PCDD/F ANALYSIS FROM 2000 TO 2004: AN OVERVIEW FROM BRAZILIAN DATA

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[1]Analytical Solutions

Introduction

Through the comparison of data analysis of organic contaminants which are highly toxic and complex, it is possible to obtain a profile of a country's technological progress, as well as of its quality of life.

This paper shows an overview from a referenced laboratory for PCDD/F analyses in Latin America. Its services are requested both by the government organizations of environment control and private institutions in Brazil and other South American countries. Besides, it is responsible for the monitoring programs held by the Ministry of Agriculture (export and control of CPP and additions).

Thus, based on the PCDD/F analysis it is possible to relate statistic data to the type of die samples, industry, geographical regions and other relevant information which might help understand the current facts.

Methods and Materials

The methods and materials used follow the USEPA regulations (United States Environmental Protection Agency). Such methods are EPA 8290, 1613 (gas chromatography and high resolution mass spectrometry).

A research has been made in order to obtain statistic data associated to the laboratory's quality system – sample receipt and login, operational and analytical processes.

Results and Discussions

An initial evaluation shows the demand rate related to the PCDD/F analysis requested by the clients within a certain period of time. An increase has been noticed both in the number of clients and the analyses requested by them (Table 1). That is due to general environmental awareness and the companies environmental programs, as also there has been a greater vigilance by non-government environmental organizations and press releases spread by all scientific community.

Table 1: Average values per month (2001-2003) related to the number of

PCDD/F analyses and the number of clients.

Average Values per Month	2001	2002	2003	2004
Number of Analysis	97	114	314	972
Number of Clients	29	41	65	103

It is important to note that these numbers increase progressively. No discrepancy affecting this description could be noticed. A second evaluation is necessary whilst analyzing the profile related to a specific environmental parameter: the different sorts of die samples and the action areas (market place) related to the requests of these services.

Results are challenging if we observe figure 1, which is as comparative study among the action areas of the institutions requesting PCDD/F analyses. The highest percentage related to environmental monitoring signals an increasingly attention from these industries concerning monitoring and prevention, as well as their awareness of the productive process, its environmental interface and the consequences to population.

Foods and paper are also areas which companies have been making a great effort in order to accomplish both commercial and quality criteria. Other important areas are concerning the control of several emission processes.

Figures 1 and 2 show the range of requested analyses related to the samples. Whilst evaluating these graphics, we notice relevant percentage data associated to incineration and amissions, probably a consequence of rigorous monitoring of chimneys and incinerators performed by environmental control organs in the state.

Figure 1: Comparative graphic of the market place of clients requesting PCDD/F analyses.

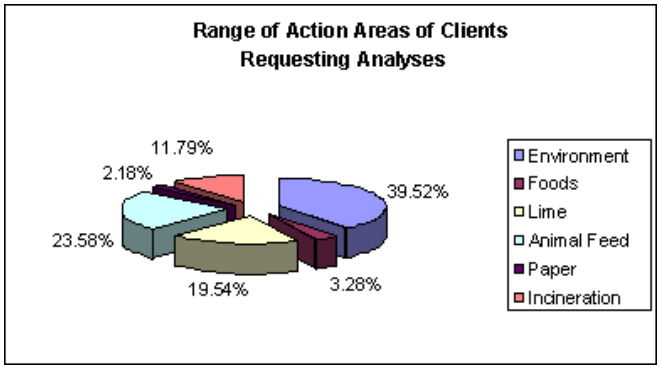
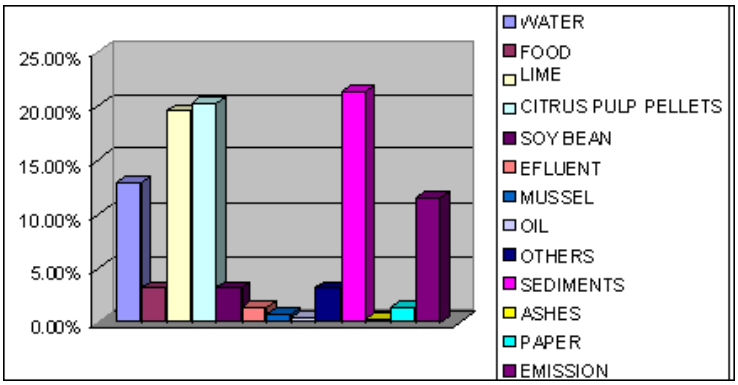


Figure 2: Graphic - Percentage of each type of die sample related to PCDD/F analysis



By comparing these data to the annual reports from chemical industries institutions, it is still seen that most[3] of these associations could or should use the analyses referred above as a guide to their own internal monitoring and prevention programs. However, the graphs show some improvement among the areas related to study, monitoring and control, which certainly contributes to also improve the life conditions and the environment, which are recent concerns for the Brazilian industrial field.

References

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