this report.

## **RESPONSES TO THE SURVEY ON COFFEE PESTS AND DISEASES**

### **I. Summary of results**

#### **1. Coffee berry borer**

The coffee berry borer (CBB) is clearly the most prevalent pest among the 20 countries responding to the questionnaire, with 14 countries considering it a problem and 3 a major problem. Only one country (Malawi) reports an absence of CBB. The situation is stable in the Americas, with the exception of Colombia and Panama where deterioration is reported. In Africa, most respondents report that the situation is getting worse or much worse, with only Ghana, Kenya, Tanzania and Togo considering it stable.

Control measures are considered to be effective in the Americas, with the exception of Mexico (ineffective) and Panama (non-existent). In contrast, four African countries see them as ineffective (D.R. Congo, Kenya, Tanzania and Togo) and four others state they are non-existent (Central African Republic, Côte d'Ivoire, Ghana and Malawi). Vietnam equally reported ineffective farmer measures. Similarly, knowledge about the disease is regarded as good or fair in the Americas, whereas it is seen as poor in all African countries and Vietnam, with the exception of Cameroon and Central African Republic, where it is classified as good, and Côte d'Ivoire and Togo, where it is considered fair.

National coffee institutions in the Americas are believed to be coping well in half the countries, and not very well in Brazil, Mexico, Nicaragua and Panama. A similar picture comes across in Africa, where Cameroon, Kenya and Togo give a good rating to their local institutions, while D.R. Congo, Côte d'Ivoire, Ghana and Tanzania rate their performance as not very effective. When it comes to international cooperation, only five countries have a positive evaluation, whereas ten producing nations across all continents consider it as not very good or even poor. Of the top five producers, only Vietnam seems satisfied with international response to this problem.

With regard to the response of farmers after infestation, D.R. Congo, Côte d'Ivoire and Jamaica report they are unlikely to take any measures to combat the disease, with Tanzania also informing that some farmers are likely to abandon coffee cultivation entirely once struck by CBB. Countries in the Americas have all adopted an integrated pest management (IPM) approach, with the exception of Brazil which emphasizes the use of chemical controls.

See Annex 1 for more detailed information on responses to the survey on coffee berry borer.

## **2. Coffee leaf rust**

Coffee leaf rust is reported as the second most troubling plant health issue in the survey. It is either a problem or present in all countries of the Americas, and a problem or a major problem in all but one African country, since only the Central African Republic seems free from this disease. This disease is reported as a problem for Vietnam as well.

In the Americas the situation seems to be generally stable, with the exception of Brazil where it has worsened. However, in Africa incidence of the disease has aggravated in three countries (D.R. Congo, Kenya and Tanzania) and become much worse in two others (Cameroon and Malawi). Only Côte d'Ivoire and Ghana report a stable scenario.

In keeping with the previous results, farmers in the Americas consider their actions as effective, with the exception of Mexico that sees them as ineffective. African countries rate farmers' actions to be ineffective or non-existent in all cases, as occurs in Vietnam. Along the same lines, farmers in the Americas are reported to have fair or good knowledge about the disease, with the exception of Panama where it is poor. Only two African countries (Cameroon and Tanzania) report good knowledge, with the rest considering it fair or poor. Vietnam indicates that farmer knowledge of coffee leaf rust is fair.

The evaluation of African coffee institutions is mixed: they are not considered to be coping very well in D.R. Congo, Côte d'Ivoire, Ghana, Kenya and Malawi, while the situation in Cameroon and Tanzania is considered to be good. Meanwhile, coffee institutions in the Americas are considered well prepared, with the exception of Mexico. Vietnam also considers its national institutions to be well prepared. In terms of international cooperation, only Colombia, Ecuador, Honduras, Jamaica and Kenya deem it satisfactory.

Most countries in the Americas adopt either an IPM approach or chemical controls when dealing with the disease, with the exception of Colombia that is introducing resistant varieties. No African country seems to be adopting IPM; they either use chemical controls (D.R. Congo, Ghana, Kenya, and Tanzania) or do not take any measures at all (Cameroon, Côte d'Ivoire, Malawi and Togo).

See Annex 2 for more detailed information on responses to the survey on coffee leaf rust.

## **3. White stem borer**

The white stem borer is not seen as a problem in countries in the Americas, though it is present in El Salvador, Honduras, Jamaica and Mexico. Vietnam also reports the presence of this pest, but does not view it as a problem. However, it is deemed a major problem for two African countries (Cameroon and D.R. Congo), a problem in Kenya, Malawi and

Tanzania and present in all African countries except Ghana. Worryingly, the disease has worsened in most affected African countries in recent years, with the exception of Central African Republic, Côte d'Ivoire and Kenya, where it is considered to be stable.

Measures taken by farmers are accordingly classified as ineffective in most of the affected African countries, in spite of two of them (Cameroon and Malawi) reporting good knowledge of the pest. In addition, farmers are reported as taking no mitigating measures in the Central African Republic, Côte d'Ivoire and Mexico.

National coffee institutions in countries where white stem borer is considered a problem are not seen as coping well with the problem, with the exception of Cameroon, Jamaica, Kenya and Vietnam. In those cases where it is considered applicable, similar results are reported with respect to international cooperation, with the exception of Malawi and Vietnam that report positive outcomes.

Of particular concern is the fact that two of the affected countries (Malawi and Tanzania) report that farmers are likely to abandon coffee cultivation when faced with the white stem borer, and those in D.R. Congo, Côte d'Ivoire, Mexico, Nicaragua, Panama, Tanzania and Togo are seen as taking no control measures. On the other hand, growers in Cameroon, Central African Republic, El Salvador, Honduras, Jamaica, Kenya and Vietnam are described as resorting to the use of chemical controls.

See Annex 3 for more detailed information on responses to the survey on white stem borer.

#### **4. Coffee wilt disease – tracheomyces**

Countries in the Americas describe a stable or improving situation, and none of them consider it a problem, though its presence is reported in Jamaica and Mexico. The disease is, however, a major problem in D.R. Congo and Tanzania and a problem in Cameroon. Over recent years the situation has actually deteriorated in three African countries (Cameroon, Central African Republic and D.R. Congo) and remained roughly unchanged in another (Tanzania). It is also reported as stable in Jamaica and Mexico. Knowledge of most farmers on this pest is only good in Cameroon and Malawi, fair in D.R. Congo and Jamaica and poor in Mexico and Tanzania. Paradoxically, actions taken at the farm level and by national coffee institutions are reported as being effective, with the exception of D.R. Congo for the latter. International cooperation is evaluated as good only in D.R. Congo and Malawi, not very good in Cameroon and Tanzania and poor in Mexico.

Farmers are likely either to do nothing after the disease strikes (Kenya, Mexico, Nicaragua and Panama), replant with Robusta (Cameroon, Central African Republic, D.R. Congo and Tanzania) or replant with Arabica (Cameroon and D.R. Congo). Only Malawi and Togo have adopted an IPM strategy.

See Annex 4 for more detailed information on responses to the survey on coffee wilt disease – tracheomyces.

## **5. Overall self-assessment**

All countries agree these pests and diseases affect the entire coffee sector, and all but three assess the future of their coffee industry as optimistic. The three countries that did not, Côte d’Ivoire, Ghana and Mexico, view it as “so-so”.

See Annex 5 for more detailed information on responses to questions on overall self-assessment.

## **II. Recommendations proposed by surveyed countries in dealing with:**

### **Coffee berry borer**

- Increased research and technology transfer (Brazil, Costa Rica, El Salvador and Nicaragua)
- Capacity building, timely access to resources (Ecuador and Mexico)
- Increased use of IPM (Brazil, Cameroon, D.R. Congo, Côte d’Ivoire, El Salvador, Kenya, Panama and Tanzania)
- Use of pest-resistant coffee trees (Central African Republic and D.R. Congo)
- Improved coffee harvesting processes in order to reduce the number of coffee beans infested with the pest (Colombia)
- Greater emphasis on post-harvest sanitation (Jamaica)
- Dissemination of in-house agro-ecological pest control techniques (Togo)
- Incorporate the use of *B. Bassana* (Honduras)

### **Coffee leaf rust**

- Increased research (Costa Rica, Nicaragua and Tanzania) and technology transfer (Ecuador)
- Capacity building (El Salvador)
- Use of IPM (Mexico)
- Use of pest-resistant coffee trees (Brazil, Central African Republic, Colombia, Côte d’Ivoire, Ghana, Honduras, Kenya, Mexico, Panama and Togo)
- Enhanced environmental conditions so as to reduce the capacity of the spore to germinate and survive (Jamaica)
- Study vertical resistance (Honduras)

### **White stem borer**

- Phytosanitary measures, including quarantines and improved border control management (Central African Republic, Ecuador and Panama)
- Capacity building (Mexico)
- Use of IPM (Cameroon, Ghana, Kenya, Malawi and Tanzania)
- Increased research on adoption of IPM (Côte d'Ivoire, El Salvador and Nicaragua)
- Greater regulation of climatic factors, particularly sunlight, through the use of more shade (Jamaica)
- Identify areas economically affected by the pest and conduct research for its control (Honduras)

### **Coffee wilt disease – tracheomyces**

- Phytosanitary measures, including quarantines and improved border control management (Costa Rica, Côte d'Ivoire, Kenya, Mexico and Tanzania)
- Capacity building and research (El Salvador and Ghana)
- Conduct a survey to determine the presence of parasites (Honduras)
- Removal of infected trees and replacement by new ones (Cameroon and Tanzania)
- Use of pest-resistant coffee trees (D.R. Congo and Togo)
- Greater understanding of the causes of the disease (Jamaica)
- Information campaign on the plague and training of technical staff (Côte d'Ivoire and Nicaragua)

### **III. Conclusions**

The most serious threat to the health of coffee plantations across the spectrum comes from the **coffee berry borer**. Its pervasive effects are more acutely felt in African countries, where insufficient resources have aggravated the problem in recent years.

Overall, countries in the Americas are reported as being in better shape to face the challenges of adopting an effective IPM strategy, with the possible exception of Mexico. Not surprisingly, it is the only country in that region to view the future of its coffee sector as “so-so”. Honduras pointed out the presence of other pests and diseases in their coffee trees such as *C. koleroga* and *M. citricolor* that deserve attention.

African countries, on the other hand, face major difficulties in effectively combating pests and diseases. Ineffective coffee institutions and lack of adequate information are reported as prevalent in the region. In terms of corrective measures, most countries emphasize that capacity building is fundamental for the adoption of an IPM approach.

The evaluation of the effectiveness of national institutions and international cooperation does not present a clear picture and requires further investigation. For example, with respect to the white stem borer and coffee wilt disease (tracheomyces), a significant majority of replies said that such work was “not applicable”, raising the question of whether the activities of national institutions and international cooperation are not relevant in these specific cases or if they are simply not present. In the case of coffee berry borer and coffee leaf rust, the evaluation of national institutions is divided almost equally between those who are considered to be doing well and those who are performing not very well/poorly. For these two threats to coffee cultivation, the effects of international cooperation are considered to be limited, which may indicate the need for enhanced dissemination of the results of relevant projects.

## ANNEX 1

## COFFEE BERRY BORER

## 1.1 Coffee Berry Borer is in your country:

A major problem	3	Cameroon, D.R. Congo, Jamaica
A problem	14	Brazil, Colombia, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Ghana, Honduras, Kenya, Mexico, Nicaragua, Panama, Togo, Vietnam
Present	2	Central African Republic, Tanzania
Not present	1	Malawi

## 1.2 In the past 3 to 5 years, the problem has got:

Much worse	1	Cameroon
Worse	5	Central African Republic, Colombia, D.R. Congo, Côte d'Ivoire, Panama
About the same	11	Brazil, Costa Rica, Ecuador, El Salvador, Ghana, Jamaica, Kenya, Mexico, Nicaragua, Tanzania, Togo
Better	2	Honduras, Vietnam
Not applicable	1	Malawi

## 1.3 The actions taken by most farmers to control the pests and diseases are:

Effective	8	Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Jamaica, Nicaragua
Ineffective	6	D.R. Congo, Kenya, Mexico, Tanzania, Togo, Vietnam
Non-existent	5	Central African Republic, Côte d'Ivoire, Ghana, Malawi, Panama
Not applicable	1	Cameroon

## 1.4 The knowledge of most farmers of the pests or diseases is:

Good	8	Cameroon, Central African Republic, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Jamaica,
Fair	6	Brazil, Côte d'Ivoire, Mexico, Nicaragua, Panama, Togo
Poor	5	D.R. Congo, Ghana, Kenya, Tanzania, Vietnam
Not applicable	1	Malawi

## 1.5 National coffee institutions are coping with the problems:

Well	10	Cameroon, Colombia, Costa Rica, Ecuador, El Salvador, Kenya, Honduras, Jamaica, Togo, Vietnam
Not very well	8	Brazil, D.R. Congo, Côte d'Ivoire, Ghana, Mexico, Nicaragua, Panama, Tanzania
Poorly	0	
Not applicable	2	Central African Republic, Malawi

## 1.6 International cooperation is coping with the problems:

Well	5	Ecuador, El Salvador, Honduras, Jamaica, Vietnam
Not very well	7	Cameroon, Colombia, D.R. Congo, Nicaragua, Panama, Tanzania, Togo
Poorly	3	Brazil, Côte d'Ivoire, Mexico
Not applicable	5	Central African Republic, Costa Rica, Ghana, Kenya, Malawi

## 1.7 After any of these pests and diseases affect a farm, farmers are likely to:

Do nothing	3	D.R. Congo, Côte d'Ivoire, Jamaica
Abandon coffee growing	1	Tanzania
Replant with Robusta	0	
Replant with Arabica	0	
Use chemical control	5	Brazil, Cameroon, Central African Republic, Kenya, Togo
Adopt IPM	11	Colombia, Costa Rica, Ecuador, El Salvador, Ghana, Honduras, Jamaica, Mexico, Nicaragua, Panama, Vietnam



## COFFEE LEAF RUST

### 2.1 Coffee Leaf Rust is in your country:

A major problem	5	Brazil, D.R. Congo, Ghana, Malawi, Tanzania
A problem	9	Cameroon, Colombia, Costa Rica, El Salvador, Honduras, Jamaica, Kenya, Nicaragua, Vietnam
Present	5	Côte d'Ivoire, Ecuador, Mexico, Panama, Togo
Not present	1	Central African Republic

### 2.2 In the past 3 to 5 years, the problem has got:

Much worse	2	Cameroon, Malawi
Worse	4	Brazil, D.R. Congo, Kenya, Tanzania
About the same	10	Colombia, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Ghana, Honduras, Jamaica, Mexico, Panama
Better	1	Nicaragua
Not applicable	3	Central African Republic, Togo, Vietnam

### 2.3 The actions taken by most farmers to control the pests and diseases are:

Effective	8	Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Jamaica, Nicaragua
Ineffective	7	D.R. Congo, Ghana, Kenya, Malawi, Mexico, Tanzania, Vietnam
Non-existent	2	Côte d'Ivoire, Panama
Not applicable	3	Central African Republic, Cameroon, Togo

### 2.4 The knowledge of most farmers of the pests or diseases is:

Good	9	Brazil, Cameroon, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Jamaica, Tanzania
Fair	5	Kenya, Malawi, Mexico, Nicaragua, Vietnam
Poor	4	D.R. Congo, Côte d'Ivoire, Ghana, Panama
Not applicable	2	Central African Republic, Togo

### 2.5 National coffee institutions are coping with the problems:

Well	8	Cameroon, Colombia, Costa Rica, Ecuador, Honduras, Jamaica, Tanzania, Vietnam
Not very well	8	Brazil, D.R. Congo, Côte d'Ivoire, Ghana, Kenya, Malawi, Mexico, Nicaragua
Poorly	0	
Not applicable	4	Central African Republic, El Salvador, Panama, Togo

### 2.6 International cooperation is coping with the problems:

Well	5	Colombia, Ecuador, Honduras, Jamaica, Kenya
Not very well	6	Cameroon, D.R. Congo, Malawi, Nicaragua, Tanzania, Vietnam
Poorly	3	Brazil, Côte d'Ivoire, Mexico
Not applicable	6	Central African Republic, Costa Rica, El Salvador, Ghana, Panama, Togo

### 2.7 After any of these pests and diseases affect a farm, farmers are likely to:

Do nothing	5	Cameroon, Côte d'Ivoire, Malawi, Panama, Togo
Abandon coffee growing	1	Vietnam
Replant with Robusta	0	
Replant with Arabica	0	
Use chemical control	8	Brazil, D.R. Congo, Ghana, Jamaica, Kenya, Mexico, Panama, Tanzania
Adopt IPM	5	Costa Rica, Ecuador, El Salvador, Honduras, Nicaragua

## ANNEX 3

**WHITE STEM BORER****3.1 White Stem Borer is in your country:**

A major problem	2	Cameroon, D.R. Congo
A problem	3	Kenya, Malawi, Tanzania
Present	8	Central African Republic, Côte d'Ivoire, El Salvador, Honduras, Jamaica, Mexico, Togo, Vietnam
Not present	7	Brazil, Colombia, Costa Rica, Ecuador, Ghana, Nicaragua, Panama

**3.2 In the past 3 to 5 years, the problem has got:**

Much worse	1	Cameroon
Worse	5	D.R. Congo, El Salvador, Malawi, Tanzania, Vietnam
About the same	5	Central African Republic, Côte d'Ivoire, Jamaica, Kenya, Mexico
Better	0	
Not applicable	9	Brazil, Colombia, Costa Rica, Ecuador, Ghana, Honduras, Nicaragua, Panama, Togo

**3.3 The actions taken by most farmers to control the pests and diseases are:**

Effective	3	El Salvador, Jamaica, Malawi
Ineffective	4	D.R. Congo, Kenya, Tanzania, Vietnam
Non-existent	3	Central African Republic
Not applicable	10	Brazil, Cameroon, Colombia, Costa Rica, Ecuador, Ghana, Honduras, Nicaragua, Panama, Togo

**3.4 The knowledge of most farmers of the pests or diseases is:**

Good	3	Cameroon, Central African Republic, Malawi
Fair	2	El Salvador, Tanzania
Poor	7	D.R. Congo, Côte d'Ivoire, Jamaica, Kenya, Mexico, Togo, Vietnam
Not applicable	8	Brazil, Colombia, Costa Rica, Ecuador, Ghana, Honduras, Nicaragua, Panama

**3.5 National coffee institutions are coping with the problems:**

Well	4	Cameroon, Jamaica, Kenya, Vietnam
Not very well	5	D.R. Congo, Côte d'Ivoire, El Salvador, Malawi, Tanzania
Poorly	0	
Not applicable	11	Brazil, Central African Republic, Colombia, Costa Rica, Ecuador, Ghana, Honduras, Mexico, Nicaragua, Panama, Togo

**3.6 International cooperation is coping with the problems:**

Well	2	Malawi, Vietnam
Not very well	3	Cameroon, D.R. Congo, Tanzania
Poorly	3	Côte d'Ivoire, El Salvador, Mexico
Not applicable	12	Brazil, Central African Republic, Colombia, Costa Rica, Ecuador, Ghana, Honduras, Jamaica, Kenya, Nicaragua, Panama, Togo

**3.7 After any of these pests and diseases affect a farm, farmers are likely to:**

Do nothing	6	D.R. Congo, Côte d'Ivoire, Mexico, Nicaragua, Panama, Togo
Abandon coffee growing	2	Malawi, Tanzania
Replant with Robusta	0	
Replant with Arabica	0	
Use chemical control	6	Cameroon, Central African Republic, El Salvador, Honduras, Jamaica, Kenya
Adopt IPM	1	Vietnam

## COFFEE WILT DISEASE (TRACHEOMYCOSIS)

### 4.1 Coffee Wilt - Tracheomyces is in your country:

A major problem	2	D.R. Congo, Tanzania
A problem	1	Cameroon
Present	3	Ghana, Jamaica, Mexico
Not present	14	Brazil, Central African Republic, Colombia, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Honduras, Kenya, Malawi, Nicaragua, Panama, Togo, Vietnam

### 4.2 In the past 3 to 5 years, the problem has got:

Much worse	1	Cameroon
Worse	2	Central African Republic, D.R. Congo
About the same	3	Jamaica, Mexico, Tanzania
Better	1	Malawi
Not applicable	13	Brazil, Colombia, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Ghana, Honduras, Kenya, Nicaragua, Panama, Togo, Vietnam

### 4.3 The actions taken by most farmers to control the pests and diseases are:

Effective	4	D.R. Congo, Jamaica, Malawi, Tanzania
Ineffective	0	
Non-existent	1	Mexico
Not applicable	15	Brazil, Cameroon, Central African Republic, Colombia, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Ghana, Honduras, Kenya, Nicaragua, Panama, Togo, Vietnam

### 4.4 The knowledge of most farmers of the pests or diseases is:

Good	2	Cameroon, Malawi
Fair	2	D.R. Congo, Jamaica
Poor	2	Mexico, Tanzania
Not applicable	14	Brazil, Central African Republic, Colombia, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Ghana, Honduras, Kenya, Nicaragua, Panama, Togo, Vietnam

### 4.5 National coffee institutions are coping with the problems:

Well	4	Cameroon, Jamaica, Malawi, Tanzania
Not very well	1	D.R. Congo
Poorly	0	
Not applicable	15	Brazil, Central African Republic, Colombia, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Ghana, Honduras, Kenya, Mexico, Nicaragua, Panama, Togo, Vietnam

### 4.6 International cooperation is coping with the problems:

Well	2	D.R. Congo, Malawi
Not very well	2	Cameroon, Tanzania
Poorly	1	Mexico
Not applicable	15	Brazil, Central African Republic, Colombia, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Ghana, Honduras, Jamaica, Kenya, Nicaragua, Panama, Togo, Vietnam

### 4.7 After any of these pests and diseases affect a farm, farmers are likely to:

Do nothing	4	Kenya, Mexico, Nicaragua, Panama
Abandon coffee growing	1	Côte d'Ivoire
Replant with Robusta	4	Cameroon, Central African Republic, D.R. Congo, Tanzania
Replant with Arabica	2	Cameroon, D.R. Congo
Use chemical control	1	Jamaica
Adopt IPM	2	Malawi, Togo

**OVERALL SELF-ASSESSMENT****5.1 The sectors more affected are:**

Large plantations	1	Malawi
Small holders	4	Côte d'Ivoire, Malawi, Togo, Vietnam
Everyone	15	Brazil, Cameroon, Central African Republic, Colombia, D.R. Congo, Costa Rica, Ecuador, El Salvador, Ghana, Honduras, Jamaica, Kenya, Nicaragua, Panama, Tanzania
Not applicable	0	

**5.2 Your assessment of the future of coffee growing in your country is:**

Optimistic	17	Brazil, Cameroon, Central African Republic, Colombia, D.R. Congo, Costa Rica, Ecuador, El Salvador, Honduras, Jamaica, Kenya, Malawi, Nicaragua, Panama, Tanzania, Togo, Vietnam
So-so	3	Côte d'Ivoire, Ghana, Mexico
Pessimistic	0	