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Utilising Failed Bean Crops for Livestock

by Tiffany Bennett, Livestock Project Officer for the MacKillop Farm Management Group

This year has forced many producers in the south east of South Australia to consider other options for their bean crops and how best to utilise them due to either frost, lack of rainfall or a combination of both.

There is limited information in regards to utilising failed bean crops for livestock but farmer experience and limited studies show that there are opportunities.

Grazing

Grazing a green standing failed bean crop is not a great option as they are unpalatable to livestock but once the crop has dried it can be utilised by livestock very successfully. In addition some varieties of beans have high-tannin levels and animals cannot tolerate these well. Recent varietal development of beans for feed use have produced low-tannin cultivars with reduced anti-nutritional factors. Research has shown high concentrations of tannins reduce voluntary feed intake and nutrient digestibility. Reduced animal performance is mainly due to a reduction in protein degradation in the rumen and a subsequent amino acid flow to the small intestine. In cases where the tannin content is unknown feeding bean forage as a component of the diet e.g. no greater than 50% or supplementing with other feed would help to overcome any potential problems.

Hay or Silage

Failed bean crops can be used to make hay or silage with excellent results, particularly if the plants have not formed pods as the nutrient value is still held in the stem and leaf of the plant. Silage inoculants have been shown to enhance the fermentation and quality of bean silage and are recommended if considering silage as an option. Studies have shown growing dairy heifers and beef cattle gaining on bean silage at the same rate as animals on a grass-legume silage. Dairy cows in heavy lactation have also performed well on bean silage and farmer experience in other parts of South Australia has demonstrated that sheep and cattle will do well on bean hay. Nutritionally for the animals, bean hay or silage is high in protein and energy and animals tend to do very well on it. Feed analysis has shown energy levels to be as high as 9 MJ ME/kg and crude protein levels between 13-17%.

Overseas beans are being looked at as purpose silage crops for cattle as they are able to fix their own nitrogen, stand up through to harvest, and offer good nutritional value as a feed. In a good year they can have a lot of biomass and leaf which is another reason farmers are considering it as a purpose

silage crop. Farmers are also experimenting mixing beans with cereals such as oats and barley to make good quality silage.

The method

Beans should be cut with a mower conditioner as conditioning hastens stem drying so that the leaves and stems dry at similar rates and the leaf loss is reduced when making silage or hay.

In the upper south east of South Australia many failed bean crops have not produced enough biomass to make into hay, with increased risk of dirt contamination. In this case cutting the crop and putting it into windrows and allowing the livestock to graze the windrows is probably a better option than just turning the livestock in as this will result in high wastage. In the event, however unlikely that may be in a drought, that the windrows incur a significant rainfall event there is a risk that microbial growth may result in mould which can produce mycotoxins. Mycotoxins can have a significant impact on livestock health and mould will affect the palatability of the feed. If the windrows become suspect then livestock should be removed.

Hay freezing the crop and then strip grazing it with temporary electric fencing would reduce the trampling and wastage. When grazing any failed crop, temporary fencing should be seriously considered otherwise wastage of feed due to trampling is considerable and the risk of erosion to fragile soils is high.

Withholding periods

One of the biggest considerations for utilising failed crops for livestock is that many herbicides, pesticides or fungicides used are not labelled for use in a crop intended for forage, and grazing withhold periods between application and grazing needs to be considered. It is important to check the label and abide by the withholding periods. This is most important for livestock that are being sold for slaughter.

A failed bean crop is never going to be as profitable as if it yielded well for grain in a good year, but the crop can be salvaged and used for the benefit of livestock which is a great opportunity for mixed farmers in a drought and a great reason to have livestock in the system.

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