

## **Resistance of wild oat (*Avena ludoviciana*) biotypes to clodinafop-propargil herbicide**

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### **ABSTRACT**

In order to evaluate the resistance of wild oat (*Avena ludoviciana* Durieu.) to clodinafop-propargil of aryloxyphenoxypropionate herbicides, green house studies and seed bioassay experiments were conducted in 2002-2004. Greenhouse experiments included screening tests and dose response experiments where as, seed bioassay experiment included ID<sub>50</sub> determination and dose response experiments. The experiments were conducted on the wild oat biotypes collected from Fars, Markazi and Khuzestan provinces, using clodinafop-propargyl herbicide. Greenhouse experiments were conducted as a randomized complete block design with four replications. In green house screening experiments; biotypes of wild oat treated during 2-4 leaves stage using the recommended dose of herbicide. Shoot biomass, survived plant and EWRC visual rating, were performed four weeks after herbicides application. Further more, response of all biotypes to 0.1-16 times of recommended dose was measured and their R/S ratio calculated. Seed bioassay experiments were conducted using a completely randomized design with four replications. In these experiments the percentage of coleoptiles length versus control were measured 7 days after herbicide application. In order to determine the ID<sub>50</sub> values, a herbicide dose range was applied to susceptible biotype (MS). Further more, the response of all biotypes to ID<sub>50</sub> of susceptible biotypes was measured. R/S ratios of biotypes were also calculated. The results of both experiments showed that KR<sub>1</sub>, KR<sub>2</sub>, KR<sub>3</sub> were resistant to clodinafop-propargyl.

**Key words:** herbicide resistance, wild oat, clodinafop-propargyl, seed bioassay.

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