# Abstract 5-2011 )26)3-5-2011

**Two** field experiments were conducted. The first experiment carried out for two consecutive summer season 2008 and 2009 at two sites farm of the University of Sana'a and Bani Mater, for two consecutive summer season 2008 and 2009 dry conditions. The objectives of this experiment were to screening 21 local .wheat cultivars and to study their performance

The second field experiment was curried out at the experimental farm of the University of Sana'a with objective of investigation the effects of three doses of Phosphorus fertilizer (30, 60 and 90 $P_2O_5$ kg/h) and three seed rates (80, 120 and 160 kg/h) on growth yield and yield components of three local cultivars of wheat under drought conditions. Split split latin square was used.The design applied was the Randomized .(Complete Black Design (R.C.B.D

The two experiments were statistically analyzed using SPSS. Averages of transaction have been compared according to the Least Significant Differences (L.S.D.) at the significant level of .%5. The following results have been obtained

**Firstly** : the experiment of screening for 21 local variety has -:been obtained the following results

The experiment of drought showed that significant differences between local variety of wheat in all characters under drought conditions. Variety whitani ($V_{20}$) attained highest value of the period from planting until flowering while variety Baladi Yremi ($V_{21}$) obtained highest value of the period from flowering to maturity. Whereas variety brunette ($V_{13}$) exhibited highest value of flag leaf area however variety Julans ($V_{14}$) revealed highest value for the number of Tillers/$m^2$ whereas variety Arabi Misani Mukayras ($V_{17}$) scored highest value of spike lenth. Whereas two varieties Matry and Bony ($V_9$ and $V_{11}$) obtained highest value of chlorophyll pigment and variety Hrqadi ($V_3$) obtained highest value of weight of 1000 grains and harvest index, variety Bony ($V_{11}$) obtained highest value of weight of Economic yield, number of spikes/$m^2$, Biological yield and crude protein for the second season only. Superiority of the two varieties Bony($V_{11}$) and Samra ($V_7$) for the character of the proportion of crude protein in the both seasons. Whereas the varieht Arabic Misani

Mukayras ($V_{17}$) exhibited highest value for plant height and .Biological yield

While the varieties Arabi Misani Mukayras ($V_{17}$) and Baladi Sadah ($V_{15}$) recorded lowest value for the pre ascription value of protein of wheat flour was %6.43 and %5.90. Whereas the characters of Grain weight and Economic yield was 1.6 g , 6.15g and 1.30 t/ha for the second seasons respectively. Variety Zerai ($V_{16}$) revealed lowest value of the number of spikes/$m^2$ in the second seasons and Biological yield in the both seasons. Different locations with each other significantly in many of the charcters and the superiority of the site built rasn at Sana'a .during the both season

Different sites with each other significantly in many of characters. Superiority of the site Bani Mater than Sana'a site during all seasons for characters of the period to flowering, chlorophyll pigment, period from flowering until maturity, number of spikes/$m_2$, number of grains, spike, grain weight, economic yield, harvest index, crude protein tons/ha, While there was non significant differences between two locations in all seasons of these characters for plant height and Biological yield non signicant differences between two sites in the first season of these characters of flag leaf, number of tillers/m2 and spike length/cm where as in the second season showed non .significant differences in proportion of protein in wheat flour

**Secondly**:- experiment of fertilizer, seeding rate and verities -:we have been obtained the following results

Significant increase in the second season was obtained in-1 plant height, chlorophyll pigment, number of branch/ $m^2$, number of days to %50 flowering, number of head/ $m^2$, length of head, number of grain per head, biological yield, harvest index, protein percentage by the addition of phosphorus. While there was no effect of phosphorus in the first season on 1000 seed weight, biological yield, protein percentage, wheat flower, .days to %50 flowering and leaf area

All traits under study were increased significantly with the -2 increase in seed rates in both seasons except leaf area, chlorophyll pigment in both season and protein percentage in .the second season

Different varieties were observed among the varieties under-3 study.$V_3$ (Bonnie) differ significantly from other varieties in cholorophyll pigment, number of tillers/ $m^2$, number days until mature, number of heads per $m^2$, weight of 1000 seeds, biological and economic yields, head length and protein percentage in both seasons. $V_2$(Matry) was difference from the two other varieties in plant height in second season, while $V_1$ (Arabic) was late in maturing and number of seeds in the second season. While there were no significant difference between the varieties in leaf area, harvest index in both seasons. Also number of seeds per head, plant height and head .length of in the first season

There were significant differences due the interactions of the-4 experimental factors in all traits under phosphorus × seed rate .in all traits under study in both season