Carcass Information and the Beef InfoXchange System (BIXS)

About BIXS Carcass Information

BIXS is a voluntary national internet database designed to store and exchange data linked to an individual animal's unique CCIA/ATQ ID tag number. Through a collaboration between the Canadian Cattlemen's Association and Canadian packers, carcass information for individual animals is being made available to producers in the BIXS database. The current requirement to view carcass information for a specific animal is registration in the Beef InfoXchange System (BIXS) as well as ownership of that animal at some point in its life. Once the CCIA ID is recorded in the BIXS database, a producer will be able to view carcass information for that animal when it becomes available.

Operation of a computer vision grading system to assess quality and yield of beef carcasses.

Computer Vision Systems for Beef Grading

The beef grading system utilizes multiple criteria to determine quality grade for youthful cattle (see Table 1). In the past a grader working at a larger plant with a moving carcass rail would have approximately 15 seconds to complete the quality assessment using these criteria as well as yield grade determination. With sufficient experience a reasonably accurate grade could be assigned although it would be difficult to take actual measurements of the fat depth or ribeye dimensions to most accurately estimate lean yield %.

A computer vision system (CVS) utilizes a camera with special lighting to photograph the ribeye at the grading site between the 12th and 13th rib. This photograph is then analyzed by a computer to determine marbling levels as well as accurate ribeye measurements. The CVS also allows the grader to input additional information or to manually assess a grade when a carcass is missplit and accurate analysis by the camera is currently not possible. As CVS equipment continues to become more sophisticated, the ability to predict meat quality and yield will be further enhanced. An additional benefit of CVSs is the ability to capture carcass information electronically and to store the information in the BIXS database for later retrieval by producers.

Table 1: Canadian Quality Grade Criteria for Youthful Cattle

Grade	Muscling	Rib Eye	Marbling**	Fat Colour & Texture	Fat Depth
Prime, AAA, AA. A	Good to excellent with some deficiencies	Firm, bright red	Prime - slightly abundant, AAA - small, AA - slight A - trace	Firm, white or amber	2 mm or more
B1			Not Specified	Firm, white or amber	< 2 mm
B2	Deficient to excellent	Bright red		Yellow	Not specified
B3	Deficient to good	Bright red		White or amber	
B4	Deficient to excellent	Dark red		Not specified	
E*	Pronounced masculinity				

 * E grade cattle may be youthful or mature

** minimum marbling requirement for each grade
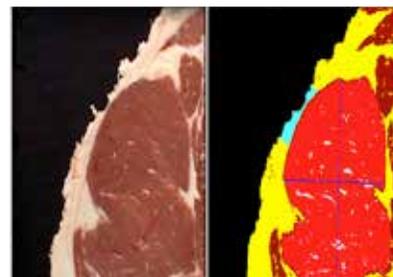
Learn more at: bixs.cattle.ca

Understanding BIXS Carcass Information

The BIXS system provides information on the attributes shown in Table 2 for carcasses assessed using computer vision systems at participating plants. The carcass information available to producers then exceeds the typical 'grading' information, which often consists of only the quality and yield grade designations. If computer vision systems are not utilized by a participating plant a smaller amount of information is available.

Carcass yield related information may be reported differently by small plants versus larger facilities. Canada will be moving to a 5 class system in the future so plants using a CVS will provide the USDA 5 class yield grade along with the USDA fat thickness and yield percentage. Smaller facilities with manual grading may continue to provide a 3 class estimate using the current Canadian system and provide the Canadian fat thickness and yield percentage.

It will take at least one week for an animal's carcass data to appear in the BIXS database. In some cases information may not be available because of a lost or difficult to read tag or issues with the carcass which made it difficult to use the CVS.

Computer vision systems (CVSs) analyze a photograph of the ribeye at the grading site, located between the 12th and 13th rib.

BIXS will only provide information on animals classified by the grading system as of youthful maturity. Cow grades will not be stored in the database. Also, some types of data will only be available to the feedlot that sold the data to the packing plant.

Table 2: BIXS Carcass Information Parameters*

Parameter	Description	Example
CCIA /ATQ ID	Last 9 digits of the CCIA or ATQ identification number.	299 999 999
Hot Carcass Weight	Weight of the carcass before chilling in the cooler.	820 lbs
USDA Yield Grade	Yield grade class using the U.S. 5 class system. Values range from 1 to 5 where carcasses with the highest lean yield percentages are assigned a 1.	1.5
CAN Yield Grade	Yield grade class using Canadian class system. Value range from 1 to 3 where carcasses with highest lean yield percentages are assigned a 1.	2
Ribeye area	The surface area of the ribeye in square inches.	14.2 sq. inch
Ribeye width	The maximum width within the second and third quarter of the ribeye.	75 mm
Ribeye length	The maximum length of the ribeye.	150 mm
USDA Fat Thickness	The thickness of fat measured at the location on the ribeye used by USDA.	.36 inch
CAN Fat Thickness	The minimum thickness of fat measured at the location on the ribeye used by CBGA.	10 mm
USDA Lean Yield %	Expected percentage that is boneless, closely trimmed retail cuts from high-value parts of the carcass - the round, loin, rib, and chuck. Typical values range from 45% to 55%.	50.2%
CAN Lean Yield %	Expected percentage of the carcass that is red meat (dissectible lean). Note that the Canadian Lean Yield % considers trim so it will be larger than the U.S. value. Typical values range from 53% to 63%.	59.1%
Marbling Scores	Amount of marbling (fat deposits within the muscle) scored from 0 to 1000 where a higher number indicates greater marbling levels	424.9
Quality Grades	Canada's quality grade for youthful cattle include Canada Prime, AAA, AA,A, B1, B2, B3 and B4. (see table 1)	AA
Kill Date	Date the animal was killed at the slaughter plant	2012-02-24
Gender	The plant classification of whether the animal was a steer or heifer.	S or H
Carcass Value	The amount paid by the slaughter plant for the carcass (*for feedlots only*)	$1,700
Plant (name)	The name of the slaughter plant where the animal was processed	ABC Meats

*Not all parameters will be available nor collected or reported on all carcasses. Not all plants are using their CVS data for official grading purposes.

The BIXS Carcass Information Benchmark Report

About the BIXS Carcass Information Benchmark Report

The BIXS carcass information report allows a producer to benchmark performance for specific carcass attributes against the total BIXS carcass database.

The quality grade section of the report compares the percentage of your cattle receiving the Canada Prime, AAA, AA or A grade as well as the percentage assigned to the B or E quality defect categories. Your percentage is subtracted from the overall average so that a positive number in the difference column means that you have a greater percentage of cattle in a specific category. Additional carcass information such as marbling score and rib eye area is also provided.

In the yield component of the report the percentage of cattle falling into each yield grade is shown. The average fat measurement at the grading site along with carcass weight and yield percentage is provided.

How to Obtain Your Report

To view carcass data, you must have cattle registered in BIXS. This can be done by entering animals manually, by uploading a completed spreadsheet or by using the CCIA Tag Pull feature. These methods are all accessed from the Birth Date page in BIXS. Note that in order to retrieve carcass data the tag (animal) must have been in your possession/ownership for at least 30 days.

Once your animals are in BIXS you can access the benchmark report from the *Reports* section found on the main BIXS menu. You will encounter an Important Information page before the carcass reports. Links found at the bottom of the page allow you to print the document or proceed on to the carcass reports.

To generate a benchmark report select criteria from the *Report Parameters* section found on the right side of the page.

Business Name is a required field; select this first from the drop down list. Most producers will only have one business to choose from.

Enter either a *Starting Tag/Ending Tag* range **OR** a *Starting Birth Date/Ending Birth Date* range to maximize your results.

Sire Tag, Dam Tag and Gender are used to narrow your report results. These parameters will only work if you entered data in their corresponding optional fields when you registered your cattle in BIXS. The report will run without selecting these parameters.

Click *Generate Report.* A PDF document is created that can be saved or printed.
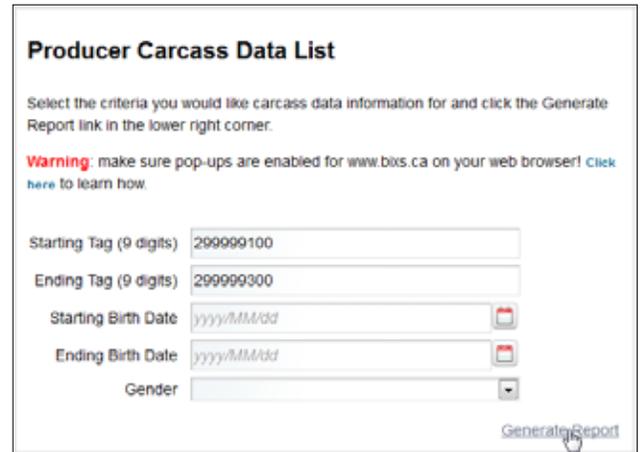
Viewing BIXS Carcass Data

How to Obtain a Listing of Your Carcass Data

The BIXS system will enable you to obtain a listing of carcass information for individual animals. This file is available in spreadsheet format which can be used for further analysis you may wish to undertake. The complete data available is listed along with the CCIA/ATQ ID.
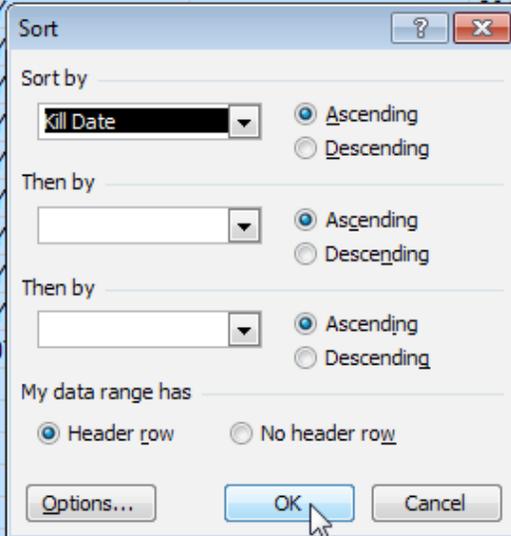
How to Obtain Your BIXS Carcass Data

Once your animals are in BIXS you can access the Carcass list from the Reports section found on the main BIXS menu. You will encounter an Important Information page before the carcass reports. Links found at the bottom of the page allow you to print the document or proceed on to the carcass reports.

To generate a Carcass list select criteria from the Producer Carcass Data List section found on the left side of the page. (Enable pop-ups for the BIXS site or the listing will not generate properly.)

Enter either a *Starting Tag/Ending Tag range* **OR** a *Starting Birth Date/Ending Birth Date* range to maximize your results.

Gender is used to narrow your results. This parameter will only work if you entered gender data in the corresponding optional field when the cattle were registered in BIXS. The report will run without selecting the gender field.

Click *Generate Report.* Once the carcass list is open in a spread sheet program (typically Microsoft Excel™), the data can be sorted by any column you choose. Sorting by Kill Date is a fast way to see the carcass information on the cattle selected.