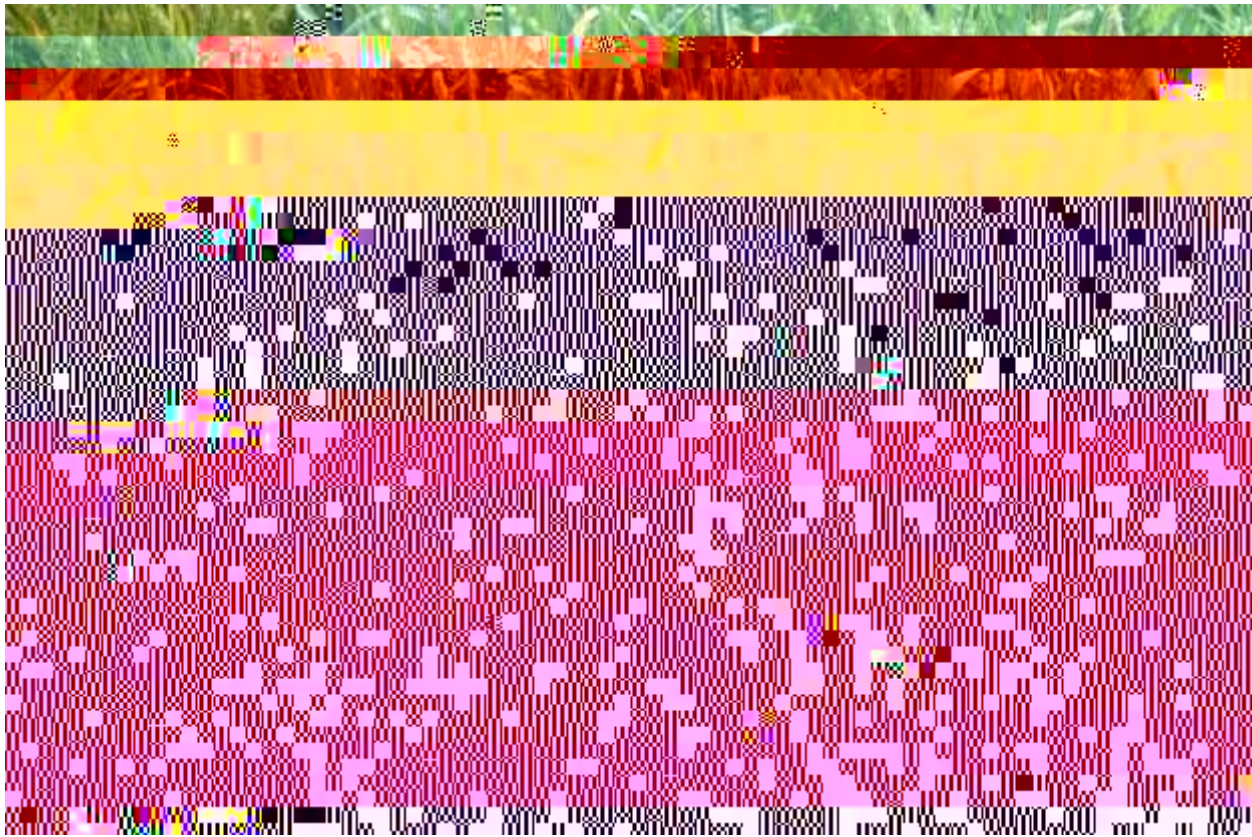


2010 Spring Cereal Grain Forage Trials



Barley and forage brassica in a mixed seeding

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0.10). Variations in yield and quality can occur because of variations in genetics, soil, weather, and other growing conditions. Statistical analysis makes it possible to determine whether a difference among hybrids is real or whether it might have occurred due to other variations in the field. At the bottom of each

SILAGE QUALITY

Silage quality was analyzed by Cumberland Valley Analytical Forage Laboratory in Hagerstown, Maryland. Plot samples were dried, ground and analyzed for crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (NDF), and various other nutrients. The Nonstructural Carbohydrates (NSC) and Total Digestible Nutrients (TDN) were calculated from forage analysis data. Performance indices such as Net Energy Lactation (NEL) were calculated to determine forage value. Mixtures of true proteins, composed of amino acids, and nonprotein nitrogen make up the crude protein (CP) content of forages. The bulky characteristics of forage come from fiber. Forage feeding values are negatively

Table 5. Dry matter yield and quality of annual spring forages at different harvest stages.

Harvest stage	DM at harvest	DM yield	Forage quality characteristics					
			CP	ADF	NDF	dNDF	TDN	NEL
	%	lbs/ac	%	%	%	%	%	Mcal/lb
Boot	14.8	2030	19.2*	29.0*	44.4*	64.1*	63.4*	0.66*
Milk	27.5*	5680*	10.2	38.3	59.5	51.1	58.6	0.59
Soft dough	26.3*	5830*	10.0	37.4	54.9	47.0	57.9	0.59
LSD (0.10)	1.32	329	0.54	0.77	1.57	1.70	0.58	0.01
Means	22.9	4510	13.1	34.9	52.9	54.0	60.0	0.61

* Treatments that are not significantly different than the top performing treatment are indicated with an asterisk.

Each harvest time was analyzed separately to determine if the grain species

Table 7. Dry matter yield and quality of annual spring forages harvested at the milk stage.

Small grain milk harvest	DM at harvest %	DM yield lbs/ac	Forage quality characteristics					
			CP %	ADF %	NDF %	dNDF %	TDN %	NEL Mcal/lb
Barley	31.0*	4710	10.2	35.2*	57.0*	45.4	60.8*	0.58
Everleaf oats	19.2	5790	11.1	39.6	62.3	60.4*	57.5	0.59
Oats Plus mix	30.9*	5350	10.4	38.1	59.4*	47.3	58.4	0.60
Spelt	26.8*	4450	9.20	39.0	59.7*	54.4	58.4	0.60
Spur oats	28.7*	7270*	9.80	39.5	61.4	46.8	57.7	0.59
Triticale	28.3*	6470*	10.7	38.3	57.1*	52.0	58.8	0.60
LSD (0.10)	4.43	1020	NS	2.18	3.08	4.87	1.84	NS
Mean	27.5	5680	10.2	38.3	59.5	51.1	58.6	0.59

* Treatments that are not significantly different (P > 0.05) by Duncan's multiple range test.

Spring Cereals Combined with Forage Turnips

Brassica forage crops have been reported to have near concentrate quality. This forage crop also prefers to grow under cool weather conditions. This project was interested in evaluating the impact that brassica would have on overall forage yield and quality when mixed with spring cereal grains. Barkant forage turnips were mixed with triticale, spelt

When evaluating the main effect of cereal grains (across all harvest dates) dry matter yields ranged from 3,300 matter per acre with or without turnips. Spelt was the lowest yielding forage crop with and without turnips. When spelt was interseeded with turnips, it decreased fiber concentrations as compared to the other treatments.

Table 8. Yield and quality of annual spring forages interseeded with turnips

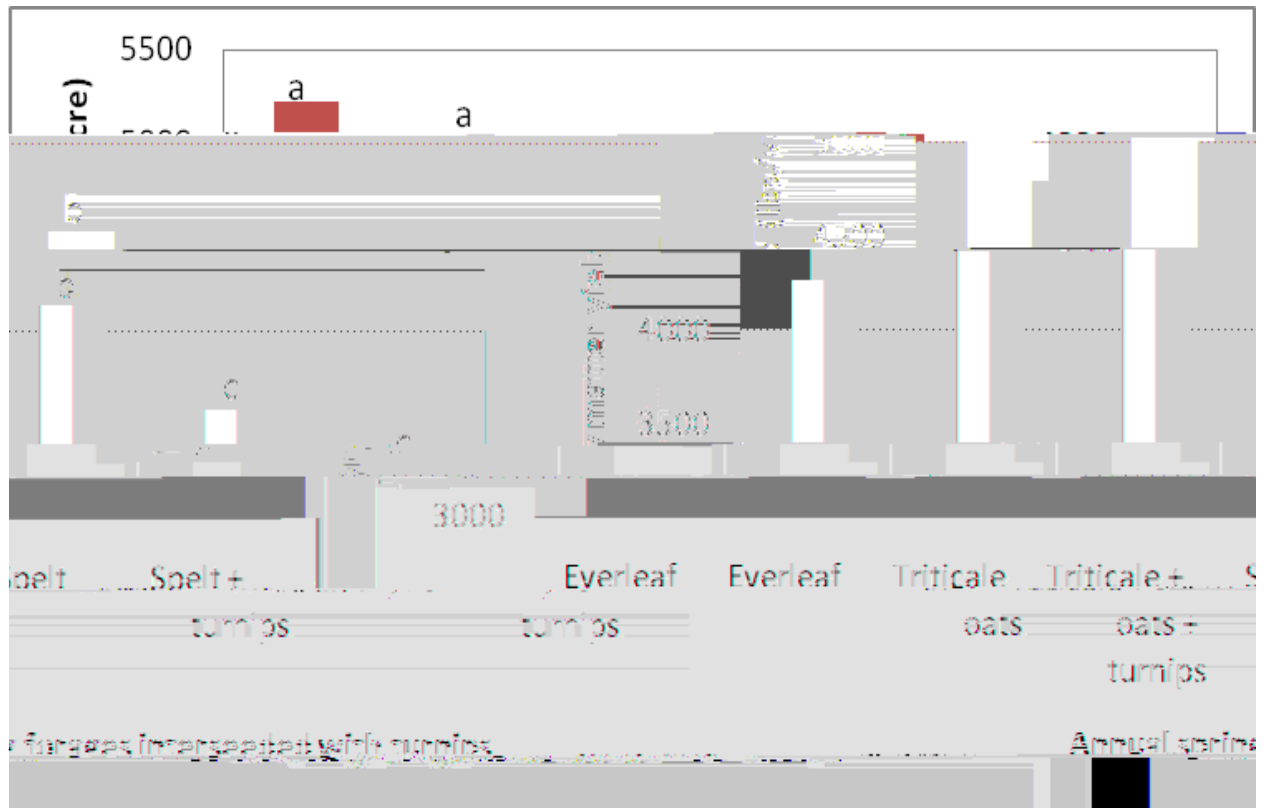


Table 10. Yield and quality of spring cereals with/without turnips harvested at the boot stage.

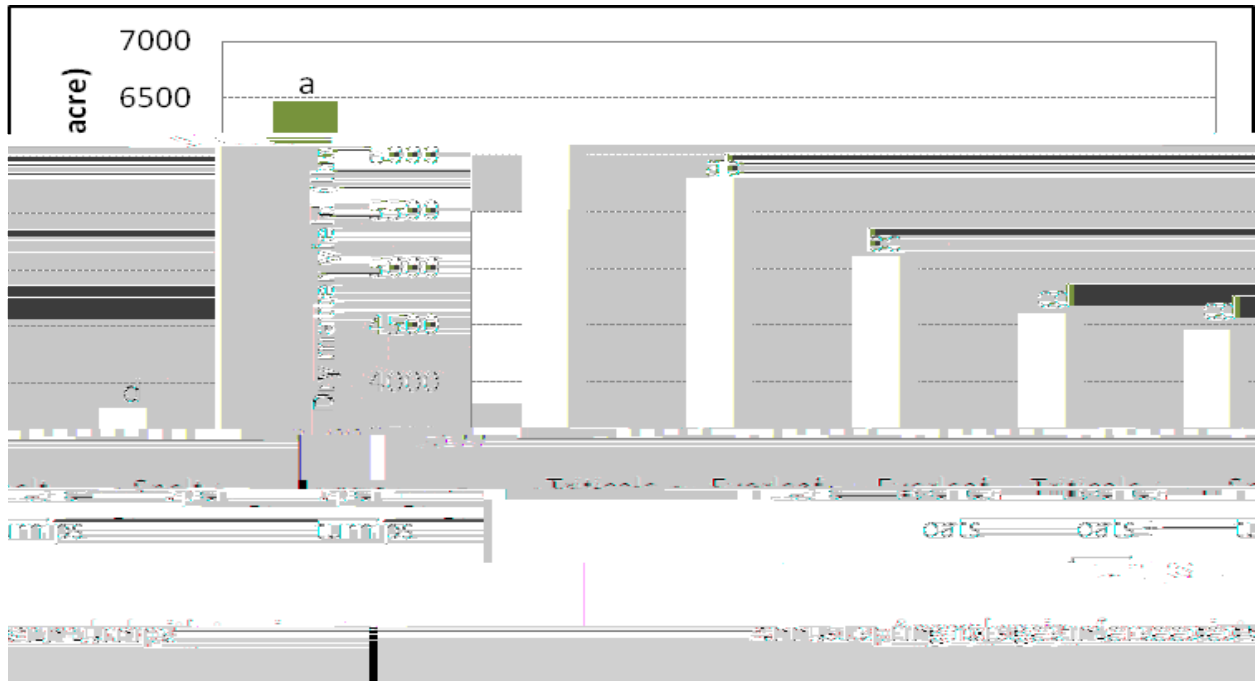


Figure 2. Yield of annual spring forages interseeded with turnips at the milk stage.

(Table 12; Figure 3) The oats were producing on average 3.9 dry tons per acre while the spelt and triticale treatments were yielding an average of 2.4 tons per acre. The triticale alone had a CP concentration of 12.5%, which was 1 to 2-percentage point higher than the other treatments. Triticale and the spelt with turnips resulting in the highest quality forage when harvested in the boot stage.

Table 12. Yield and quality of spring cereals with/without turnips harvested at soft dough stage.

Small grain +
turnips
soft dough harvest

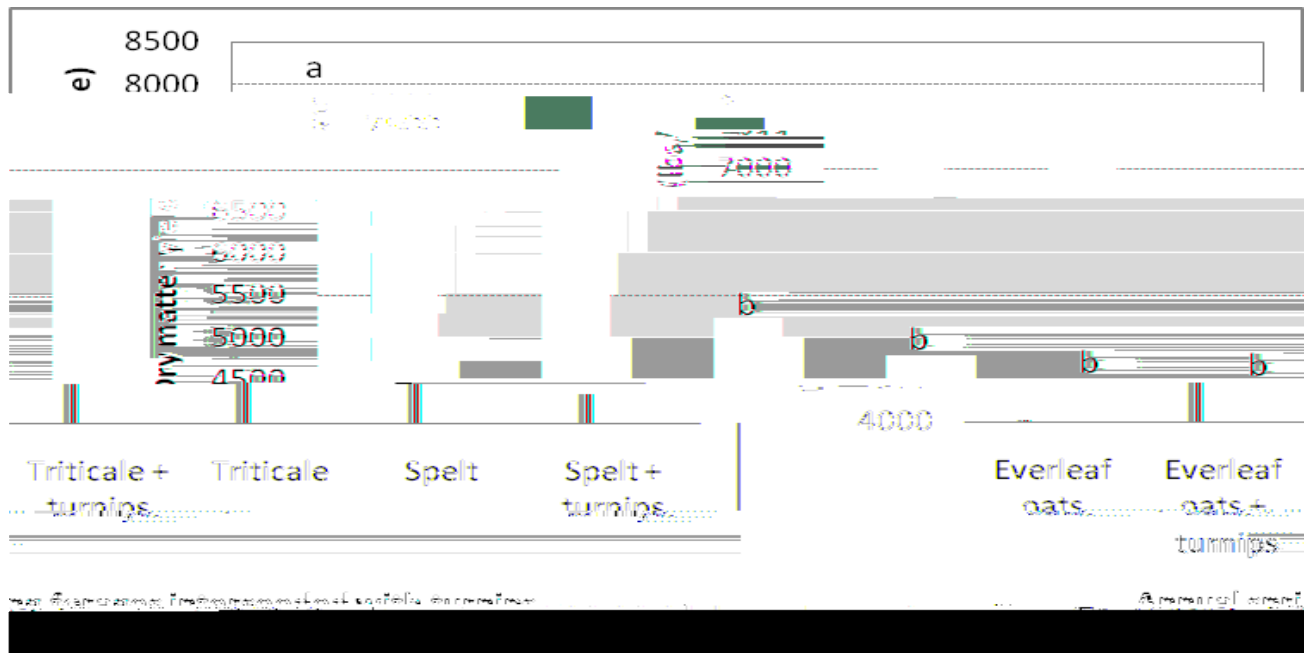


Figure 3. Yield of annual spring forages interseeded with turnips at the soft dough stage.

An analysis was conducted to compare if the addition of turnips could improve yield and quality of spring-

Table 15. Yield and quality of spring cereals with/without turnips harvested at soft dough stage.