

# AN OVERVIEW ON RADIOANALYTICAL METHODS AND LESSONS LEARNED DURING THE ICLN RADIOLOGICAL CONFIDENCE BUILDING COMPETENCY TEST (CBCT) FULL SCALE EXERCISE

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A full scale interagency radiological exercise was conducted by Integrated Consortium of Laboratory Networks (ICLN) to assess the radioanalytical capabilities and surge capacities of radiological laboratory networks established by different government agencies. The exercise called for the joint agencies to respond to two consecutive radiological emergencies involving large scale of alpha and beta radioactive contaminations. In support of the ICLN exercise, the Food and Drug Administration's Winchester Engineering and Analytical Center (WEAC) prepared ~400 apple juice samples containing either  $^{239}\text{Pu}$  or  $^{90}\text{Sr}$  and distributed 322 of them to the FDA's Food and Emergency Response Network (FERN). The participating laboratories were instructed to complete rapid alpha and beta radioactivity screenings for the first 48 hour early phase of the exercise and to report alpha and beta isotopic results within 5 days for the recovery phase of the exercise. Various radioanalytical methods and radiation detection techniques were adapted and used by the participants for the analysis of alpha and beta radioactivity in apple juice. The results from the exercise indicated that the FDA radiological network has the ability to timely process ~95% of the test samples requested with ~75% proper detection of beta radioactivity and ~92% proper detection of alpha radioactivity. This presentation summarizes the methodology and logistic issues observed throughout the exercise and provides recommendations for future improvements.