In this work, it was studied the application of phospholipase and whole meal in pan bread without sugar, fat and emulsifier to reach good baking technological properties of low calorie bread and enhance nutritional properties with fiber and without any chemical additives. Wheat flour and whole meal were characterized and pan breads were produced using the modified straight dough method. It was applied complete experimental design factorial $2^2$, with two independent variables: phospholipase dosage (0 to 50 ppm) and percentage of whole meal replacement (0 to 70%). It was done a control test (without the addition of phospholipase and whole meal) for comparison. The dependent variables or responses were the quality characteristics of the breads: i) specific volume; ii) moisture and iii) firmness after 24 hours from baking. Within the ranges studied, it was possible to verify that specific volume, moisture and texture were affected by variation of phospholipase and whole meal dosages. Superposition of response surface of specific volume and texture were defined which dosages of phospholipase and whole meal to produce fiber enriched bread or high fiber bread. For the dosages of phospholipase and whole meal used, it was possible to obtain high fiber pan bread without sugar, fat, emulsifier and additives with good baking quality.