INVESTIGATING THE POSSIBILITY OF USING ETCH PIT COUNTING METHOD TO DETERMINE THE ABSOLUTE ALPHA ACTIVITY OF PLANT ASH SAMPLES

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Etch pit counting method is a very simple and inexpensive method used in the detection of all charged particles, from proton onwards. Its application in the detection of alpha particles has been very successful in many fields of Nuclear Sciences[1]. Present study was initiated to investigate the possibility of using alpha sensitive polymeric nuclear track detector CR - 39 in the measurement of absolute activity of ash samples of some plants growing in the monazite bearing soils in Sri Lanka. The values obtained ranged from 60 - 1800 mBg/g and were compared with the values obtained from the conventional scintillation alpha counting method, and found to be in good agreement with each other. A statistical test also revealed that the differences in the values were insignificant. This suggests that the etch pit counting method using Cr-39 as the detector is also a suitable method to determine the absolute alpha activity of plant ash samples.

References: 1. Fleischer R.L., Price P.B. and Walker R.M. (1975) Nuclear Tracks in Solids. University of California Press.