Potato chips is a product that requires no cooking and is ready for use as a cereal, a garnish to various dishes, snacks to beverages (juice, milk, beer, etc.). The quality of potato chips depends mainly on the quality of potatoes and frying fat, which in the chips, on average, contains 25...30%. Currently relevant topic is the increase of the nutritive value rorouni products by balancing their fatty acid composition, particularly the ratio of fatty acids of ω-6 and ω-3 family according to the recommendations of the Ukrainian Institute of nutrition. It investigated fatty acid composition of vegetable oils (palm oil, sunflower oil, corn oil and rapeseed oil), and found that none of the oil does not comply with the balance of the fatty acid composition of the fatty acids polyunsaturated ω-6, ω-3 10: 1. To provide a balanced ratio polyunsaturated fatty acids calculated fatty acid composition of blends of vegetable oils, which is obtained by mathematical calculation represented oils, an optimal ratio of polyunsaturated fatty acids, ω-6, ω-3, which was tested as a frying fat during frying chips. For frying potato chips in various vegetable oils and their blends were created the same conditions: 70 g of potato mass, roasting temperature of 160° C and roasting duration of 220 seconds. These parameters optimal for laboratory fryer that were identified during trial testing roasting potato chips. It is found that the highest resistance observed with the mixture of palm olein, peroxide value that does not extend beyond 10 mmol ½ O / kg, for 6 hours of roasting, for a period of possible application of the oil under these conditions. The expediency of their use in the manufacture of potato chips. The magnitude of the number of peroxide elected fats that are less subject to the processes of peroxidation.

**Keywords:** frying fat, potato chips, fatty acid composition.