

## Effect of pre-sowing treatment and nitrogen on the weed properties in maize fields

**Authors:**

Amirsaleh Baghdadi<sup>1</sup>,  
Mahyar Balazadeh<sup>1</sup>,  
Ali Kashani<sup>1</sup>,  
Farid Golzardi<sup>2</sup> and  
Mohammad Nabi Ilkace<sup>1</sup>

**Institution:**

1. Department of Agronomy,  
Karaj Branch, Islamic Azad  
University, Karaj, Iran

2. Seed and Plant  
Improvement Institute,  
Agricultural Research,  
Education and Extension  
Organization (AREEO),  
Karaj, Iran

**Corresponding author:**  
Amirsaleh Baghdadi

**ABSTRACT:**

In order to evaluate the effect of pre-sowing treatment and nitrogen rates on weed's dynamic population, a field experiment was carried out in a split plot based on Randomized Complete Block Design with four replications at 2013-14 in Agricultural Research Station, Islamic Azad University of Karaj, Iran. Main plots consisted of four pre-sowing treatments (Fallow, Manure, Perko PVH and Buko) and sub-plots included three rates of nitrogen (120, 240 and 360 kg ha<sup>-1</sup>). Variation analyses showed that pre-sowing treatments had a significant difference ( $P \leq 0.01$ ), before corn planting on total biomass and density of weeds, *Convolvulus arvensis* L., *Portulaca oleracea* L. and the other weeds. So that, in all the attributes, pre-sowing fallow made the highest density and biomass of weeds on pre-planting. Decreasing rates of weed density to compare with fallow in Buko and Perko PVH treatments were respectively 42.02 and 37.29 percent and also decreasing rates of weeds biomass were respectively 56.14 and 45.51 percent. Variation analyses after the corn planting indicated the effect of pre-sowing treatments on weeds biomass and density, *Chenopodium album* L., *Amaranthus retroflexus* L. and the other weeds after the corn planting had a significant difference ( $P \leq 0.01$ ); Somehow, that in all the attributes, Perko PVH and Buko treatments could make the lowest weed biomass and density to compare with fallow and manure treatments. Affecting nitrogen levels on *Chenopodium album* L. density, *Amaranthus retroflexus* L. biomass and other weed biomass had a significant difference ( $P \leq 0.01$ ) and other weed densities had a significant difference ( $P \leq 0.05$ ), in a way that showed increase in nitrogen consumption showing weed density and biomass getting increased. Interaction effect of pre-sowing and nitrogen levels on *Chenopodium album* L. and *Amaranthus retroflexus* L. biomass and densities, had a significant difference ( $P \leq 0.01$ ) on the weed density after the corn cultivation showed a significant difference ( $P \leq 0.05$ ). The lowest biomass and density observed in Buko and Perko PVH treatments were obtained by using 120 kg ha<sup>-1</sup> nitrogen fertilizer.

**Keywords:**

Biomass, Buko, Density, Perko PVH, Fallow, Manure