

The role of liveweight scales in sheepmeat production

Edward Joshua

District Livestock Officer (Sheep and Wool), Primary Industries, Dubbo

Liveweight scales allow easy and accurate measurement of the body weight of sheep. In sheep production, liveweights are used to:

- estimate carcase characteristics for lamb and sheep marketing
- help selection of breeding animals
- monitor general flock progress
- accurately determine correct doses for animal health applications
- accurately determine animal requirements for drought and lotfeeding.

Sheep marketing

An accurate measure of liveweight is important to the sheep producer in gauging growth of stock, timing sales and live sheep assessment of carcase characteristics. Given an accurate liveweight obtained by using scales, the meat buyer or producer on farm can adjust the weight for skin weight, obtain a fat score and multiply by the dressing percentage, adjust for breed, time off feed, season and non-standard carcase trim to obtain a reliable estimate of carcase weight. Market reports for the identified sheep size, weight and carcase characteristics can then be sourced to monitor profitability of the operation.

An accurate measure of liveweight to provide reliable estimates of carcase characteristics provides the basis for sale lambs over the hooks.

Selection

Liveweight scales allow the collection of basic information about sheep that goes into the selection

tool LAMBPLAN so that sheep can be selected on genetic potential using Australian Sheep Breeding Values (ASBVs). ASBVs are available for growth, carcase, wool, reproduction and internal parasite (worm) resistance. ASBVs are directly comparable across flocks within a breed and across breeds in the terminal sire group of breeds.

Monitoring flock progress

Liveweight provides a good guide to sheep performance.

The progress of the flock can be monitored by weighing regularly or at critical times. Weights of the whole flock can be taken or a random sample (usually 10%) can be identified and weighed at regular intervals and the flock progress determined.

Ewe liveweight at joining is critical as higher body weights lead to better ovulation and conception rates. Sheep producers can set target average weights for ewes at mating and use scales to check



Figure 1. A drafting system incorporating a simple set of scales that use radio frequency identification (RFID) and a computer to provide a wide range of sheep management information.

on their progress towards these targets. Target liveweight will vary depending on the type of sheep involved. Larger frame sheep will have a higher target weight for joining than smaller frame animals.

Pregnant ewes need to be in good condition to ensure sufficient body reserves to cope with the heavy demands of late pregnancy and lactation. Weighing during pregnancy can help to determine body conditions. Because of the growth of the foetus, however, the body weights should be combined with a manual assessment of fat cover to give a more accurate indication of body reserves. Ewes properly fed and in good body condition will have less lambing difficulties, more milk and better lamb survival. Also, the progeny born will have a better expression of their genetic capabilities.

Dose rate for stock medicines

Many of the dose rates of modern drenches and pour-on dips are geared to bodyweight of the sheep. Scales can be used to:

- ensure you provide the correct dose
- draft stock into weight groups to make more efficient use of chemicals.

Drought feeding and lotfeeding

Liveweight is a very useful tool in calculating a sheep's feed requirements in both drought and lotfeeding rations.

Lotfeeding

Scales can be used in a feedlot to:

- determine which lambs are suitable for feedlotting
- sort lambs into weight ranges for more efficient feeding
- monitor progress
- decide when lambs are suitable for market.

Monitoring liveweight while in a feedlot can be used to determine when the animals will be ready for market and this can be used to figure out if it is economic to feed the animal to market specification.

Drought feeding

In time of drought, sheep are generally fed enough to survive. Sheep of different body weights and condition require different rates of feed for survival. Scales can be used to draft sheep into weight classes for correct feeding. This technique may save the sheep from underfeeding and will save money from overfeeding. During feeding the scales can be used to monitor progress and to determine that the selected feeding rates are appropriate.



Figure 2. In a good set of yards with good sheep flow, 250 to 300 sheep can be weighed in an hour using manual scales. Higher work rates with less labour may be achieved with automated scale equipment.

Types of scales

There are several types of scales on the market which vary around two similar themes.

Cage mounted on load cells. These are used in an existing race and have a digital weight read-out. They can be easily transported in a trailer or utility and some collapsible models can fit into the boot of a car.

Computer operated scales. These consist of a cage mounted on load cells and may have automatic drafting features; the animal is drafted in different directions based on preset weight ranges. They are designed to work at the end of an existing race in a semi-permanent position. They have a digital read-out and may have options for recording data for later use and may be combined with an RFID unit to identify individual sheep. These units may be transported but loading, unloading and setting up can be time consuming.

Scales, RFID units and drafters can be driven by software contained in a computer which may be developed by the operator or the supply company. It is important to ensure the software provides for the needs of the operator and manager of the livestock. It is combining new and existing technology that enables the manager to change from the current practice of managing the flock as a whole to managing individual animals or selected groups of animals that are better than the flock based on individual measurement of merit in a range of important traits. Greater detail can be obtained from the Sheep CRC at www.sheepcrc.org.au

Table 1. Manufacturers of liveweight scales.

Vendor	Contact	Phone	Web Address
Boontech	Boontech Pty Ltd PO Box 746 450 Central Road Kyneton Victoria 3444	(03) 5422 6300	www.boontech.com.au/
Gallagher Australia	http://www.gallagher.com.au/contact.aspx	(03) 9308 7722	www.gallagher.com.au/
Iconix	South Island and International 345 Thames Highway PO Box 220 Oamaru New Zealand	+64 3 4372548	www.iconix.co.nz/
Peak Hill Industries	Bill Byrne, Peak Hill Industries Newell Highway Peak Hill NSW 2869	(02) 6869 1700	www.peakhillindustries.com.au/
Prattley	PO Box 85 Wagga Wagga NSW 2650	(02) 6931 8411	www.prattley.com.au/
Racewell	Harrington Agricultural Products PO Box 160, Wallan Victoria 3756	(04) 0533 0702	www.harringtonag.com.au/
Thunderbird	Country Electronics 11 Industrial Ave Mudgee NSW 2850	Ph (02) 6372 3600 Fx (02) 6372 2597	www.thunderbird.au.com/
Tru-Test	2/2B Birmingham Ave PO Box 122, Villawood NSW 2163	Ph 1800 641 324 Fx 1800 831 847	www.tru-testgroup.com/
Atlex	PO Box 2052, Dubbo NSW 2830 Cnr Newell Highway & Burroway Road Dubbo NSW 2830	Ph (02) 6888 5004 Fx (02) 6888 5008	www.atlex.com.au/sheepyards/atlex-sheepyards-details#AT3

Acknowledgement

Andy Kajons, former District Livestock Officer
(Sheep & Wool) Bathurst.

Chris Shands, District Livestock Officer
(Sheep and Wool) Glen Innes.

© State of New South Wales through Department of Industry and Investment (Industry & Investment NSW) 2009. You may copy, distribute and otherwise freely deal with this publication for any purpose, provided that you attribute Industry & Investment NSW as the owner.

ISSN 1832-6668

Check for updates of this Primefact at:
www.dpi.nsw.gov.au/primefacts

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (September 2009). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of Industry & Investment NSW or the user's independent adviser.

Job number 9590 PUB09/103