

# Effect of forage legumes on feed intake, milk production and milk quality – a review\*

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### **Abstract :**

Literature data from experiments with lactating dairy cows offered silage-based diets was reviewed to evaluate the effects of the grassland legume species *Trifolium repens* (WC, white clover), *Trifolium pratense* (RC, red clover) and *Medicago sativa* (M, lucerne) on feed intake, milk production and milk quality. Seven data sets were created to compare grass silage (G) with grassland legumes in general (L), G with RC, G with WC, G with M, RC with WC, RC with M and different silage proportions of RC. Daily dry matter intake and milk yield were on average 1.6 and 1.6 kg, respectively, higher and milk fat content 1.2 g/kg milk lower on L than on G based diets. Similar differences were found when G was compared with RC or WC diets. Cows offered WC yielded 1.1 kg/d more milk than RC, and milk produced on WC and M contained 0.7 g more protein per kg than milk from RC diets. Increasing the silage diet RC proportion from 0.5 to 1.0 also decreased the milk protein content by 0.8 g/kg milk. RC increased the level of poly-unsaturated fatty acids, particularly C18:3n-3, and isoflavones, particularly equol, in milk. Effects are discussed in relation to plant cell wall characteristics, plant chemical constituents and changes in rumen digestion to explain the origin of the differences in intake, milk yield and milk composition.

### **Key Word :**

Forage legumes, milk, fat/ protein, fatty acids, phytoestrogens

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