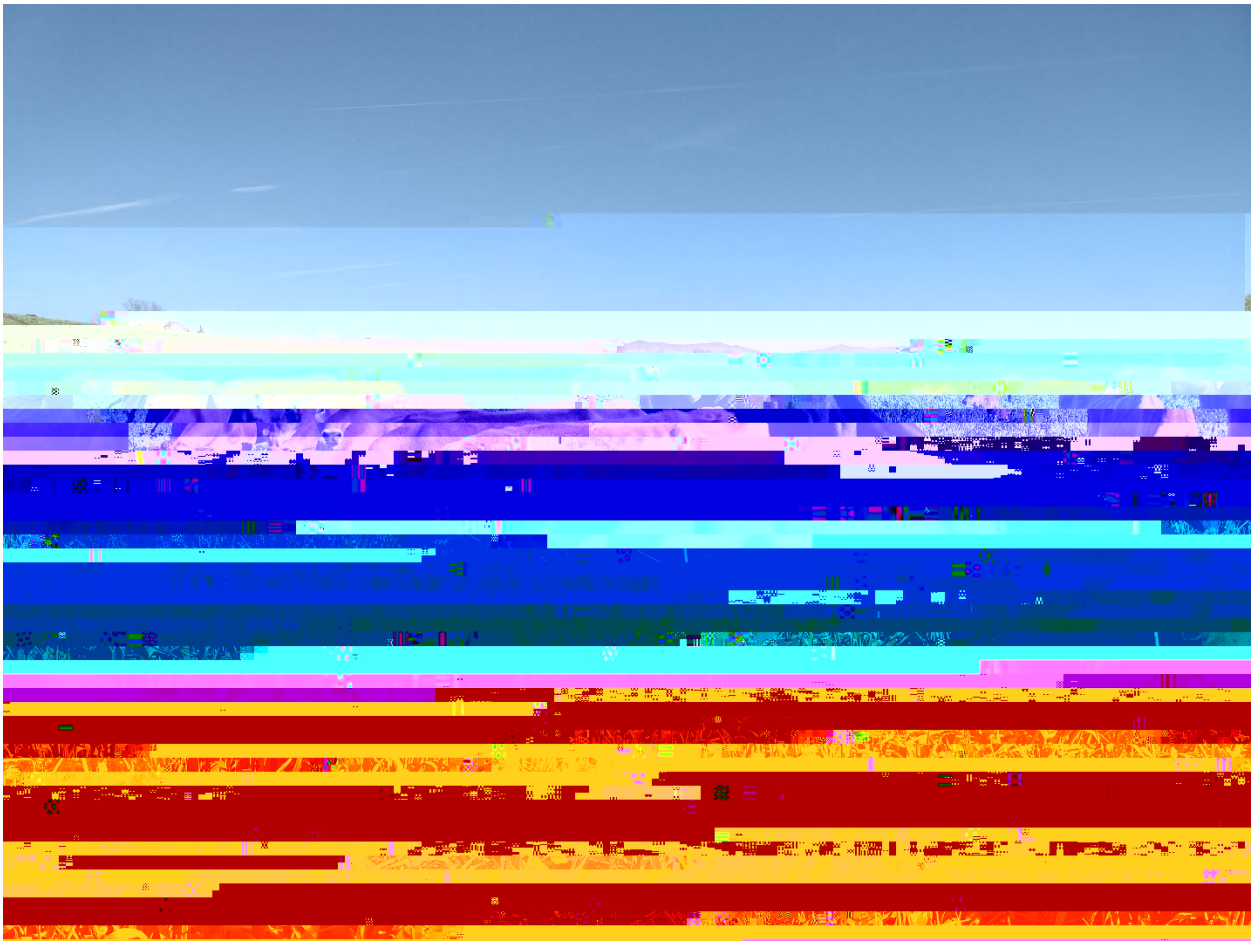
2022 Fall Annual Forages Trial



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THE UNIVERSITY OF VERMONT EXTENSION

2022 FALL ANNUAL FORAGES TRIAL

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In 2022, the University of Vermont Extension's Northwest Crop and Soils Program evaluated the performance of mixtures of peas with oats and triticale intended for use as forage for livestock. In the Northeast, cool season perennial grasses dominate pastures and hay meadows that farmers rely on. Often during the fall months, perennial pasture will decline in yield and quality. The addition of cool season annual forages into the grazing system during this time may help improve the quality and quantity of forage and potentially extend the grazing season. Depending on the species they may also be harvested for stored feed. Incorporating legumes into a mixture with grasses can help supply nitrogen, increase protein and fiber digestibility. However, forage legumes tend to be less aggressive and productive than grasses and therefore can be more challenging to establish in a mixture. We compared three varieties of oats and triticale in combination with three rates of forage peas to evaluate potential differences in forage yield s am0 g0 G[ )dM

Table 2. Treatment information, 2022.

Variety/Species	Pea inclusion %
Badger grain oat	0
	25
	50
Everleaf forage oat	0
	25
	50
Surge triticale	0
	25
	50

The samples were analyzed for crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (NDF), and 48-hour NDF digestibility (NDFD), non-fiber carbohydrates (NFC), relative forage quality (RFQ), net energy of lactation (NE_L), and total digestible nutrients (TDN) at the E. E. Cummings Crop Testing Laboratory at the University of Vermont (Burlington, VT) with a FOSS NIRS (near infrared reflectance spectroscopy) DS2500 Feed and Forage analyzer. Mixtures of true proteins, composed of amino acids, and non-protein nitrogen make up the crude protein content of forages. The bulky characteristics of forage come from fiber. Forage feeding values are negatively associated with fiber since the less digestible portions of the plant are contained in the fiber fraction. The detergent fiber analysis system separates forages into two parts: cell contents, which include sugars, starches, proteins, non-protein nitrogen, fats and other highly digestible compounds; and the less digestible components found in the fiber fraction. Chemically, this fraction includes cellulose, hemicellulose, and lignin. Because of these chemical components and their association with the bulkiness of feeds, NDF is closely related to feed intake and rumen fill in cows. Some of the NDF is digestible, however. This fraction is reported as NDFD and is represented as a percentage of the total NDF.

Results were analyzed using a general linear model procedure of SAS (SAS Institute, 2008). Replications were treated as random effects, and treatments were treated as fixed. Mean comparisons were made using the Least Significant Difference (LSD) procedure where the F-test was considered significant, at $p<0.10$. 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 varieties is real, or whether it might have occurred due to other variations in the field. At the bottom of each table, a LSD

Table 4. Dry matter, component, and milk yield from 9 small grain/pea mixtures, 2022.

Variety/Species	Pea inclusion	Height	Dry matter yield	Protein yield	WSC yield	30-hr

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