

**Purpose:** High spatial resolution of Radiochromic gel dosimeter with optical readout system, its tissue equivalence property and ability to map dose distribution in 3D makes it suitable for dosimetric measurements of small fields used in Radiosurgery. **Method & Materials:** In this work we have used the FX gel and the optical readout system for measuring the beam profiles and the output factors of Radiosurgery circular collimators and micro MLC (mMLC) collimator for 6MV photon beams. The measurements were repeated with GafChromic film and pin-point ion chamber. FX gels were also irradiated for two Radiosurgery plans, one with arcs using circular collimators and the other with mMLC and static beams. These were compared with the TPS dose distribution. **Results:** The field size and the FWHM measured with Gel dosimeter were within 1mm for small fields and maximum of 2 mm for 40 cm diameter field. The beam profile and the penumbra measured with FX gel matched with those measured with GafChromic films. The output factor measured from the optical attenuation coefficient of FX gel and the factors measured with GafChromic film were within 2%. **Conclusion:** The dose distribution obtained with FX gel was identical to those obtained from the Treatment Planning System