Iron deficiency is the most common nutritional deficiency and widely distributed in the world, particularly affecting children in preschool. A safe strategy to prevent and control iron deficiency anemia is through dietary approach that employs fortifier mixtures for ensuring moderate amounts of iron accompanied by other nutrients and dietary practices to preserve the focus on the use of food. Thus, the objectives of this study were to produce a lyophilized fortifier mixture and evaluate its composition through physicochemical analyzes. Swine liver, onion, garlic, skimmed milk cream, soybean oil and salt were used to produce the mixture. After cooking the ingredients, they were ground forming a paste which was subsequently frozen and lyophilized. The obtained mixture was subjected to pH, moisture, ash, protein and total fat analyzes as described by AOAC methods. The results obtained from such determinations were 5.66 (.01), 3.68 (0.12), 5.18% (0.03), 47.34% (0.13) and 28.29% (0.08), respectively. The fortifier mixture presented low moisture content, characteristic of lyophilized products and high contents of protein and lipids. It also stands out for the high concentration of minerals including probably iron since liver is a great source of this micronutrient. The lyophilized fortifier mixture being in a powder form can easily be added in many food preparations intended for preschool children, in suitable quantities to raise the iron content, but in such away that it will not interfere on the normal consumption of these food preparations.