

CHANGES IN FAT AND FATTY ACID CONTENT OF SOYBEAN SEEDS STORED IN DIFFERENT PACKAGING MATERIALS,

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ABSTRACT

Soybean has been considered as an important world crop as it has a unique chemical composition. On an average dry matter basis, soybean contains about 20% fat which contains a high proportion of essential fatty acids such as linoleic and linolenic acids. Changes of fat content and main fatty acids like palmitic, stearic, oleic, linoleic and linolenic acid contents of the soybean seeds of variety PM-13 packed in aluminum foil, polythene, paper packets and control (unpacked) were determined. Changes in fat content of the aluminum foil, polythene, paper packed and unpacked soybean seeds stored for 3 months were ranged between 1-3%. Among the 5 fatty acids palmitic acid content did not changed significantly with the packaging material and storage time. It ranged between 12.7-13.3% of the total fatty acids. Essential fatty acid: linoleic and linolenic acids contents decreased with increasing storage time. After 3 months storage time essential fatty acid content packed in polythene and packed and unpacked seeds were reduced by 6, 14 and 15% respectively. But there was no significant change observed in seeds packed in Al foil packets. However, after 6 months of storage loss of essential fatty acids was observed in seeds packed all packaging materials. Stearic acid contents also decreased with increasing storage time under the same conditions. The rate of decrease was between 3-16% for samples stored for 3 months and between 16-20% for samples stored for 6 months. Oleic acid content increased with increasing storage time. After 3 months of storage oleic acid content increased under all storage conditions except for seed packed in Al foil. Among the four packaging conditions the rate of change in fat and different fatty acids with time was low in seeds packed in aluminum foil than other packaging materials tested.