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Published by: North Dakota State University, Fargo, ND.

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## Nutritional composition of selected invasive species

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### Abstract:

It has long been recognized that weed management systems on rangelands could incorporate grazing as an effective tool using an integrated pest management system. The objective of this study was to evaluate the nutritional composition of spotted knapweed (*Centaurea maculosa* Lamarck), diffuse knapweed (*Centaurea diffusa* Lamarck), leafy spurge (*Euphorbia esula* L.), and Canada thistle (*Cirsium arvense* L.) near Big Timber, MT and Bowman, ND. Samples from the aforementioned species were collected monthly during the growing season (May-October). Plant specimens were separated into rosettes, leaves, stems, and whole plant. Crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (lignin), in vitro dry matter digestibility, and minerals were analyzed on each of the plant parts. Preliminary data to date include CP and ADF from the Bowman study site. Crude protein was greater ( $P < 0.05$ ) and ADF lower ( $P < 0.05$ ) in leaf tissue than stem material for all clipping dates (22 May, 22 June, 19 July, 22-August, 10 October) for all species. Crude protein content of leafy spurge stems was 8.0, 6.1, 4.1, 3.1, and 3.2 % for the aforementioned dates while 27.0, 17.5, 20.6, 13.5, and 12.4 % for leaf tissue. The ADF content ranged from 51.7 % on 22 May to 60.6 % on 10 October for leafy spurge stems and 16.1 % on 22 May to 16.9 % on 10 October for leaves. Only leafy spurge contained a low ADF content in leaf tissue from 22 May through 10 October (16.1, 20.5, 23.5, 14.2, and 16.9 %). Nutritional quality was much higher in leaf tissue than stem tissue for all four-plant species. It appears leafy spurge provides the highest CP content and a lower ADF content during the second half of the growing than the other plant species.