Interval between clodinafop split-applications to control wild oat. Howatt, Kirk A., Ronald F. Roach, and Janet D. Davidson-Harrington. Past experiments have shown the benefit of herbicides split applied at reduced rates for wild oat control. This experiment was established to evaluate the effect of length of interval on wild oat control. 'Oxen' hard red spring wheat was seeded April 24, 2003. Treatments were applied with a CO_2-pressurized backpack sprayer delivering 8.5 gpa at 35 psi through 8001 flat-fan nozzles to a 7 ft wide area the length of 10 by 30 ft plots. Experimental design was a randomized complete block with four replicates. Harvest was August 8. Crop and weed stages plus climate conditions at applications were as follows:

Application timing	2 leaf	6 DAT	9 DAT	4 leaf and 12 DAT	15 DAT	18 DAT	21 DAT
Date	May 20	May 27	May 29	June 02	June 04	June 06	June 09
Crop stage, leaf	1 to 1.5	3.5	3.5	4.5	4.5	4.5 to 5	6
Wild oat stage, leaf	2	2.5	3.5	3.5 to 4	4.5	4.5	4.5
Temperature, ° F	44	69	88	65	70	62	69
Relative humidity, %	42	36	39	35	80	72	54
Sky	Clear	Cloudy	Clear	Cloudy	Cloudy	Cloudy	Cloudy
Wind velocity, mph	4 to 6	10	7	2	6	4	8
Soil temp, ° F	47	69	58	59	60	59	61

Cool, wet conditions during June delayed symptom expression and efficacy compared to other environments, resulting in slower than normal control of wild oat treated with clodinafop at the 4-leaf stage. Clodinafop at 0.012 lb/A applied once at the 2-leaf stage provided greater wild oat control on June 13 and 20 than 0.05 lb/A clodinafop applied at the 4-leaf stage. Removing early season wild oat competition with 2-leaf applications resulted in at least a 50% yield increase compared with 4-leaf applications. Clodinafop at 0.012 lb/A applied a second time improved control of existing wild oat compared with a single application. Very few wild oat emerged after the 2-leaf application timing. Split-application with a 6 or 9 day separation in treatments provided the best season-long wild oat control. A longer delay between applications did not greatly affect mid-season weed control or final wheat yield, although wheat yield tended to be less if the second application was delayed beyond 9 days.

Table. Interval between clodinafop split-applications to control wild oat (Howatt, Roach, and Davidson-Harrington).

Treatment[a]	Rate	Application timing	June 13 AVEFA	June 20 AVEFA	July 14 AVEFA	Aug 08 Yield
	(lb/A)		(%)	(%)	(%)	(bu/A)
Clodinafop + PO	0.05	4 leaf	35	82	97	22
Clodinafop + PO	0.025	4 leaf	37	85	97	20
Clodinafop + PO	0.012	2 leaf	74	90	89	34
Clfp + PO / Clfp + PO	0.012 / 0.012	2 leaf / 6 DAT	86	96	98	41
Clfp + PO / Clfp + PO	0.012 / 0.012	2 leaf / 9 DAT	84	97	98	41
Clfp + PO / Clfp + PO	0.012 / 0.012	2 leaf / 12 DAT	75	95	95	36
Clfp + PO / Clfp + PO	0.012 / 0.012	2 leaf / 15 DAT	75	92	97	35
Clfp + PO / Clfp + PO	0.012 / 0.012	2 leaf / 18 DAT	69	89	95	36
Clfp + PO / Clfp + PO	0.012 / 0.012	2 leaf / 21 DAT	72	88	94	39
Untreated	0		0	0	0	9
LSD (P=0.05)			6	4	3	6
CV			8	3	3	14

[a] PO = petroleum oil = DSV included at 1% v/v for all treatments; the symbol "/" indicates portions of the treatment were separated by time.