

**EFFECTS OF UREA , AMMDNIUM SULFATE ,
METHODS AND NUMBER OF APPLICATION ON
ACTIVITY OF GLYPHOSATE CONTROLING FOR**
Dichanthiun annulatum (Forsk) Stapf. **IN**
Saccharum officinarium **L. FIELDS. SUGARCAN**

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ABSTRACT

This research was conducted in the fields of the General Company of sugar – factory and farm of sugar cane , Missan , during the period of 2001/2002, to control of Hairy – node – bear grass *Dichanthium annulatum* (Forsk) stapf , growing in the ratoon of the sugar cane (*Saccharum officinarum*) fields .

Different rate of glyphosate in a direct application (by using wipe or spray method) , different rate of the additive of 1% [Urea + $(\text{NH}_4)_2\text{SO}_4$] solution , and different times of application , were used . New systems of direct application of glyphosate on the weed plants were designed . The systems were wipe tool and Himaiah -1 , wipe tool was used for wipe application , while Himaiah was used for spray application .

The experiment was conducted in split – plot design . Treatments of number of applications , during the season, were considered as main – plot , while the control were considered as a sub-plot . The affects of the different treatments on weeds and crop plants growth were studied. The data obtained were analyzed statistically and the results were summarized as follows :

The treatments and number of applications were significantly affected the degree of weed killing , at 115 , 190 and 410 days , after first application (D.A.F.A) , the regrowth of the weed plant , 190 , 410 D.A.F.A , the dry weight , 204 D.A.F.A. and the rhizome content of the starch and total soluble sugars , 240 D.A.F.A.

The combinations between treatments were also affected the degree of weed plant killing significantly , 115 and 190 D.A.F.A , regrowth of weed plants 190 and 410 D.A.F.A , and rhizome content of starch and total soluble sugars , 240 D.A.F.A. Treatment of 1 : 4 glyphosate : water + 1% of the [Urea + $(\text{NH}_4)_2\text{SO}_4$] solution , which applied by Al-Jihad system , twice , was the most affective on all the studied characteristics of weed plants.

Treatments significantly affected all the studied characteristics on crop plants (except of stem diameter).

Degree of killing 190 and 115 D.A.F.A , number of tillers 240 D.A.F.A , and brix percentage 205 D.A.F.A of crop plants were significantly effected by the number of application.

Combination treatments x number of application , did not effect degree of killing of crop plants 115 D.A.F.A , plant height 204 D.A.F.A number of

tillers 204 D.A.F.A , and brix percentages 205 D.A.F.A. But the results obtained indicated that wipe application by using Al-Jihad system had the lowest effect on crop plant growth.

The results obtained indicated that using wipe tool, for wipe application or Himaiah -1 , for spray application , were most effective in weed control as a direct methods for glyphosate application , with no significant damage on the crop plant. Also in the same time , it was indicated that using wipe tool system could reduce the rate of glyphosate required for weed control , to about 4.09 folds as compared with the application by knapsack sprayer .

Using the additive of 1% of the solution of [Urea + (NH₄)₂SO₄] increased the efficiency of glyphosate for control of weed plants .