The problem of production food products which are enriched with various biological active additives is extremely topical for Ukraine in the conditions of the economic and ecological crisis. It leads to increasing of the population morbidity, the reason of which in a large measure is the existence of dietary rations deformation.

The production of powders which are obtained by various drying methods allows realizing waste-free processes of agricultural products processing and it is one of the perspective ways of agricultural raw materials rational use.

The study which is carried out by the authors, shows the promising use in the process of vegetable raw material drying of the two-level functional container (FC), as the base for the mass exchange module (MEM) creation. But the functional container of such construction has principle drawbacks such as technological drawbacks from the production point of view (the restriction of functional container large sizes) and practical drawbacks (impossibility to mechanize the process of loading and unloading of functional container, and it does not allow the drying process automating).

The proposed constructive and technological solutions for the development of MEM use the ideology of the two-level functional container and allow elimination of the above-mentioned drawbacks.

The obtained results allow construction of the basic drying module which implements the drying process and has operational productivity not less than 300 kg per hour.

**Keywords:** drying, vegetable raw material, mass exchange module, functional container, hydrophobic coating, silicon organic lacquer.