Different strains of yogurt starter cultures and different incubation temperatures were investigated in the production of plain, unflavored set type yogurt. Milk samples were inoculated with 2%, CH-1 (non-filant type which does not produce any ropy like substances) and B-3 (filant type which produces ropy like substances), and then incubated at 35 and 45 degreesC until the pH reached 4.7. Total solids, fat content, pH, viscosity, consistency, whey separation, organoleptic evaluation and content of lactic acid, acetaldehyde, volatile fatty acids and tyrosine were measured as quality criteria on the yogurt samples at Days 1 and 14 of storage. Lactic acid content and pH values of samples were more significantly affected by starter culture strain than by incubation temperature (P < 0.01). Among these treatments, use of different culture strains affected tyrosine and acetaldehyde contents of yogurts. Yogurt samples made from milk inoculated with CH-1 culture and incubated at 35 degreesC had the highest acetaldehyde content. Consistency and viscosity of yogurts increased when made from milk inoculated with exopolysaccharide producing culture (B3) and incubated at 35 degreesC. Whey separation was decreased more with B-3 yogurt produced at 35 degreesC than with yogurt made with CH-1 at the same incubation temperature. During the 14-day storage, the rheological properties of all yogurts were scored higher, and the content of lactic acid, volatile fatty acids, and tyrosine increased while pH values and amount of acetaldehyde were decreased. (C) 2004 Elsevier Ltd. All rights reserved.