Dosimetric differences between two multileaf collimators (MLC) of different leaf widths were studied for the treatment of carcinoma of prostate with intensity modulated radiation therapy (IMRT). Ten clinical patients with prostate tumors were planned with two different MLC leaf widths, 4 and 10 mm, representing Radionics micro-multileaf collimator and Siemens multileaf collimator, respectively. Treatment planning utilized the XKnife RT2 treatment planning system (Radionics, Burlington, MA). For all the cases, the number of beams and gantry positions were taken from clinically treated IMRT plans, which were generated using the Corvus system (Nomos Corp., Sewickley, PA). For each patient, the beam angles, dose constraints and optimization parameters were identical for the micro-MLC and MLC plans. All of the plans were normalized to ensure that 95% of the planning target volume (PTV) receives 100% of the prescribed dose. The differences in isodose dose distributions between the two different MLC plans were assessed based on dose-volume histograms (DVH) of the target and critical organs. For all the cases studied, the micro-MLC based plans offers a consistent reduction in rectal and bladder doses. The mean volumes treated to doses above 40 Gy for the rectum and bladder were 13.3 and 18.6% for the micro-MLC plans, and 22.7 and 24.4% for the MLC plans, respectively ($p<0.0005$). The average doses received by 35% of rectum were 26.4 for the micro-MLC plans, and 31.9 Gy for the MLC plans, respectively ($p<0.0005$). The target dose uniformity was also improved in the micro-MLC plans.