

Industrial Hemp response to herbicides. Dr. Howatt and Mettler. Industrial hemp was seeded near Fargo June 4. Treatments were applied to 4 leaf hemp on June 28 with 86°F, 60% relative humidity, moderately clouded sky, 4.2 mph wind at 225°, and dry soil at 80°F. Treatments were applied with a backpack sprayer delivering 8.5 gpa at 40 psi through 11001 TT nozzles to a 7 foot wide area the length of 10 by 30 foot plots. The experiment was a randomized complete block design with four replicates.

Treatment	Rate	7/12 Hemp	7/23 Hemp
	oz ae or ai/A	% injury	% injury
Untreated Check	0	0	0
Clopyralid	1.5 ae	4	0
Fluroxypyr	1.5 ae	85	81
Thifensulfuron-sg+NIS	0.2 ai+0.25%	63	47
Mesotrione+PO+UAN	1.5 ai+20+2.5%	82	72
Bromoxynil	4 ae	9	7
Fomesafen+PO	3 ai+20	89	82
Metribuzin+PO	3 ai+20	82	63
Bentazon+PO	12 ae+20	93	93
Carfentrazone+NIS	0.128 ai+0.25%	23	15
Glufosinate+AMS	6.4 ai+24	96	94
Halauxifen	0.075 ae	32	37
Imazamox+NIS+UAN	0.5 ae+0.25%+32	40	25
CV		8	11
LSD P=.05		8	9

Clopyralid and bromoxynil were quite safe to hemp resulting in less than 10% injury. Carfentrazone caused moderate injury, but since carfentrazone does not translocate, hemp plants seemed to recover quickly from loss of leaf tissue. These are candidates for further investigation of herbicide registrations in hemp. Bentazon and glufosinate provided more than 90% control and offer the best options for control of volunteer hemp. Mesotrione, metribuzin, or fomesafen provided good control but surviving plants produced substantial regrowth and use for volunteer management would rely on substantial crop competition. Fluroxypyr gave 85% control and effect was longer lasting than mesotrione, metribuzin, or fomesafen.

Treatment	Tradename	Formulation
Clopyralid	Stinger	3SL
Fluroxypyr	Starane Ultra	2.8EC
Thifensulfuron-sg+NIS	Harmony SG	50SG
Mesotrione+PO+UAN	Callisto	4SE
Bromoxynil	Buctril	4EC
Fomesafen+PO	Flexstar	1.88EC
Metribuzin+PO	Sencor	75DF
Bentazon+PO	Basagran	4SL
Carfentrazone+NIS	Aim	2EC
Glufosinate+AMS	Liberty	2.34SL
Halauxifen	Elevore	0.57EC
Imazamox+NIS+UAN	Raptor	1SL