Mobile phones for producer support: development of the drought and supplementary feed calculator apps

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Mobile phones have changed the way we communicate and do business. They are the 'go to' source of information providing handy Apps to solve problems on the spot. In October 2014 NSW Department of Primary Industries (DPI) released the first ever Drought Feed Calculator phone App (DFC App) for iOS and Android. By January 2018 it had been downloaded 10 000 times, and by July 2018, 18 000 times, corresponding with an increase in severity of drought in Eastern Australia.

Feed calculators are not new innovations, with a range of desktop tools available. They are often only adopted by advisers and a small percentage of the farmers who had participated in training workshops. The DFC App was designed to meet the needs of a broader audience. It had to be simple, taking complex calculations from the office to the paddock. User experience has been positive. In a survey of 460 users in 2020, more than 68% of users 'Agreed' or 'Strongly Agreed' the DFC App saved time and enabled the effective comparison of feeds and feed mixes, with more than 63% agreeing the DFC App was easy to use and saved money.

Feedback from users lead to the release in 2019 of the Drought and Supplementary Feed Calculator (DASFC). They wanted more capability: to calculate supplementary feed rations and calculate feed-out rates.

The App also needed to deal with the subjective nature of pasture assessment, varying levels of user knowledge, with the ability to educate and improve the accuracy of outputs while maintaining ease of use.

The design used PROGRAZE™ principles to guide inputs, using pasture height, density and digestibility, showing how they interact, impacting on intake and the energy needs of livestock met by pasture (Figure 1). The DASFC App has been downloaded over 3000 times. A web version is also available.

Both Apps use algorithms derived from SCA (CSIRO, 2007) and GrazFeed (Freer et al 1997) with simplified inputs. Practical features of the DASFC include: memory to save and clone mobs; DPI feeds database and a customised 'My Feeds Database' with feed inventory; auger timings and quantities for developing feed mixes and feed-out; and capability to export feed reports. Functions can be switched on or off to tailor user needs.

Mobile phone applications can include comprehensive user analytics to enable continuous improvement in user experience. User feedback will ensure that further development is 'fit for purpose', improving how it meets the needs of livestock producers. The free drought and supplementary feeding calculator app can be accessed through www.dpi.nsw.gov.au/dasfc.

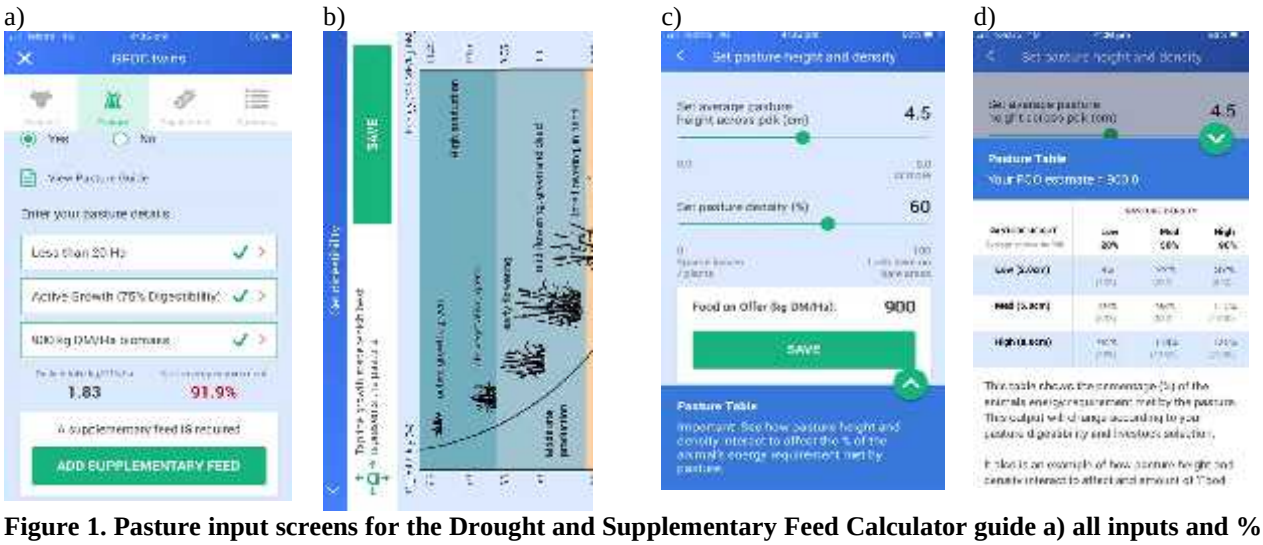

Figure 1. Pasture input screens for the Drought and Supplementary Feed Calculator guide a) all inputs and % energy requirements met by pasture, b) selection of pasture digestibility c) setting Height and Density to estimate feed on offer; and d) sensitivity table showing the effect of modifying height and density on meeting livestock needs and feed on offer.

References

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Freer M, Moore AD and Donnelly JR (1997) *Agricultural Systems.* **54,** 77-126.