For dose calculations a matrix of points is established within the image being viewed through the display plane. A series of rectangular dose grids on axial planes is the most popular, however, a dose matrix on any oblique line or plane may be desired in 3-D radiation therapy dose calculation. Since 3-D radiation therapy utilizes multiple non-coplanar technique, a lengthy computation time is required to obtain the final dose distribution on any oblique dose grid , when interpolating process is applied to obtain dose values on oblique dose grid from regular cubic dose values computed. The main approach is to develop the fast computation procedure on any oblique dose grid without interpolation process due to tedious dose computation on regular volume dose matrix. We adapted an simple 3-D dose model based on measured beam data to demonstrate our result. The calculation of dose on any oblique dose grids requires beam parameters such as depth, off-axis distance, source to grid distance and field size from our dose model. The direct method to determine beam parameters was derived and based primarily on the coordinate transformation and vector analysis between irradiation parameters and oblique dose grids. Four cases of oblique dose grids are demonstrated including oblique line or plane. It is shown that our computation method gives more accurate and much more faster in terms of dose computation on any oblique dose grids than interpolation method.