EVALUATION OF POST-HARVEST RESIDUE REMOVAL EQUIPMENT ON KENTUCKY BLUEGRASS GROWN FOR SEED IN CENTRAL OREGON UPDATE

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Post-harvest residue management methods were evaluated in a study initiated in 1991 on two commercial Kentucky bluegrass *(Poa pratensis L.)* fields in central Oregon which had been planted in the fall of 1990. One field was planted with an aggressive variety and the other field with a non-aggressive variety. [Aggressive varieties included those that were highly rhizominous and fill in between a 30 cm row spacing within a year or two. Non-aggressive varieties included those that were less rhizominous.] Additional locations including aggressive and non-aggressive varieties were added to the study each year through 1993 until a total of six locations were included. Per field, residue treatments were organized in a randomized block design with four replications. Because the standard industry practice for residue management of grass seed fields began with baling the straw prior to open-field burning, all residue management treatments in this study included this practice. When averaged over all test sites, seed yield and fertile tiller numbers were highest with the open field burning treatment (100 percent). In comparison, for plots in which residue was removed by vacuum-sweep followed by propaning, vacuum-sweep alone, flail-only and bale-only, mean seed yields were 85, 85, 79, and 67 percent, respectively per two fields in 1992; were 94, 90, 90, and 83 percent, respectively per four fields in 1993; and were 94, 86, 80, and 75 percent, respectfully per six fields in 1994. Wheel rake treatments were harvested in 1993 and 1994 with mean seed yields of 91 and 86 percent compared to open field burning. Seed yields were lowest for fields in the fourth year of harvest when compared to third and second year harvest. Statistical significance for data from individual fields will be discussed. Fertile tiller numbers followed the same trend as seed yields. Thousand seed weight and seed germination percentages were comparable among all treatments for each field ($P < 0.05$), and were unaffected by residue management. This study will continue through 1996.

Table 1. Effect of residue management on mean seed yields in Kentucky bluegrass in Madras Oregon for 1992-1994

	lb/A					
VARIETIES	Abbey	Rugby	Merit	Rugby	Abbey	Bristol
1994						
TREATMENTS	4th Year		3rd Year			2nd Year .
Rake + Prop	NA*	NA	1150 bc	NA	860 b	1117 a
Field Burn	1228 a	1064 a	1428 a	1547 a	1077 a	1112 a
Vac + Prop	1124 ab	1013 a	1178 ab	1526 a	973 ab	1180 a
Vac	1006 bc	773 b	1037 bcd	1389 ab	1090 a	1121 a
Flail + Rake	907 cd	770 b	994 cd	1320 ab	1107 a	1255 a
Flail	800 d	760 b	990 cd	1298 ab	973 ab	1107 a
Bale only	902 cd	544 c	917 d	1104 b	965 ab	1147 a

1993				
TREATMENTS	3rd Year		2nd Year	
Flail +Rake + Prop	NA	NA	1768 a	NA
Field Bum	1170 a	978 a	1671 a	1066 a
Vac + Prop	1009 ab	1003 a	1619 abc	962 a
Vacuum Sweep	931 ab	860 ab	1684 ab	987 a
Flail + Rake	1064 ab	848 ab	1529 abc	992 a
Flail	983 ab	919 ab	1475 c	988 a
Bale only	815 b	798 b	1573 bc	912 a

1992		
TREATMENTS		2nd Year
Field Bum	1996 a	1262 a
Vac + Prop	1842 ab	983 b
Vacuum Sweep	2010 a	863 b
Flail + Rake	NA	829 b
Flail	1676 b	915 b
Bale only	1752 b	570 c

*data for each variety and trial was analyzed separately for each year, so analyses above represent 12 separate analyses means followed by the same letter are not statistically different by Duncan's multiple range test at 5 percent level