Deter mination of suitable condition for vinegar production from 3th and 4th grade date palm.

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Iran is one of the greatest producers of date in the world Iran has the third position in rank after saudi Arabia, and Egypt in this field. Although about 15% of world production is produced in Iran, but using the waste date in vinegar production can be a new way.

This research included of two parts :

Aerobic Fermentation

Anaerobic Fermentation

Each part carried out in form of split plot in time, in the completely randmized design,

In part one, two Factor were studied.

Factor A : Urea (as a source of N) in 4 levels : 0 , 7 , 14 , 21 (gr/lit)

Factor B : Fermentation time in 4 levels (5 , 10 , 15 , 20 days).

Results showed that in different sampling times the produced alcohol and amount of significent different, in 5 percentage level, the best alcohol prodution amount was obtained after 5 days, but the amount of urea in different time had no signifficant effect on alcohol.

In aerobic fermentation also two factors were studied :

Factor C : Vinegar percentage in 4 levels (10 , 15 , 20 , 25%).

Factor D : Fermentation time in 4 levels (7 , 14 , 21 , 28 , days).

Results showed that original vinegar percentage had effect on PH and acidity in different times. on the other hand the puzzel F (0.3986,0.5607) and design F were the same. In fact the best treament was 10% urea and the best unaerobic fermentation was 21 days.