

Section IV
Biological & Cultural Controls

COMPARISON OF 4 VARIETIES OF SPRING WHEAT FOR RESISTANCE TO
RUSSIAN WHEAT APHID AND HESSIAN FLY

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Four varieties of spring wheat: Alpowa, Centennial, ID488, and Wakanz, were seeded in a randomized complete block design on the USDA-ARS Western Regional Plant Materials Introduction Center at Central Ferry, Washington. Four replicates of 15 x 354 ft were used per variety, with evaluations of heads/ 10 plants, tillers/ 10 plants, % Hessian fly (HF) infested tillers. % Russian wheat aphid (RWA) infested tillers, and % RWA attacked by the parasitoid *Diaeretiella rapae* (M'Tosh) (DR) at 65-DAE. Harvest data was collected by cutting 12 ft strips from each replicate, weighing the grain, and calculating yield per acre in bushels and test weight per bushel. The variety Wakanz was significantly different from the others in HF resistance with no HF infested tillers. ID488 showed some HF resistance, while Alpowa and Centennial were equal in susceptibility to HF. Wakanz was significantly more susceptible to RWA infestation compared to the other varieties. Alpowa and Centennial were similar in RWA susceptibility, with ID488 demonstrating RWA resistance. DR did not parasitize the RWA on ID488, possibly due to low populations. Alpowa yielded than Centennial and ID488 due to lodging produced by HF. Wakanz was significantly lower in yield than the other varieties due to RWA damage.

Means for 4 varieties spring wheat at 65-DAE (Feeks scale 10.5)

Variety	Bu/Ac	Tw/Bu	%Prot	Heads/	Tillers/	Hessian		
				10 plants	10 plants	fly%	%RWA	%D. rapae
Alpowia	20.7b	54.7b	14.5b	61.0a	82.0a	17.07c	73.17b	80.0b
Centennial	34.4a	57.2a	14.4b	58.5a	73.8ab	15.07c	83.52bc	80.0b
ID488	36.2a	57.9a	13.7b	55.3ab	64.0b	7.81b	4.68a	0.0a
Wakanz	16.9c	50.9a	16.1b	48.0b	63.5b	0.0a	100.0c	83.0b

Means followed by same letter and not significantly different. LSD 0.05; ANOVA.