

PALM DATE SEEDS AS AN ALTERNATIVE SOURCE OF DIETARY FIBER IN SAUDI BREAD

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Palm date seeds were milled into two fractions: fine and coarse. Total dietary fiber (TDF) contents were found to be around 71 and 80% respectively. These fractions were used to replace flour in Saudi Mafrud flat bread at 0, 5, 10 and 15% replacement levels. The corresponding wheat bran replacement levels were used as control. Breads were evaluated by total dietary fiber analysis, dough rheology measurements and by panels of people trained in sensory evaluation. Breads containing milled date seed fraction are slightly lower in protein and slightly higher in fat but substantially higher in total and soluble dietary fiber than the control bread. Coarse fraction at 10% replacement level was found to increase the TDF fiber contents in bread by four-fold without a significant adverse effect on bread quality. Wheat bran at the same level replacement increased TDF content in bread by only threefold. Furthermore, breads containing 10% milled coarse fraction were better or similar to the corresponding wheat bran control in sensory evaluation. In contrast, the fine fraction was found to cause a deterioration in bread color, flavor, odour, chewing, uniformity and overall acceptability. These effects increased with increasing concentration of the fine fraction. The farinograph and extensograph were used to study the effect of date seed fractions on dough rheology. The coarse fraction affected the mixing characteristics and extensograph parameters in a relatively similar manner to wheat bran but the fine fraction behaved in a different manner.

KEY WORDS: Palm date seed, Dietary fiber, Saudi bread, Bread fiber enrichment