

Detection of gold and mercury in rice from artisanal gold mining area of the Philippines

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Abstract

Polished rice samples from gold-mining sites of the Philippines were treated with two kinds of method for the PIXE analysis at NMCC. One group was pulverized and ashed by the nitric acid ashing method. As internal standard 1,000 ppm indium was added to the ash. The other group was also pulverized but was not charred. Each powder was directly pasted on a four micrometer-thick polypropylen film using collodion which was diluted to one per cent. The PIXE detected signals of mercury and gold from the second group, i.e. pulverized samples without ashing. From ashed or digested rice samples, it is difficult to detect subtle signals of mercury. Bulk PIXE analysis should be applied to detect mercury and to identify hot spots in the ASGM areas.