



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

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**Improvement of coffee quality and  
prevention of mould formation in Vietnam**

1. The Executive Director presents his compliments and for the information of Members, attaches a copy of the final report of the project “Improvement of Coffee Quality and Prevention of Mould Formation and OTA Contamination of Coffee in Vietnam.”
2. The project was supported by the Organization in the context of the larger project for the prevention of mould formation also managed by the FAO (see document ICC-94-7 for the latest progress report).

## **Finalized Report of the Project TCP/VIE/2903 (A)**

### **“Improvement of coffee quality and prevention of mould formation and Ochratoxin A (OTA) contamination of coffee in Vietnam”**

#### **I. General introduction of the Project:**

Until now the post harvest processing for coffee still remains a weak point of Vietnam's coffee industry. With farming households accounting for more than 80 per cent of the total coffee production, widespread training is required to ensure proper harvesting and drying of coffee. Ripe and green cherries are mixed during harvesting, drying yards are often not adequate for handling the required volumes of coffee, so coffee has to be dried in thick layers on the open ground. This often results in poor quality, wet and mouldy beans and Ochratoxin A (OTA) contamination.

In the years 1996 – 1998, there were extended rains lasting until the end of December in the western Highlands, where nearly 90 per cent of coffee is produced. This caused a lot of difficulties in drying coffee. If coffee is not well dried, it is highly susceptible to mould growth. This problem has occurred in many of the coffee producing countries in the world. Mouldy coffee apart from being unacceptable to buyers because of off-tastes and bad aromas, may contain OTA (an aflatoxin), which is a serious health hazard. OTA residues are now being closely monitored in coffee in the world markets and minimal residue levels are leading to rejection.

The potential economic impact of OTA is huge. It is estimated that if a rejection level of 5µg/kg (5ppb), a level currently under discussion by the EU, was implemented, then between 2 and 18 per cent of coffee could be rejected. If 7 per cent of total export quantity was to be rejected, exporting countries would suffer losses of US\$1 billion per year, and in the EU alone the losses would amount to US\$500 million. Such an impact on smallholders and exporting countries would be most severe.

The problem of mould formation and OTA contamination of coffee has been mentioned for many years. Vietnam is now an official Member of the International Coffee Organization (ICO). However, because Vietnam is not a CFC member (Common Fund for Commodities) it could not be supported to implement the OTA project at the beginning with countries like Brazil, Colombia, Indonesia etc... although Vietnam stands in the second rank of coffee producers and in the first rank of Robusta coffee producers in the world.

After diligent recommendation of VICOFA and with the help of the head of the ICO, and great concern of some institutions of the Vietnamese Government and FAO office in Vietnam, the document for project TCP/VIE/2903 (A) was signed on February 14, 2003 by the Government of Vietnam and the Food and Agriculture Organization of the United Nations.

To effectively implement the project, decision No. 374/QD/BNN – TCCB dated 14 Feb 2003 was signed by the Minister of Agriculture and Rural Development to establish the project Steering Committee. Dr. Le Van Bam, Deputy Head of the Department of Science industry and agricultural product quality was appointed as the head of the project Steering Committee.

As there was a delay in establishing the Steering Committee, the starting date for implementing the project was also almost half a year late. The project was to have been completed by August 2004, but in fact the project implementation continued until early April 2005.

## **II. Implementation results of the project**

Nine Experts participated in the implementation of the project

1) International experts:

- Mr. Keith Chapman – Industrial crops officer, FAO office (Asia and Pacific area)
- Mr. M. Frank – Expert in Mycotoxin and OTA
- Mr. Anthony Marsh – Expert in coffee quality and processing
- Mr. Daniel Duris – Expert on coffee quality (CIRAD)
- Miss Renata Clark – Expert on OTA (FAO, Rome)
- Mr. Jacques op de laak – retired, Expert in agricultural production and processing

2) National experts: four national experts were assigned as follows:

- Dr. Nguyen Van Thuong: focus on coffee processing of the project in general
- Dr. Tran Kim Loang of WASI: Expert in plant protection and Mycotoxin
- Dr. Le Anh Tuan of CAFECONTROL: Expert responsible for quality control of coffee
- Bsc Bach Anh Tuan of CAFECONTROL: Expert in agricultural product control of Western Highland provinces.

3) Two workshops on “Improvement of coffee quality and prevention of mould formation and Ochratoxin A (OTA) contamination of coffee in Vietnam” with the participation of relevant institutions of the Government, business enterprises, and coffee producers, processors, exporters etc., were organized as follows:

- The first workshop was organized in Hanoi on 17 July 2003
- The second workshop was organized in HCM City on 17 October 2003

International experts presented their reports on OTA in general and OTA in coffee in particular in these workshops mentioned above.

- 4) Five training courses on improvement of coffee quality, food hygiene legislation (HACCP); of which, three were organized for the Training of Trainers (ToT), the other two for the Training of Farmers (ToF); 124 participants participated in these courses mentioned above

The first ToT course was organized in Buon Me Thuot and taught by international experts.

The second ToT course was organized in Nghia Dan District, Nghe An province.

The third ToT course was organized in Bao Loc town, Lam Dong province.

The second and the third ToT courses were taught by Vietnamese lecturers.

64 trainers were trained in these three courses. They are technical officers and they work as extension workers in the local offices and in different scientific institutions.

- 5) The international experts were organized to examine the practical situation in coffee production and processing in some provinces such as Son La and Daklak, and some scientific research institutions of coffee such as WASI, Ba Vi coffee research Centre....

After these trips; back to office reports were written, all of which have abundant and useful information.

- 6) Four technical officers were sent abroad for a study tour and training; of which:
  - Two officers were sent to India for a study tour in coffee processing, agricultural practices (one from WASI, the other one from CAFECONTROL)
  - Two were sent to CIRAD in France to learn analysis of OTA (one comes from WASI and the other one comes from CAFECONTROL)
- 7) Equipment and chemicals were procured for WASI and CAFECONTROL to facilitate study and analysis of OTA
- 8) Some experiments on coffee processing, drying etc were organized at WASI
- 9) Two sets of materials have been written for teaching the training courses

### **III. Work to be continued when the project finishes**

- 1) It is necessary to continue to assess on a large scale the coffee situation in the field in all coffee producing provinces and to introduce proper, strong procedures in preventing mould formation and OTA contamination of coffee; to minimize the negative impact of mould and OTA to export coffee in Vietnam.

- 2) There is a need to supply more equipment and chemicals for the laboratories of CAFECONTROL and WASI to test OTA and coffee mould in all of the coffee fields in time to avoid losses caused by mould and OTA contamination.
- 3) Strengthen the research ability of Ba Vi CRC; VICOPEX, WASI and CAFECONTROL to implement the goals gained from the project in the future.
- 4) To transfer the technical results and experiences obtained from the project to coffee producers, processors and exporters.

#### **IV. Experiences drawn from implementation of the project**

Conditions needing to be met to implement the project effectively:

- 1) The content of the project is urgently required for production.
- 2) A specialized branch which directly relates to production must be assigned to implement the project (such as coffee branch – VICOFA).
- 3) Some key institutions must take upon themselves the responsibility for implementation of the project (for example WASI and CAFECONTROL).
- 4) A good team of officers with high capability and enthusiasm to implement the project.

#### **V. Proposals**

After the project finishes, there is a need to request the Ministry of Agriculture and Rural Development to supply concrete guidance in implementing all the work mentioned in the project. The standards of product quality, food hygiene and HACCP must be put into practice by the Government. We also propose that the Ministry of Agriculture and Rural Development should create good conditions for VICOFA to complete all of the work for the project.

On behalf of the Administration Board

(signed) Doan Trieu Nhan  
Vice Chairman of VICOFA