Eight commercial varieties representing all four market types of peanut have been tested under three irrigation levels and three seeding rates in 2006, 2007 and 2008 at two locations with differing soil types in West Texas. Irrigation levels consisted of 75, 50 and 25% of reference evapotranspiration replacement. Seeding rates were 100, 50 and 25% of the normal seeding rates based on market type. The 75% (full) irrigation rate has shown to be higher in oil content and produce more gallons of oil per acre than the 50 and 25% rates. No significant differences have been found for oil content or gallons of oil per acre for the three seeding rates. This suggests that reducing seeding rates can reduce input costs without sacrificing profits to the producer. Varietal difference have been found, with Olin and Spanco yielding higher oil contents than NM Valencia C and TamnutOL06 for the erect varieties, and the runner varieties Flavorrunner 458, TamrunOL02 and TamrunOL07 yielding higher oil contents than the Virginia variety Gregory. The runner and Virginia varieties have shown to produce more gallons of oil per acre than the Spanish and Valencia varieties due differences in yield. Minimizing inputs such as irrigation and seeding rate combined with proper varietal selection can allow for profitability of growing peanuts for oil in West Texas.