

BEEFSPECS DRAFTING TOOL

The BeefSpecs suite of Tools aims to help producers understand the implications of a range of factors on individual carcass development and subsequent compliance of cattle mobs to market specifications. Knowing the market requirements is an essential part of this process and the Beefspecs tools help by predicting the carcass specifications of live animals and enabling users to quantify likely returns.

Information on the way that the Beefspecs Calculator works and how it predicts carcass specifications can be found at <http://beefspecs.agriculture.nsw.gov.au/>. The associated Tips and Tools documentation gives information about the main beef markets, how their specifications differ and how to comply.

The Beefspecs Drafting Tool is complementary to the BeefSpecs Calculator and utilises the predicted carcass information for individual animals to sort them into groups. This allows the user to identify the number of animals likely to meet market specifications. For those animals whose carcasses fall outside the premium area of the grid, it allows the user to try different management strategies to increase compliance rates or, alternatively, to identify a market with different specifications and estimate the subsequent compliance rate.

The Beefspecs Drafting Tool could be used by Feedlots, beef producers and agricultural consultants to maximise compliance and marketing profit.

Using the BeefSpecs Drafting Tool

The Drafting tool requires the user to enter existing animal data and expected performance information in the Production Inputs screen, pictured below, under a number of sub-headings.

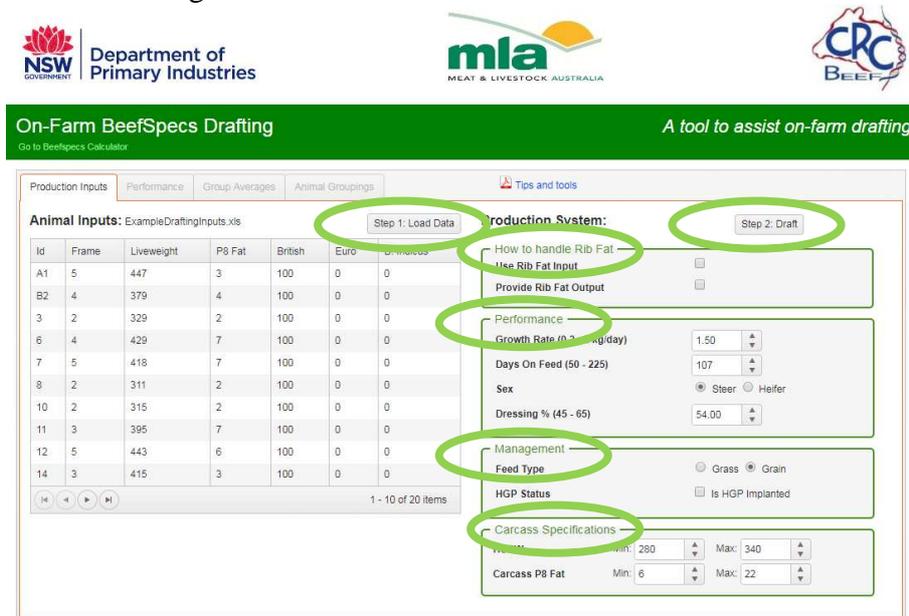


Figure 1. The on-screen display of the 'Production Inputs' tab in the BeefSpecs Drafting tool is used to load data and input information about Performance, Management, and Carcass Specifications (green circles highlight the sections that require inputs and the steps required to draft cattle)

Step 1: Load data

Click on this button (Figure 1) to Load an Example Dataset in the “Quick Start” option, or to Download a Template under “Upload data”. The downloaded template can be used to input your own data in the correct format, which can then be saved and loaded by choosing “Select data file”.

The data template is an Excel spreadsheet that has the following column headings:

- ID (animal identification; no units)
- Frame (Frame score)
- Liveweight (kg)
- Fat depth (mm) – either P8 or rib fat (if using rib fat then the “Use Rib fat Input” tick box needs to be ticked)
- British, Euro and *B. indicus* (estimated breed content- note that the BeefSpecs calculator visual depiction of a beast may be helpful here)

After loading data, a table containing individual animal records will be displayed (Figure 1). Click on the column headings in the table to sort the entire dataset, in ascending or descending order. Click the column heading again to restore the data to its original order. The arrows at the bottom of the table scroll through, or proceed directly to either end of, the dataset.

Additional information is then required for the tool to predict animal performance and carcass specifications:

How to handle Rib fat:

- allows initial rib fat to be used as an input rather than P8 fat,
- allows rib fat to be used as a carcass specification and to be predicted by BeefSpecs rather than P8 fat,
- and, allows rib fat to be selected as an input or output independently of P8 fat.

Performance

- growth rate (estimated average daily weight gain, kg/hd/day),
- days on feed (number of days on feed, based on a pasture feed budget or a feeding target in a feedlot),
- sex,
- and, dressing percentage (user estimated based on fat and muscle score, sex)

Management

- Feed type (grass or grain- note that a diet must consist of at least 70% grain in order to be classified as a grain diet)
- and, HGP status (Tick this box to indicate that the stock have been HGP treated will prompt the program to require either an androgen or oestrogen based HGP and the timing of the HGP implant relative to day 0 of the feeding period).

Carcass Specifications

Access these from the grid of potential target processors. Note that there may be other specifications, such as dentition, meat colour etc, that are not accounted for here.

- Minimum and maximum HSCW (hot standard carcass weight, kg)
- Minimum and maximum carcass P8/rib fat(mm)

Hold the cursor over the input boxes in the Performance, Management and Carcass Specification sections to access brief explanations of the required input. Additional information on performance and management inputs are available in the Tips and Tools of the BeefSpecs calculator.

Step 2: Draft

Once all the data has been entered, click the “Step 2 Draft” button to go to the Performance screen.

Performance tab screen

The liveweight, HSCW and predicted P8/rib fat for each of the animals are reported in the predicted initial performance table (Figure 2). Animals are drafted into Groups, based on their HSCW and P8/rib fat, relative to the specifications entered.

There are 9 possible carcass groups (Table 1) based on the carcass specification inputs of P8/rib fat and HSCW (Figure 1). Group 1 contains animals whose carcasses are predicted to be below minimum fat and weight specs, Group 2 will be within the required fat range but below the minimum weight specified, and so on up to Group 9 (Table 1). Group 5 is the only group that contains carcasses that comply with both the specified HSCW and P8/rib fat.

Table 1. Group numbers allocated to each carcass indicate whether they are predicted to be below, within or above the specified maximum (max) and minimum (min) Hot Standard Carcass Weight (HSCW) and P8/rib fat. Green colouring indicates Group 5; these carcasses are within the specified range for both HSCW and P8/rib fat.

	Group 3	Group 6	Group 9
Max P8/rib fat			
	Group 2	Group 5	Group 8
Min P8/rib fat			
	Group 1	Group 4	Group 7
	Min HSCW	Max HSCW	

Group	Description
1	Below specified HSCW & P8/rib fat
2	Below specified HSCW but within P8/rib fat range
3	Below specified HSCW but above specified P8/rib fat
4	Within specified HSCW but below specified P8/rib fat
5	Within specified HSCW & P8/rib fat
6	Below specified HSCW but above specified P8/rib fat
7	Above specified HSCW but below specified P8/rib fat
8	Above specified HSCW but within specified P8/rib fat
9	Above specified HSCW & P8/rib fat

The compliance grid of the carcasses is also shown on the right hand side of the ‘Performance’ tab (Figure 2). Carcasses that are compliant are represented by blue dots while non-compliant carcasses are represented by orange dots. Each dot is surrounded by a white ‘cloud’ that represents the potential error associated with that dot as a result of differences that may occur between the actual and assumed average growth rate and/or dressing %. Placing the cursor over any dot will report the animal ID, HSCW and P8 fat of that animal and placing the cursor over the white ‘cloud’ will report the average HSCW and average P8/rib fat for that group of carcasses.

On-Farm BeefSpecs Drafting

A tool to assist on-farm drafting

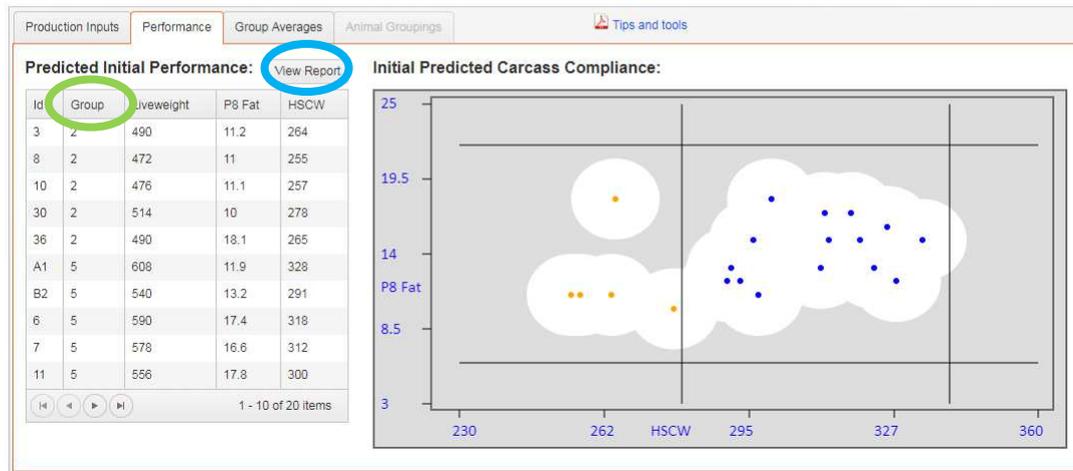


Figure 2. The ‘Performance’ tab in the BeefSpecs Drafting tool shows the initial performance of carcasses as a table and also as a compliance grid. In the table, for this scenario where P8 fat is being predicted, each carcass has been assigned to a Group (circled in green) based on the specified HSCW and P8 fat. In the graph of P8 fat (mm) versus HSCW (kg), non-compliant carcasses are shown as orange dots while compliant carcasses (group 5) are shown as blue dots, where horizontal and vertical lines indicate specified P8 fat and HSCW, respectively. The white cloud represents the variation around predicted performance for each animal. Click on the ‘View Report’ button (blue circle) to generate compliance summaries.

View Report

Within the Performance tab, click the “View Report” button (Figure 2) to generate a carcass compliance summary for both HSCW and P8/rib fat. The minimum, average and maximum figures for HSCW, P8/rib fat, and liveweight are also listed (Figure 3).

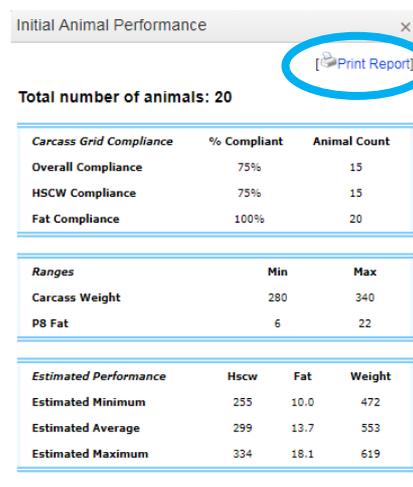


Figure 3. A summary report of carcass performance. Click on ‘Print Report’ (circled in blue) to print.

Group Averages tab screen

Carcass group data are shown here (Figure 4). Averages for liveweight (kg), P8/rib fat (mm) and HSCW (kg) for each group are reported. The HSCW, P8 fat (in this scenario) and overall compliance rates (%) for the base scenario are summarised in the bottom left corner of the screen (Figure 4).

Click on the arrows, or type in new figures, to adjust the Daily Gain, number of Days on Feed, Feed Type, HGP use or timing of HGP use within each Group (note: Group 5 is already within the specified HSCW and P8 fat ranges) and then select the **“Step 3: Re-Run”** button. The compliance rates reported for any Refined Management scenario can then be compared with the Base Scenario. Continue to change management scenarios until a satisfactory compliance is achieved.

On-Farm BeefSpecs Drafting A tool to assist on-farm drafting

Go to BeefSpecs Calculator

Production Inputs | Performance | **Group Averages** | Animal Groupings | Tips and tools

Potential Production Changes:

Group	Liveweight	P8 Fat	HSCW	Daily Gain	Days On Feed	Feed Type	HGP Type	Implant Day
1	-	-	-	-	-	-	-	-
2	488	12.3	264	1.50	107	Grain	None	0
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-
5	575	14.2	310	1.50	107	Grain	None	0
6	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-

Animal Compliance

	Base Scenario	Refined Management
Overall Compliance	75%	75%
HSCW Compliance	75%	75%
P8 Fat Compliance	100%	100%

Figure 4. The on-screen display of the ‘Group Averages’ tab reports group liveweight (kg), P8 fat (mm) and HSCW (kg) averages for each group. It also lists the overall compliance rate (%) for the base scenario as well as the individual HSCW, and P8 fat compliance rates and provides input cells for 5 potential production changes [daily gain (kg/hd/day), days on feed, feed type, HGP type, and or implant day]. The “Step 3: Re-Run” button circled in green is used to recalculate compliance after production changes are entered.

An example of Refined Management

In the Example Dataset, there are five carcasses that do not comply and these are all in Group 2, i.e. acceptable for P8 fat (Figure 3) but not minimum HSCW. The following steps are an example of potential production changes:

1. Increase the Days on Feed tab to 140 (numbers can be entered or the speed dial arrows can be used to get the desired value).
2. Select the **“Step 3: Re-Run”** button (Figure 4).
3. View results of the re-run. In this example the ‘Base Scenario’ HSCW compliance was 75% but after increasing the ‘Days On Feed’ for those

animals in Group 2, the ‘Refined Management’ increases compliance to 100% (Figure 5).



Figure 5. After increasing Days On Feed to 140 for animals in Group 2, and clicking “Step 3: Re-Run”, the compliance has improved from 75% in the Base Scenario to 100% in the Refined Management scenario.

Animal Groupings tab screen

The Animal Groupings tab (Figure 6) reports the final liveweight (kg), P8/rib fat (mm), and HSCW (kg) in a table and the final carcass grid in a graphical format, indicating compliance or non-compliance of the drafted cattle into various groups following changes to the management options.

The Final Predicted Carcass Compliance graph shows how the carcasses fit the specified grid. Those carcasses that are predicted to not meet the specifications in the ‘Base Scenario’ are still identified with orange dots. Predicted carcass data are listed in the ‘Animal by Group’ table. If there are numerous carcasses that do not meet minimum carcass P8/rib fat requirements then consider the feedlot market where animals are sold on a liveweight basis with minimal fat requirements. Note that liveweight specifications are required for feedlot entry.

Click the ‘View Report’ button (Figure 6) to view a summary sheet that lists the average performance for each of the Groups of animals represented in the Carcass Compliance Graph (Figure 6). Download the Drafting List (Figure 7) for individual carcass data in a spreadsheet.

On-Farm BeefSpecs Drafting

A tool to assist on-farm drafting

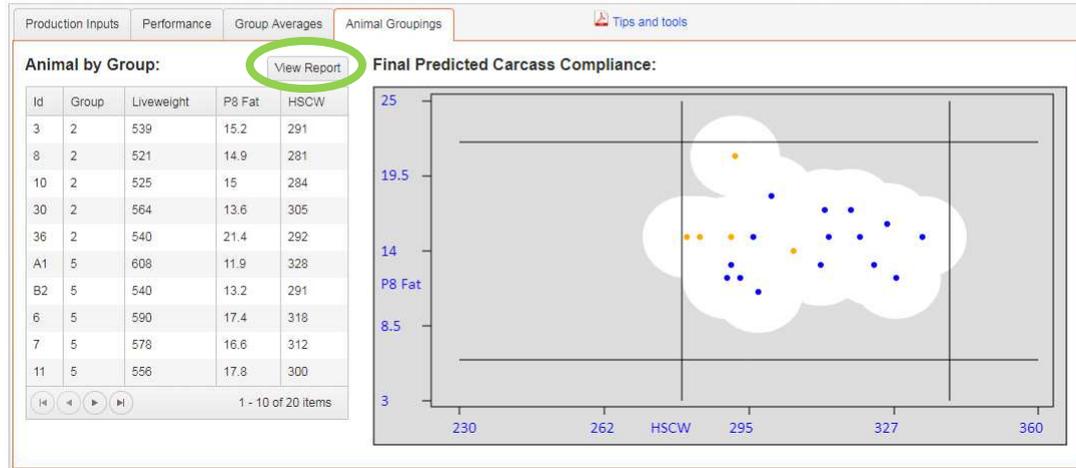


Figure 6. The ‘Animal Groupings’ tab reports final predicted performance as a table and carcass compliance grid. In the table, the original animal groupings are displayed but liveweight, P8 fat and HSCW have been updated according to changes made. In the graph of P8 fat (mm) versus HSCW (kg), carcasses that were originally non-compliant are still shown as orange dots but their specifications have been updated. Carcasses that were originally compliant (group 5) are still shown as blue dots.

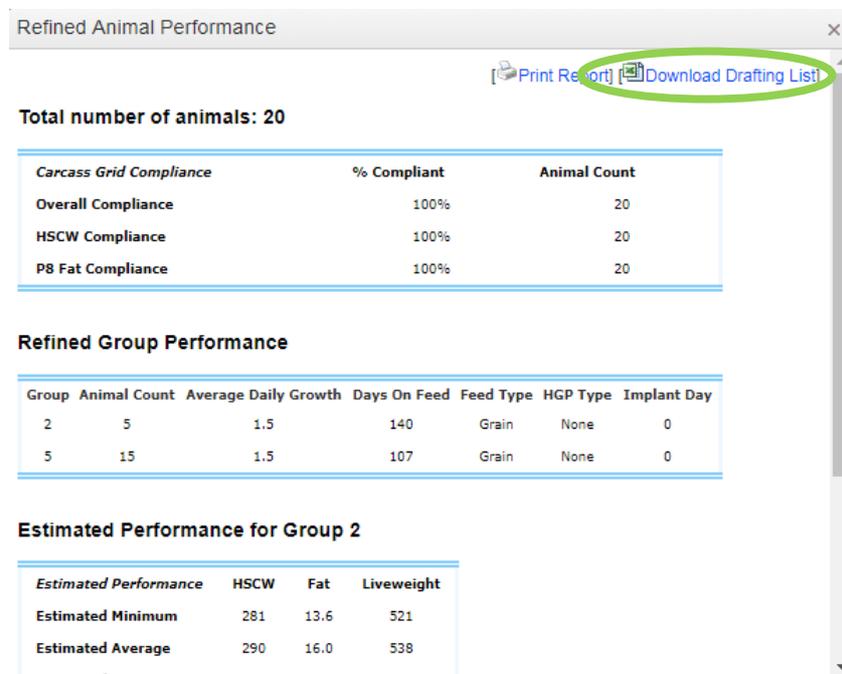


Figure 7. Report of the final refined animal carcass grid compliance (%) including animal numbers, production information on groups and the estimated performance for each group; green circle denotes a drafting list that could be downloaded.