Origin	Factor	Effect on CH4	Species investigated	CH4 measurement	Can data be provided for Meata-Analysis (y/n)	Reference for performed CH_4 measurement
Diet	DMI	CH4 (kJ) = 8427.5 + 164.18 × DMI [kg]	Cattle	Respiration Chamber	Y	Jentsch et al., Archives of Animal Nutrition, 2007, 61, 10-19
Diet	DMI	CH4 (MJ) = 3.23 + 0.81 × DMI [kg]	Cows	Respiration Chamber		Ellis et al., J Dairy Sci, 2007
Diet	DMI, corn silage	CH4 (g) = 93 + 16.8 × DMI [kg]	Cows	Respiration Chamber		Kirchgessner et al., Agribiol.Res.44, 2-3,1991
Diet	DMI, dried grass	CH4 (g) = 81 + 14.0 × DMI [kg]	Cows	Respiration Chamber		Kirchgessner et al., Agribiol.Res.44, 2-3,1991
Diet	Feed components	CH4 (kJ) = 1.1 ×CP[g]-0.31×CF[g] + 1.31×starch[g] + 1.1×sugar[g] +2.4×NFR+1835	Cattle	Respiration Chamber		Jentsch et al., Archives of Animal Nutrition, 2007, 61, 10-19
Diet	Feed components	total CH4 (g) = 123 + 84 ×cellulose [kg] - 30×hemicellulose [kg] + 58xstarch [kg] + 73×sugars [kg] - 95×lignin[kg]	Cows	Respiration Chamber		Hindrichsen et al. Environment Monitor Assessm 2005
Diet	Feed components	enteric CH4 (g) = 84 + 47 × cellulose [kg] + 32 x starch [kg] + 62 × sugars [kg]	Cows	Respiration Chamber		Hindrichsen et al. Environment Monitor Assessm 2005
Diet	Nitrate	decrease	Cows	Respiration Chamber		van Zijderveld et al., J Dairy Sci. 2011; 94: 4028-38.
Diet	NDF intake	CH4 (l) = 59.4 ×NDF[kg]+ 64.6	Calves	Respiration Chamber		Estermann, et al., J Anim Sci. 2002;80: 4:1124-34.
Diet	Essential oils, bioactive compounds	decrease	beef cattle, dairy cattle, small ruminants	chambers	metanaysis performed	R. Khiaosa-ard and Q. Zebeli, J Anim Sci, 91, 1819
Diet	Bromochloromtehane antimethanogens additive	decrease (33 % on DMI basis)	goats	chambers		Abecia et al., 2012 J Dairy Sci, 95(4):2027-36
Diet	Nitrates, sulftaes	decrease	sheep	chambers		van Zijderveld et al., 2010. J Dairy Science, 3(12):5856-66
Diet	increased passage rate	decrease	Hereford	indirect		Okine et al., J. Anim. Sci. 1989, 67:3388-

			steers; sheep	calorimetry method		3396; Kennedy and Milligan, Br. J. Nutr. 1978, 39:105
Diet	Feed		cattle	SF6	Y	Patel et al., 2011. Acta Agric Scand, section A, (61), 128-136
Diet	% concentrate (concentrate:forage ratio)	decrease	dairy cows, suckler cow-calf pairs	Respiration Chamber		Zeitz et al., J Integr Environ Sci, 2012:9, 199-216
Rumen Microbiota	Protozoa		Calves		Y	Schönhusen et al., Archives of Animal Nutrition, 2003, 57:4, 279-295
Rumen Microbiota	Protozoa				metanaysis performed in Diego Morgavis group	
Animal x Microbiota	Animal variation, breed, feed intake, digestibility, Rumen microbes		lactating Cattle	sniffer	partly (must be published by PhD student first)	Garnsworthy et al., 2011. J. Dairy Sci. 95 :3166–3180; J. Dairy Sci. 95 :3181–3189
Host Genetic	via longevity, health, fertility, age of first calving					
Host Genetic	via feed intake!		lactating dairy cows	respiration chambers		Mills et al., J Anim Sci 2001, 79: 1584-1597
Host Genetic	via milk yield (mediated through the relationship between feed intake and milk yield?!)		lactating dairy cows	methane analyzers installed in automatic (robotic) milking stations		Garnsworthy et al., J Dairy Sci 2012, 95:3181-3189
Host genetic	Animal variation + correction for fixed effects		dairy cattle	sniffer	y	Lassen et al JDS 2012 95:890:898
Host Genetic	selection index		dairy cows	Predicted by MIR milk spectra		Kandel et al., 2014, p12, 19th National Symposium on Applied Biological Sciences

Host Genetic	heat stress		dairy cows	Predicted by MIR milk spectra		Vanrobays et al., 2013,Book of abstract of the 64th annual meeting of the European Federation of Animal Science, p498
Host Genetic	heritability, breeding values		dairy cows	Predicted by MIR milk spectra		Kandel et al., 2013, JDS 95:388
Host Genetic	Animal variation	visit, day and animal variances in a 6 week test period	young beef bulss	Greenfeed	Y	Renand, Ricard, Maupetit, Thouly 64th EAAP Meeting, Nantes, France
Host Genetic xPhysiological stage	Weight		lactating dairy cows	methane analyzers installed in automatic (robotic) milking stations		Garnsworthy et al., J Dairy Sci 2012, 95:3181-3189
Physiological stage	Age	increase	calves			Estermann, et al., J Anim Sci. 2002;80: 4:1124-34.
Physiological stage	Parity		lactating dairy cows	methane analyzers installed in automatic (robotic) milking stations		Garnsworthy et al., J Dairy Sci 2012, 95:3181-3189
Physiological stage	Day in milk/ week of lactation		lactating dairy cows	methane analyzers installed in automatic (robotic) milking stations		Garnsworthy et al., J Dairy Sci 2012, 95:3181-3189
Physiological stage	Lactating vs. non-lactating (mediated through higher/lower feed intake)					

Physiological stage	milk yield on grass diet	CH4 (g/kg milk) = 4.6 + 196/ milk yield[kg/d]	dairy cows	Respiration Chamber		Kirchgessner et al., Agribiol.Res.44, 2-3,1991
Physiological stage	milk yield on corn silage diet	CH4 (g/kg milk) = 5.8 + 289/ milk yield[kg/d]	dairy cows	Respiration Chamber		Kirchgessner et al., Agribiol.Res.44, 2-3,1991
Physiological stage	milk yield on Maïze and grass diets	negative	dairy cows	SF6 methane data		Dehareng et al., 2012, Animal 6:1694-1701
Environment	e.g. feeding/milking time (?)		lactating dairy cows	methane analyzers installed in automatic (robotic) milking stations		discussed in Garnsworthy et al., J Dairy Sci 2012, 95:3181-3189
Environment	herd*test-day variability		dairy cows	Predicted by MIR milk spectra		Vanrobays et al., 2013,Book of abstract of the 64th annual meeting of the European Federation of Animal Science p344