The effects of rice bran and carboxymethyl cellulose (CMC) on the oxidative stability of smoked chicken sausages were determined. Lipid oxidation was analyzed at several different days of chilled storage (n=3, for all measurements). Thiobarbituric acid (TBA) values and peroxide value (PV) of smoked chicken sausages increased throughout the nine days of storage (4°C). Chicken sausage formulated with Red Palm Mid Fraction (RPMF) showed significantly lower TBA value compared to the samples prepared with chicken fat (p<0.05). However, •-carotene content showed the highest significant value (p<0.05) in sausage incorporated with RPMF. It was concluded that the utilization of RPMF significantly reduced the oxidation of lipid, which was indicated, by the TBA values. This study also showed that the small amount of dietary fiber (rice bran) also improve the oxidative stability of smoked chicken sausages. It can be suggest that the time for oxidation study need longer storage duration to see the good result plot and changes that occur can be determined clearly. © IDOSI Publications, 2012.