

Investigation in to Different Sowing Dates and Fertilization Methods (chemical and organic) on Yield and Yield Components of Milk Thistle (*Silybum marianum* L.)

S. Abdolah zareh^{1*}, E. Fateh², and A. Aynehband³

1*. **Corresponding Author:** M.Sc. Student, Department of Agronomy, College of Agricultural, Shahid Chamran University, Ahvaz, Iran, (Soo2011zareh@yahoo.com)

2. Assistant Professor of Crop Ecology at Shahid Chamran University, Ahvaz, Iran

3. Associate Professor of Crop Ecology at Shahid Chamran University, Ahvaz, Iran

Received: 26 April, 2011

Accepted: 27 November, 2011

Abstract

In order to study the effects of different sowing dates and Fertilization methods on yield and yield components of milk thistle (*Silybum marianum* L.) a field experiment was conducted at the Agricultural Faculty of Shahid Chamran University on 2009-2010. The experiment was split plot on RCBD with three replications. The main plot was sowing dates in 3 levels (14Nov, 1 Dec, 15 Dec) and the sub-plot was different fertilization levels at six levels including: F1: control, F2:100% chemical fertilizer (100- 120-150 kg/ha NPK), F3: %25 organic fertilizer + %75 chemical fertilizer (75-90-112.5 kg/ha NPK + 7.5 ton/ha animal manure), F4: %50 organic fertilizer + %50 chemical fertilizer (50-60-75 kg/ha NPK + 15 ton/ha animal manure), F5: %75 organic fertilizer + %25 chemical fertilizer (25-30-37.5 kg/ha NPK + 22.5 ton/ha animal manure), F6: %100 organic fertilizer (30 ton/ha animal manure). Sowing date had a significant effect on grain yield, biological yield, harvest index, seed number at main capitul, seed weight at main capitul and seed number at main capitul. Also, different fertilizing methods had positive impact on all traits under investigation, except 1000 seed weight at main capitul. The results showed that the highest grain yield resulted in 1 Dec (2175 kg/ha) sowing date. The late sowing date had a lower grain yield. The fertilizing systems had a significant effect on grain yield. The highest grain yields (2422 & 2408 kg/ha) were obtained by treatments of 100% chemical fertilizer and %75 organic fertilizer + %25 chemical fertilizer respectively. The grain yield had the highest positive significant correlation with the grain weight in sub capituls ($r= 0.92^{**}$).

Keywords: *Sowing date, Fertilizing methods, Milk thistle, Grain yield*