

Weeds Density Affects Yield and Quality of Wheat Crop under Different Crop Densities

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Abstract : Weed competition is one of the major biotic constraints in wheat crop productivity. *Avena fatua* L. and *Silybum marianum* (L.) Gaertn. are among the worst weeds of wheat, greatly deteriorating wheat quality subsequently reducing its market value. In this connection, two-year experiments were conducted in 2018 & 2019. Different seeding rate wheat viz; 80, 100, 120 and 140 kg ha⁻¹ and different weeds ratio (*A. fatua*: *S. marianum*) sown at the rate 1:8, 2:7, 3:6, 4:5, 5:4, 6:3, 7:2, 8:1 and 0:0 respectively. The weeds ratio and wheat densities are indirectly proportional. However, the wheat seed at the rate of 140 kg ha⁻¹ has minimal weeds interference. Yield losses were 17.5% at weeds density 1:8 while 7.2% at 8:1. However, in wheat density, the highest percent losses were computed on 80 kg ha⁻¹ while the lowest was recorded on 140 kg ha⁻¹. Since due to the large leaf canopy of *S. marianum* other species can't sustain their growth. Hence, it has been concluded that *S. marianum* is the hotspot that causes reduction to the yield-related parameters, followed by *A. fatua* and the other weeds. Due to the morphological mimicry of *A. fatua* with wheat crop during the vegetative growth stage, it cannot be easily distinguished. Therefore, managing *A. fatua* and *S. marianum* before seed setting is recommended for reducing the future weed problem. Based on current studies, it is suggested that sowing wheat seed at the rate of 140 kg ha⁻¹ is recommended to better compete with all the field weeds.

Keywords : fat content, holly thistle, protein content, weed competition, wheat, wild oat

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