

## Determination of Pesticides Residue in Food and Water

Kingdom of Bahrain imports most food stuff from different countries (Mainly from third world countries) which may use banned pesticides such as DDT or a high dosage of permitted pesticides which adversely affect human health. The use of toxic pesticides to manage pest problems has become a common practice around the world. Pesticides are used almost everywhere -- not only in agriculture, but also in homes, parks, schools, buildings, forests, and roads. Pesticides also contaminate drinking water sources. In addition, pesticides can be found in the air we breathe, the food we eat, and the water we drink. The Kingdom of Bahrain has made food safety a priority both to protect the health of its citizens as well as to improve the marketability of some of our food exports in the international market. To ensure the safety and quality of the food supply in Bahrain, public Health laboratories Section improve its capacity in terms of equipment and trained staff with comprehensive IAEA cooperation for monitoring of pesticide and other toxic residues in food & Water (crop/vegetable commodities).



Public Health Laboratory-Chemical Analysis Group is performing chemical analysis tests ensuring food safety, fitness for consumption, and contractual compliance through chemical and toxicological testing of food and water in addition to pesticides residues in water and food products. The GC technique with a selective detector (electron Capture Ni 63 isotope and MS/MS) and LC/MS/MS were used to detect pesticide residues in PHL. Stable isotope internal standards which drastically improve analytical results and reduce extraction times while enabling the simultaneous rapid analysis of a large number of pesticides was also be used. IAEA supported staff training in various analysis techniques including the use of stable isotopes and to conduct national-workshops/meetings.

### Project values Added

- Support the pesticide screening program for two consecutive years
- Development of the capacity of human cadres of chemists and health inspectors belonging to the Ministry of Health and the Ministry of Agriculture by providing specialized training courses in the field of import and examination of imported and local agricultural samples
- Assist in purchasing the simple equipment needed by the laboratory To optimize the test results
- Updating national requirements and standards by helping to provide internationally accepted standards and requirements
- Assist in the provision of laboratory test supplies and around 160 standard to cover most pesticides used in agriculture
- Provision of approximately (47) thousand dinars from the Kingdom budget
- Develop effective communication between the Ministry of Health and the Ministry of Agriculture and Municipal Affairs. All insecticide residues are covered in public health laboratories and all results and statistics are sent to the Ministry of Agriculture to take the necessary measures to protect the consumer and ensure his health.

