

Measurement of Percentage Depth Dose and Half Value Layer of the Rhizophora spp. Particleboard Bonded by Eremurus spp. to 60, 80 and 100 kVp Diagnostic X-rays

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Abstract: Some researchers formerly provided the mechanical, physical, and attenuation properties of the fabricated Eremurus–Rhizophora spp. particleboard phantom. In this study, the percentage depth dose (PDD) and the half value layer (HVL) of fabricated Eremurus–Rhizophora spp. particleboard phantom were determined and compared with those of Perspex and water phantoms, with the same standard phantom size (30 cm 9 30 cm 9 30 cm) in the diagnostic energy range using TLD 100H. In addition, the energy range of X-ray was in diagnostic range of energy. The results indicated that the PDD and HVL of the fabricated Eremurus–Rhizophora spp. particleboard phantom were close to those of the Perspex phantom. Likewise, the PDD and HVL of the fabricated Eremurus–Rhizophora spp. particleboard phantom were found in good agreement with those of water phantom. According to the results of this study, the fabricated Eremurus–Rhizophora spp. particleboard phantom can be used as medical phantoms.

Keywords: Medical phantom; Percentage depth dose (PDD); Half value layer (HVL); Fabricated Eremurus–Rhizophora spp. Particleboard