

ELECTRONIC SYSTEM FOR SHEEP DATA COLLECTION PROVIDES IMPROVED LABOUR EFFICIENCY AND ACCURACY

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Livestock identification has become a high priority for the Australian meat industry. Clear, accurate identification provides the opportunity to trace diseases to property of origin and to assist with the maintenance of production and breeding records. It is essential that identification is long lasting and easily read. Visually-read ear tags are commonly used for sheep identification; however operators often experience problems with tag loss, poor readability, misreading or inaccurate recording of data.

A software system (Sheepone®) which is compatible with electronic tags has been developed to automatically capture sheep data and has been installed at DNRE Rutherglen and Hamilton. The system is connected to a sheep handler (Racewell®) that automatically captures and releases sheep. The handler incorporates scales (Iconix® FX21) which are programmed for automatic recording of live weight data by the software. Additional data such as fat and eye muscle measurements and reproduction status can be entered manually into the Sheepone® program.

To determine the efficiency of the electronic system, it was trialed against two methods of manual data collection. Adult first cross ewes (n=90) were fitted with a visually and electronically readable HDX sheep tag (Allflex®). Ewes were assessed for weight using all three methods: 1) Electronic reading of tags, weighed in Racewell® using Iconix® scales and electronically recorded; 2) Visual reading of tags, and weighed in Racewell® using Iconix® scales and manually recorded; and 3) Traditional – same as Visual, except weighed using manually operated scales. GR fat was scored using manual palpation and manually entered directly into the program (electronic) or onto a recording sheet (visual and traditional). Table 1 shows times taken to weigh and fat score sheep and manually input data. Accuracy percentages for recording and inputting of data were calculated.

Table 1. Time, labour and accuracy of assessing and recording live weight and GR fat of 90 sheep

Method	Assessment time (minutes)	Assessment labour (units ^A)	Data entry time (minutes)	Data entry labour (units ^A)	Recording Accuracy (%)	Data Entry Accuracy (%)
Electronic	39	2	0	0	100	100
Visual	39	3	8	1	97	99
Traditional	31	3	8	1	100	97

^A One labour unit = one person

Labour efficiency was greatly improved using the electronic method. Whilst assessment times were similar for all methods, fewer labour units were required to operate the electronic system. Automatic data capture and down loading of data ensures 100% data accuracy, as it eliminates transcription errors and the need to visually read tags. The incidence of operator error increases with an increase in the number of sheep assessed. Consequently the accuracy and labour benefits from using the electronic method will be more evident when larger numbers of sheep are assessed.

The Sheepone® program provides additional management benefits as it displays information such as pedigree, daily weight gain, reproduction and management history. These features enable immediate management decisions and drafting. The Sheepone® audio feature contributes to the smooth flow of sheep movement as it announces animal identification, confirms weight and provides an alert for individual animals.

The opportunity exists to develop similar electronic systems for other commercial livestock operations such as goats and deer.

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