Essential Oil or Volatile Oil have characteristic properties due to the presence of phenolic, alcoholic and acidic compounds in their composition. The antioxidant activity of essential oils of Apium graveolens and Foeniculum vulgare oils is an attempt to check the antioxidant activity against the synthetic antioxidant used in industry for the storage of food made in oil and fats. The POV values of essential oils of Apium graveolens and Foeniculum vulgare were determined by (AO) method. Also the POV values of synthetic antioxidant were determined by the same method. By the comparison of the POV values of essential oils of Apium graveolens and Foeniculum vulgare and synthetic antioxidant i.e., BHT, it was concluded that the essential oils of Apium graveolens and Foeniculum vulgare could be used for the preservation of food.