

Growing and Harvesting Cereal Mixes

Cereal/legume mixes: Provides high yielding silage crop with higher protein than cereal only

- Some legumes can be sown with cereals to improve the nutritive characteristics of the silage cut
- Climbing legumes such as field peas and common or purple vetch are ideal for cereal legume mixes
- Peas yield higher than vetches, have similar metabolisable energy values but a lower crude protein content
- Recent Australian data indicates that including peas with wheat did not reduce yields below that of pure stands of cereals. However, triticale/pea mixes yielded lower than triticale only
- Including peas with wheat or triticale did improve both metabolisable energy and crude protein content
- If grazed, peas and vetches will not recover and their advantage to improve silage quality will be lost
- The maturity of the cereal and legume should be matched so that they mature at about the same time (Fig. 1)
- Mature heights of each species in a mix should be similar:- Tall crops such as forage triticale will shade out legumes, leading to little improvement in nutritive characteristics (Fig. 2)
- When to cut: Pea-dominant cereal mixes - at pod filling of earlier pods (Fig. 3)

Cereal dominant - at either Boot or Soft dough

- Cereal/legume crops cut at **Boot** stage must be wilted to about 33 - 40% DM (Pit), 38 - 50 % DM (Baled) & may be difficult to wilt so a fermentation enhancing silage additive is highly recommended
- Cereal/legume crops cut at **Soft dough** stage should not need to be wilted as the standing crop will have a dry matter content between 36 – 42% DM which is suitable for both pit and bale silage. The lower value for baled silage is to ensure air exclusion from hollow stems
- Consider sowing blocks of cereal and legumes separately. This increases management flexibility, egs. Spraying, harvesting crops separately or combined depending on weather, wilting rate, maturities, etc.
- Cereals and legumes do not tolerate waterlogging for >2 - 3 days or so. Avoid grazing if waterlogged
- Cereals and legumes can be susceptible to a range of diseases, especially in waterlogged or humid conditions (Figs. 4 & 5)



1. Winter wheat:Pea mix (50:50) 3 weeks before harvest

2. Triticale:Pea mix (50:50) 3 weeks before harvest

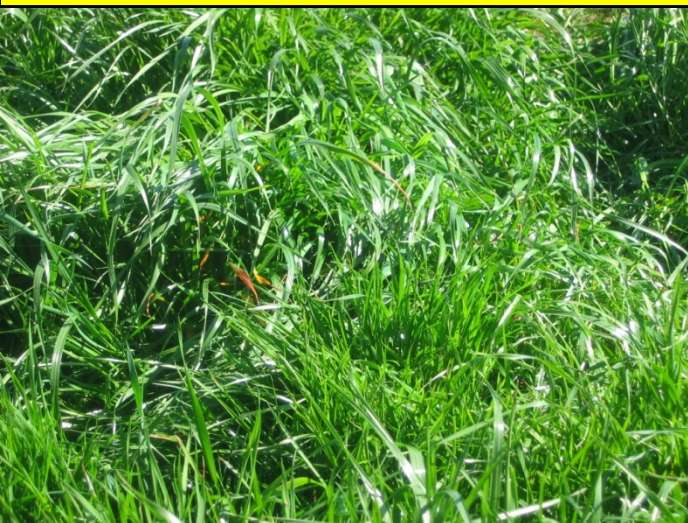

3. Peas at correct stage to cut

4. Peas leaves showing disease

5. Effect of uncontrolled pea disease

Cereals/Annual ryegrass mixes: Provides more reliable early feed, ends with higher value feed

- The cereal provides early grazing, whilst the under sown annual ryegrass spreads risk of reduced cereal density in wet conditions
- Cereals which require a vernalisation or cold period (egs. winter wheats, some forage oats) can be sown in early autumn with annual ryegrass (Fig. 6)
- The cereal will provide early feed & handle false breaks BUT regular grazing will reduce its production, allowing the annual ryegrass to increase production during spring.
- Sowing rate will vary according to soil type, climate, etc. but could be 50-80 kg/ha cereal & 15-20 kg/ha annual ryegrass
- Graze the cereal crop at GS23 – 26 (main stem + 3 - 6 tillers) (Fig. 7) or before annual ryegrass becomes too shaded
- Silage yield and quality will be influenced by the amount of cereal in the final cut depending on grazing frequency and pressure. Silage yield will be less than ungrazed crops.
- Ensure maturity of annual ryegrass is similar to that of the chosen cereal for optimum silage yield and quality, eg. if oats harvested at boot stage, annual ryegrass should be vegetative or very early heading stage


6. Ryegrass/Oat mix

7. Oats at Growth Stage 23