A microtiter plate (MTP) method was developed to determine the quality of fats that are used in large-scale processing using lipase catalysis. Two assay formats were followed: In the first approach, the fats were interesterified with \( p \)-nitrophenol laurate using a lipase from \textit{Thermomyces lanuginosa}; in the second approach, pH indicators were added to the fat samples containing lipase. A blind study using 29 fats showed that the MTP method using \( p \)-nitrophenol as pH indicator allowed a rapid and reliable assignment of bad fats and an acceptable differentiation between fats of moderate and good quality.