The effect of date palm fruit 
(*Phoenix dactylifera L.*) On serum lipid and lipoprotein concentrations in rats fed cholesterol- supplemented diet

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Abstract.

**BACKGROUND:** The date palm fruit (*Phoenix dactylifera L.*) has been known for many health benefits, but its antihyperlipidaemic activity still remains unclear.

**OBJECTIVE:** To investigate effects of Birhi date palm fruit, “Khalal” and “Tamr”, on serum lipids, body weight and food intake in cholesterol-fed rats.

**METHODS:** Sixty male Sprague–Dawley rats were assigned into 5 cholesterol-free (control) or 5 cholesterol-supplemented (experimental) diets containing 0%, 5% and 10% of either Khalal or Tamr and given ad libitum to the rats for 6 weeks. Serum total cholesterol (TC), low- and very low-density lipoprotein cholesterol (LDL-C and VLDL-C), high-density lipoprotein cholesterol (HDL-C) and triglycerides (TG) were then quantified and other biological parameters were assessed.

**RESULTS:** Compared to control, cholesterol induced significant (p < 0.05) increase in serum LDL-C, TC/TG ratio and atherogenic index and decrease in TG and HDL-C/LDL-C ratio, whereas other lipid fractions, food intake and weight gain were unchanged. In all rats, none of the studied variables were appreciably affected by dates feeding, except for increased (p < 0.05) and linearly responded (r² = 0.348, p < 0.01) atherogenic index induced by Khalal. Lipid variables and their calculated ratios that were increased or decreased by cholesterol remained unaffected by dates feeding.

**CONCLUSION:** In normal or cholesterol-fed rats, Birhi Khalal or Tamr exert little or no effect on serum lipids and are ineffective to counteract the atherogenic effect of cholesterol.

**Keywords:** Birhi date palm fruit, khalal, tamr, lipid profile, cholesterol, rats