Feed intake and milk production in dairy cows fed different grass and legume species – a meta-analysis

M. Johansen, P. Lund and M. R. Weisbjerg

**Supplementary Material S1**

References used in the meta-analysis

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**Supplementary Table S1**

***Table S1*** Description of experiments used in the meta-analysis

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Experiment | Location | Feeding | Breed | DIM2 | Additional tested factors | Forage %3 | DMI4 | MY5 | ECM6 |
| Al-Mabruk et al. (2004) | Wales | Separate | Holstein-Friesian | 77 | - E vitamin | 62 | 17.7 | 24.0 | 22.2 |
|  |  |  |  |  | + E vitamin | 61 | 18.1 | 24.4 | 22.3 |
| Andersen et al. (2009) | Denmark | TMR | Danish Holstein | EL7 |  | 59 | 22.0 | 33.8 | 34.3 |
| Arvidsson et al. (2012) | Sweden | Separate | Swedish Red | 196 |  | 63 | 16.1 | 20.9 | 23.6 |
| Baxter et al. (1986) (1)1 | Kentucky, US | Separate | Jersey | EL |  | 64 | 17.3 | 17.9 | 19.8 |
| Baxter et al. (1986) (2) | Kentucky, US | Separate | Jersey | EL |  | 73 | 14.8 | 18.8 | 21.2 |
| Bertilsson and Murphy (2003) (1) | Sweden | Separate | Swedish Red and White | 50 |  | 66 | 21.0 | 28.7 | 28.7 |
| Bertilsson and Murphy (2003) (2) | Sweden | Separate | Swedish Red and White | 82 |  | 68 | 22.1 | 29.5 | 30.6 |
| Broderick et al. (2000) (1) | Wisconsin, US | TMR | Holstein | 57 | - fishmeal | 71 | 21.0 | 33.6 | 30.5 |
|  |  |  |  |  | + fishmeal | 71 | 22.0 | 34.3 | 30.8 |
| Broderick et al. (2000) (2) | Wisconsin, US | TMR | Holstein | 42 | - fishmeal | 64 | 19.7 | 29.7 | 26.9 |
|  |  |  |  |  | + fishmeal | 64 | 20.3 | 31.9 | 28.8 |
| Broderick et al. (2000) (3) | Wisconsin, US | TMR | Holstein | 59 | - fishmeal | 60 | 22.9 | 32.6 | 29.8 |
|  |  |  |  |  | + fishmeal | 60 | 22.8 | 34.3 | 31.1 |
| Broderick et al. (2001) (1) | Wisconsin, US | TMR | Holstein | 65 |  | 60 | 23.6 | 33.2 | 30.5 |
| Broderick et al. (2001) (2) | Wisconsin, US | TMR | Holstein | 146 |  | 61 | 22.7 | 30.4 | 31.0 |
| Broderick et al. (2007) (2) | Wisconsin, US | TMR | Holstein | 192 |  | 51 | 23.5 | 29.6 | 29.0 |
| Castle et al. (1983) (2) | Scotland | Separate | Ayrshire | 42 |  | 68 | 15.7 | 21.1 | 20.4 |
| Castle et al. (1983) (3) | Scotland | Separate | Ayrshire | 28 |  | 64 | 14.5 | 20.2 | 20.1 |
| Dewhurst et al. (2003) (1) | Wales | Separate | Holstein-Friesian | 64 |  | 65 | 19.8 | 28.1 | 29.6 |
| Dewhurst et al. (2003) (2) | Wales | Separate | Holstein-Friesian | 82 | 4 kg con8 | 81 | 18.4 | 24.3 | 22.8 |
|  |  |  |  |  | 8 kg con | 68 | 21.1 | 29.9 | 28.3 |
| Gidlund (2015) | Sweden | TMR | Swedish Red and White | NR9 | 15.2% CP in TMR | 60 | 19.7 | 27.2 | 28.1 |
|  |  |  |  |  | 16.8% CP in TMR | 60 | 21.4 | 29.4 | 30.2 |
|  |  |  |  |  | 18.3% CP in TMR | 60 | 23.1 | 30.3 | 30.7 |
|  |  |  |  |  | 20.0% CP in TMR | 60 | 23.6 | 29.6 | 30.0 |
| Halmemies-Beauchet-Filleau et al. (2014) | Finland | TMR | Finnish Ayrshire | 108 |  | 60 | 19.6 | 28.0 | 28.1 |
| Harris et al. (1998) (1) | New Zealand | Separate | Jersey | 115 |  | 100 | 12.0 | 12.0 | 15.0 |
| Harris et al. (1998) (2) | New Zealand | Separate | Jersey and Friesian | 246 |  | 100 | 11.7 | 9.4 | 11.8 |
| Heikkilä et al. (1992) (1) | Finland | Separate | Finnish Ayrshire | NR |  | 65 | 21.5 | 28.2 | 30.6 |
| Heikkilä et al. (1992) (2) | Finland | Separate | Finnish Ayrshire | NR |  | 61 | 19.3 | 25.3 | 26.2 |
| Heikkilä et al. (1992) (3) | Finland | Separate | Finnish Ayrshire | NR |  | 55 | 20.7 | 31.2 | 31.0 |
| Heikkilä et al. (1996) | Finland | Separate | Finnish Ayrshire | NR |  | 57 | 19.8 | 29.0 | 29.5 |
| Hoffman et al. (1997) (1) | Wisconsin, US | TMR | Holstein | 60 | Early cut, 16% CP in con | 58 | 21.8 | 33.6 | 31.7 |
|  |  |  |  |  | Late cut, 22.5% CP in con | 58 | 20.2 | 30.1 | 28.5 |
| Hoffman et al. (1997) (2) | Wisconsin, US | TMR | Holstein | 70 |  | 50 | 19.7 | 30.5 | 29.9 |
| Höjer et al. (2012) (1) | Sweden | Separate | Swedish Red | 130 |  | 74 | 20.1 | 25.9 | 27.6 |
| Höjer et al. (2012) (2) | Norway | Separate | Norwegian Red | 129 |  | 76 | 23.0 | 26.3 | 27.5 |
| Hymes-Fecht et al. (2013) | Wisconsin, US | TMR | Holstein | 161 |  | 60 | 24.7 | 33.6 | 32.0 |
| Moorby et al. (2009) | Wales | Separate | Holstein-Friesian | 103 |  | 81 | 18.0 | 26.0 | 24.1 |
| Orozco-Hernández et al. (1997) | Canada | Separate | Holstein | 104 | No barley | 99 | 19.3 | 23.9 | 24.6 |
|  |  |  |  |  | + 17% barley | 82 | 20.3 | 23.6 | 25.3 |
|  |  |  |  |  | + 34% barley | 65 | 19.9 | 22.6 | 24.6 |
| Rogers et al. (1982) | Australia | Separate | Friesian | EL |  | 100 | 14.0 | 14.6 | 14.0 |
| Rogers et al. (1980) | Australia | Separate | NR | NR |  | 100 | 17.9 | 18.6 | 17.3 |
| Steinshamn and Thuen (2008) | Norway | Separate | Norwegian Red | 74 | No con | 98 | 14.4 | 22.1 | 20.5 |
|  |  |  |  |  | 10 kg con | 60 | 19.8 | 28.0 | 27.5 |
| Strahan et al. (1987) (1) | Kentucky, US | Separate | Holstein | 60 |  | 56 | 16.9 | 20.5 | 18.7 |
| Strahan et al. (1987) (2) | Kentucky, US | Separate | Holstein | 60 |  | 59 | 18.9 | 19.5 | 17.7 |
| Thomas et al. (1985) | England | Separate | British Friesian | EL |  | 58 | 16.6 | 25.7 | 24.5 |
| Tuori and Syrjälä-Qvist (1998) | Finland | Separate | Finnish Ayrshire | NR |  | 53 | 17.2 | 27.2 | 28.7 |
| Tuori et al. (2002) | Finland | Separate | Ayrshire | NR |  | 56 | 20.0 | 29.1 | 28.4 |
| Vanhatalo et al. (2008) | Finland | Separate | Finnish Ayrshire | EL |  | 56 | 19.7 | 28.3 | 29.2 |
| Vanhatalo et al. (2009) | Finland | Separate | Finnish Ayrshire | 77 |  | 61 | 20.4 | 27.1 | 26.5 |
| Weiss and Shockey (1991) | Ohio, US | TMR | Holstein | 140 | 82% forage | 82 | 19.2 | 22.5 | 21.0 |
|  |  |  |  |  | 63% forage | 63 | 21.5 | 27.1 | 23.5 |
|  |  |  |  |  | 43% forage | 43 | 22.5 | 27.2 | 23.7 |

1 The number in brackets refers to experiment number within publication

2 Days in milk

3 Proportion of forage in the total ration on dry matter basis

4 Dry matter intake, kg/day

5 Milk yield, kg/day

6 Energy corrected milk (3.14 MJ/kg), kg/day

7 Early lactation

8 Concentrate

9 Not reported