



Estimating Forage Yields on Salvaged Grain Crops

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Managing Business Stress
Options, Information & Tools for Alberta Producers

When conditions are dry, livestock producers often acquire crops that are not harvestable for grain production to supplement their forage and grazing stocks. It is strongly recommended to estimate the crop's yield potential before striking an agreement to salvage a crop for feed. A hands-on, field-level yield estimate goes a long way towards preventing a discrepancy that may arise from differences in rough estimates, best guesses, "eyeballing" or "ball parking" the crop.

Measure What's There

Swathing an area of the crop, baling it, and weighing the bales can provide a measure of forage yield. The area of crop baled can be extrapolated to a field level yield estimate.

Another method is to cut and weigh square meter samples from the crop to determine yields. If this is done in 10 areas of the field and the weights are averaged, then this should provide a reasonable estimate of the average "moist" yield of the field.

Convert Moist Yield to a Dry Matter Basis

The moisture content of standing crops can vary significantly. In order to create a solid footing for a bid and offer, moist yields should be converted to a dry matter basis. Moisture levels can be determined by using the microwave method.

Microwave Oven Method for Determining Moisture Content Of Forages

1. Weigh out approximately 100 g sample of the forage (W1) excluding the weight of the container. Weigh to the nearest gram.
2. Spread the weighed forage sample on a paper plate or place it in a paper bag and put it in the microwave oven.
3. Place an 8 oz glass three-quarters full of water in the oven to prevent igniting the sample.
4. Heat at 80 per cent to 90 per cent of maximum power for 4 minutes.
5. Remove the sample, mix it and weigh it.
6. Continue to reheat for 2 minute intervals, re-weighing each time. To prevent burning use lower heat and 30 second time intervals as it

approaches being dry. If the weight of the sample does not change after two or three drying intervals, it is 100 per cent dry. This is the final dry weight (W2). A slightly charred sample should not affect accuracy of the moisture determination, but if the sample burns, the test should be repeated.

7. Calculate moisture content as follows:

$$\text{Moisture content} = \frac{(W1 - W2)}{(W1)} \times 100$$

W1 (sample weight) = 100 grams
W2 (dry weight) = 36 grams

$$\text{Moisture\%} = \frac{100 - 36}{100} \times 100 = 64\%$$

Other Agronomic Considerations

Many fields in crop production are not suitably fenced for grazing. Constructing a perimeter fence can be done easily with electric fence, it also allows for limiting access to the whole field. Cross-fencing reduces wastage and encourages livestock to consume the whole plant.

Swathing a grain crop prior to grazing prevents the crop from becoming too mature because forage quality decreases as crops mature. Limiting access to the swaths similarly reduces wastage and encourages livestock to eat the complete plant.

Analyze stressed crops for nitrates to prevent nitrate poisoning when feeding salvaged crops.

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Questions:

Please call the Ag-Info Centre at 310-FARM

¹ This article is an update of an earlier publication, "Determining Yields of Droughted Crops", authored in 2002 by Arvid Aasen, Pasture Agronomist, Western Forage/Beef Group, Lacombe Research Station