**Supplementary Table S1.** Key characteristic features of the 13 published studies (16 experiments) that investigated the effects of rumen by-pass lysine (Lys) + methionine (Met) on fat-corrected milk (FCM) and (crude) protein yields.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Dietary crude protein**  **(g/kg DM)** | | **Lactation** | | | **Basal forage** | **Additional comments** |
|  | **Control** | **Lys + Met group** | **Stage** | **FCM\*** | **Protein\*** | **% Dietary DM** |  |
|  |  |  |  | **kg/d** | **kg/d** |  |  |
| Rogers et al., 1987 | 145 | 145 | Mid | 27.4 | 0.910 | Maize 62% | Latin-square-like design |
| Rogers et al., 1989 (i) | 148 | 148 | Mid | 25.3 | 0.873 | Maize 65% | Protein = soybean meal |
| Rogers et al., 1989 (ii) | 150 | 150 | Mid | 23.1 | 0.754 | Maize 65% | Protein = maize gluten meal |
| Polan et al., 1991 | 148 | 148 | Mid | 24.0 | 0.780 | Maize 50% | Averaged over 6 university sites |
| Armentano et al., 1993 | 143 | 143 | Mid | 31.5 | 1.099 | Maize 56% | - |
| Christensen et al., 1994 | 142 | 142 | Mid | 21.8 | 0.660 | Lucerne 33% + Maize 17% | Latin square design |
| Colin-Schoellen et al., 1995 | 150 | 150 | Early | 33.2 | 0.996 | Maize 62% | Latin square design |
| Robinson et al., 1995 (i) | 147 | 151 | Mid | 29.6 | 0.860 | Maize + Lucerne + Hay **‡** | Site 1 (Truro) |
| Robinson et al., 1995 (ii) | 139 | 139 | Mid | 31.8 | 0.980 | Maize + Lucerne + Hay **‡** | Site 2 (Fredericton) |
| Piepenbrink et al., 1996 | 140 | 141 | Mid | 27.7 | 0.900 | Maize 20% + Lucerne 30% | Highest levels Lys+Met reported |
| Robinson et al., 1998 | 140 | 140 | Early | 32.6 | 1.070 | Maize + Hay **‡** | - |
| Robinson et al., 2000 | 142 | 142 | Mid | 35.5 | 1.190 | Maize 28% + Hay 24% | Abomasal infusion of amino acids |
| Cabrita et al., 2011 (i) | 142 | 142 | Mid | 33.7 | 1.020 | Maize 45% + Straw 5% | Protein = soybean meal |
| Cabrita et al., 2011 (ii) | 144 | 144 | Mid | 32.3 | 0.990 | Maize 45% + Straw 5% | Protein = distillers grains |
| Lee et al., 2012a | 156 | 140 | Mid | 36.2 | 1.190 | Lucerne 15% + Maize 33% + Hay 5% | Cont. adequate MP, Treat low MP |
| Lee et al., 2012b | 157 | 136 | Early | 35.5 | 1.130 | Lucerne 17% + Maize 41% + Hay 6% | Cont. adequate MP, Treat low MP |

**‡** Inclusion rates not clearly specified

**\*** Control groups only