

# feed grains & fodder

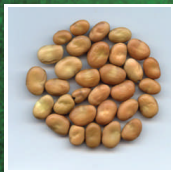
# PULSES

Australian livestock industries are a large consumer of pulse grains and fodders. This occurs despite many of our pulse grains being exported to human consumption markets. Animals consume pulses and legumes as either grain, silage, hay or when directly grazing crops or stubbles.

## Grains

Pulse grains are a concentrated protein source (20-36% protein) with the added benefit of energy contents similar to cereal grains (11.3-13.1 MJ). Industries that utilise pulse grains as their source of protein and energy include: pigs, poultry, pet food, sheep, cattle, dairy cows, horses, racehorses and bird seeds.

Lupin and field pea grains in particular are used in livestock rations and for on-farm feeding, along with some faba beans. Lentil and chickpea grains are not usually fed to livestock unless they fail to meet human food quality grades.



Faba bean



Lupin



Dun pea

## Forage

Field pea, lupin and faba bean crops are multi-purpose in that they lend themselves to being either grain or forage crops, but lentil and chickpea crops do not. Vetch tends to be mostly grown for forage rather than a grain crop.

Pulse forages tend to have a protein content of 12-19% and energy contents of 8-11 MJ depending on stage of cutting. Pulse and vetch stubbles after grain harvest are often grazed by sheep and cattle in mixed farming operations as a way of utilising residues. Residual grain of faba bean, pea or lupin is excellent for finishing grazing lambs.

Pulses grown for forage might not necessarily have good early vigour or growth, but do produce their bulk of dry matter in spring. Most except vetch cannot recover from grazing, so one cut is all that is possible.



Vetch



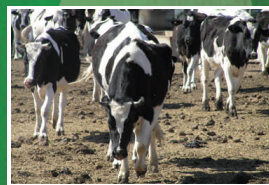
Field pea

## Flexibility

Pulse and legume fodders can be either pure legume or mixed with cereals. Harvest of a pure pulse crop for hay or silage is seen by some growers as a risk management strategy to minimise the potential impact of poor grain yield under drought or frost conditions.

## Australian Fodder Industry

The Australian stockfeed industry uses about 10 million tonnes of feed annually, with an estimated 10-20% of the diet comprising pulses, depending on the amount of vegetable meals used as an alternative (eg soybean or canola meal). Diets are formulated to provide a balanced diet of energy, protein, amino acids and minerals. Freedom from weeds, mould, taints odour and disease are important quality parameters required by end-users of pulse grains or fodders.



## Breeding for the future

Pulse breeding programs largely target human consumption grain markets rather than livestock feed, however they maintain protein and energy contents as the major attributes needed in a livestock feed ration.

Legume varieties bred or used specifically for forage tend to be bulkier and later maturing than grain varieties, but may have lower grain yield potential. Disease resistance is important in both grain and forage varieties, particularly leaf and stem diseases.



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