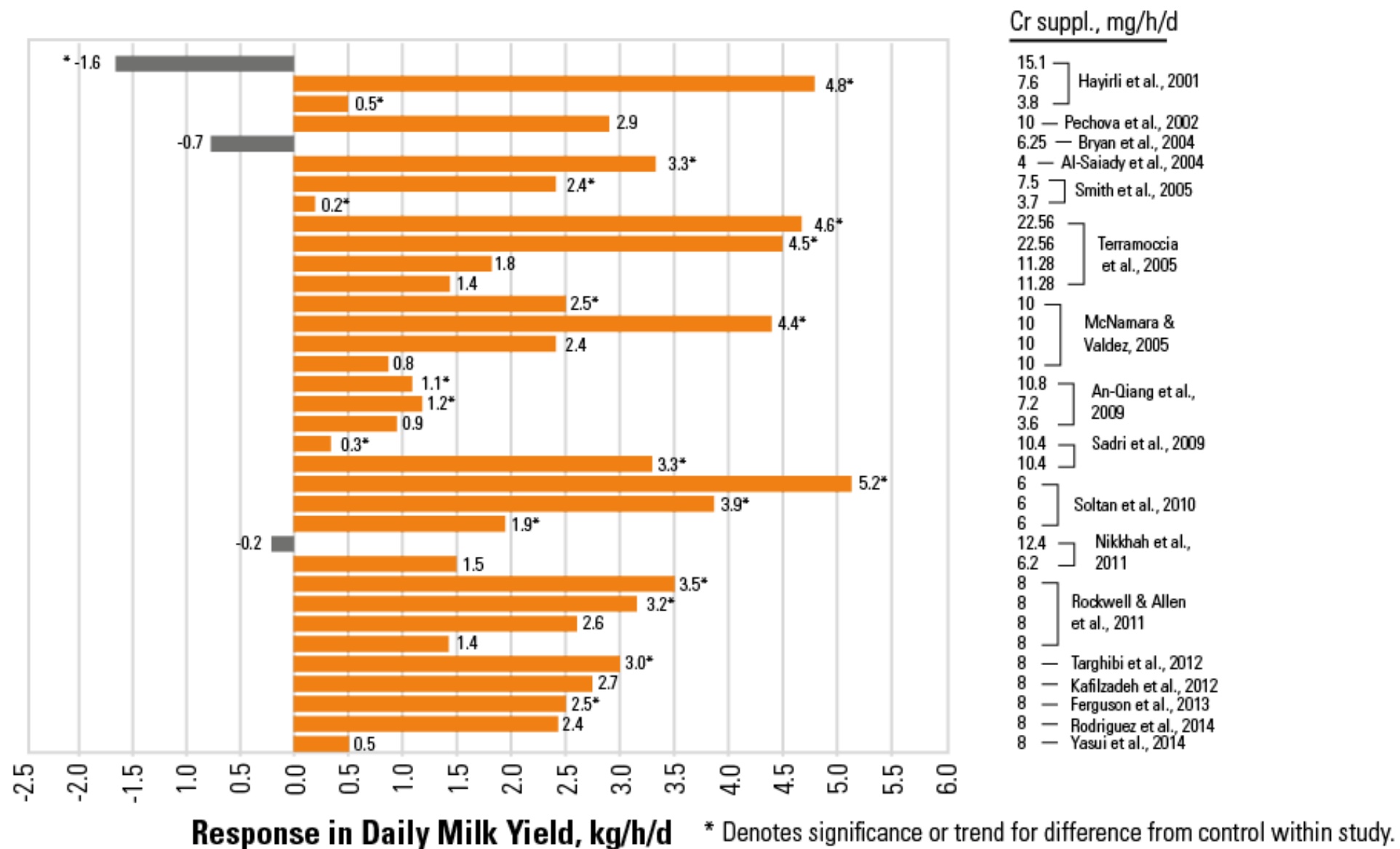


Effect of chromium supplementation in lactating dairy cow diets on response in daily milk yield, kg/h/d



Milk yield response to Cr supplementation - Review of 17 refereed journal articles - February 2015

Study	Change in Milk Yield		Cr Dosage	Cr Consumed mg/h/d	Measurement Period	Cr Feeding Period	# of Cows	Parity of Cows	Objective/ Other trt	Cr Source	Location	Reference
	kg/h/d	lbs/h/d										
Yasui et al., 2014	0.50	1.1	8 mg/h/d	8	1 - 63 DIM	-28 to 63 DIM	60	M	Immune Function	KemTRACE® Chromium, 0.04%	NY, USA	J. Dairy Sci. 97:6400-6410
Vargas-Rodriguez et al., 2014	2.5	5.5	8 mg/h/d	8	38 - 73 DIM	38 - 73 DIM	48	P, M	Peak	KemTRACE® Chromium, 0.04%	KS, USA	J. Dairy Sci. 97:3815-3821
Ferguson, 2013	2.59	5.7	8 mg/h/d	8	14 - 150 DIM	14 - 150 DIM	220	M	Heat stress	KemTRACE® Chromium, 0.04%	PA, USA	J. Dairy Sci. 96: (E-Supplement 1):127
Kafilzadeh et al., 2012	2.75	6.1	8 mg/h/d	8	1 - 90 DIM	-21 to 21 DIM	60	M	Transition/ Repro	Cr-Met, Zinpro, Mankato, MN	Iran	Biol Trace Elem Res (2012) 149:42-49
Targhibi et al., 2012	3.05	6.7	8 mg/h/d	8	1 - 30 DIM	-21 to 21 DIM	60	M	Transition/ Metabolism	Cr-Met, Zinpro, Mankato, MN	Iran	Asian J. Anim. Vet. Adv. 7(11):1205-1211
Rockwell & Allen, 2011	1.40	3.1	8 mg/h/d	8	1 - 28 DIM	-28 to 28 DIM	48	M	Dry corn	KemTRACE® Chromium, 0.04%	MI, USA	J. Dairy Sci. 94: (E-supplement 1):738
	2.70	5.9	8 mg/h/d	8	1 - 28 DIM	-28 to 28 DIM			HMC			
	3.30	7.3	8 mg/h/d	8	29 - 84 DIM	-28 to 28 DIM			Dry corn			
	3.60	7.9	8 mg/h/d	8	29 - 84 DIM	-28 to 28 DIM			HMC			
Nikkhah et al., 2011	1.60	3.5	0.05 mg/kg BW ^{0.75}	6.2	52 - 101 DIM	38 - 101 DIM	15	P, M	Heat stress	Cr-Met, Zinpro, Mankato, MN	Iran	J. Anim. Physiol Anim. Nutr. 95:81-89
	-0.20	-0.4	0.10 mg/kg BW ^{0.75}	12.4	52 - 101 DIM	38 - 101 DIM						
Soltan, 2010	1.90	4.2	6 mg/h/d	6	1 - 28 DIM	-21 to 84 DIM	120	N/A	Heat stress	Dinakrome (0.03% organic Cr), Dinatex, Gainesville, GA	Saudi Arabia	J. Anim. Physiol Anim. Nutr. 94:264-272
	4.00	8.8	6 mg/h/d	6	29 - 56 DIM	-21 to 84 DIM						
	5.40	11.9	6 mg/h/d	6	57 - 84 DIM	-21 to 84 DIM						
Sadri et al., 2009	3.40	7.5	0.08 mg/kg BW ^{0.75}	10.4	1 - 28 DIM	-28 to 28 DIM	32	M	Barley diet	Cr-Met, Zinpro, Mankato, MN	Iran	J. Dairy Sci. 92 :5411-5418
	0.30	0.7	0.08 mg/kg BW ^{0.75}	10.4	1 - 28 DIM	-28 to 28 DIM			Corn diet			
An-Qiang et al., 2009	0.95	2.1	3.6 mg/h/d	3.6	21 - 84 DIM	21 - 84 DIM	24	M	Heat stress	Chromium picolinate (0.1% Cr), Wuhan New Huayang Corporation	China	Pakistan J. Nutr. 8:940-945
	1.29	2.8	7.2 mg/h/d	7.2	21 - 84 DIM	21 - 84 DIM						
	1.18	2.6	10.8 mg/h/d	10.8	21 - 84 DIM	21 - 84 DIM						
McNamara & Valdez, 2005	0.80	1.8	10 mg/h/d	10	1 - 35 DIM	-21 to 35 DIM	41	M	Lipolysis/ transition cows	KemTRACE® Chromium, 0.04%	WA, USA	J. Dairy Sci. 88:2498-2507
	2.50	5.5	10 mg/h/d	10	36 - 56 DIM	-21 to 35 DIM						
	4.60	10.1	10 mg/h/d	10	57 - 90 DIM	-21 to 35 DIM						
	2.60	5.7	10 mg/h/d	10	1 - 90 DIM	-21 to 35 DIM						
Terramoccia et al., 2005	1.46	3.2	0.6 mg/kg DM	11.28	42 DIM	-28 to 42 DIM	21	P, M	Transition thru peak	CR400 (400.7 mg Cr/kg DM), Agrolabo, Italy	Italy	Asian-Aust. J. Anim. Sci. 18:1098-1104
	1.81	4.0	0.6 mg/kg DM	11.28	60 DIM	-28 to 42 DIM						
	4.63	10.2	1.2 mg/kg DM	22.56	42 DIM	-28 to 42 DIM						
	4.71	10.4	1.2 mg/kg DM	22.56	60 DIM	-28 to 42 DIM						
Smith et al., 2005	0.20	0.4	0.03 mg/kg BW ^{0.75}	3.7	1 - 28 DIM	-21 to 28 DIM	72	M	NFC level prepartum	Cr-Met, Zinpro, Mankato, MN	NY, USA	J. Dairy Sci. 88:255-263
	2.50	5.5	0.06 mg/kg BW ^{0.75}	7.5	1 - 28 DIM	-21 to 28 DIM						
Al-Saidy et al., 2004	3.37	7.4	4 mg/h/d	4	120 - 190 DIM	120 - 190 DIM	160	M	Heat stress	Co-Factor III Chromium Yeast, Alltech, 0.1% Cr3+	Saudi Arabia	Anim. Feed Sci. Technol. 117:223-233
Bryan et al., 2004	-0.70	-1.5	6.25 mg/h/d	6.25	1 - 147 DIM	-42 to 147 DIM	232	P, M	Grazing	Cr-Met, Zinpro, Mankato, MN	New Zealand	J. Dairy Sci. 87:4269-4277
Pechova et al., 2002	2.94	6.5	10 mg/h/d	10	1 - 100 DIM	-21 to 30 DIM	20	P, M	Carryover	Co-Factor III Chromium Yeast, Alltech, 0.1% Cr3+	Czech Republic	ACTA VET. BRNO, 71: 9-18
Hayirli et al. 2001	0.50	1.1	0.03 mg/kg BW ^{0.75}	3.8	1 - 28 DIM	-21 to 28 DIM	41	M	Transition	Cr-Met, Zinpro, Mankato, MN	WI, USA	J. Dairy Sci. 84:1218-1230
	5.00	11.0	0.06 mg/kg BW ^{0.75}	7.6	1 - 28 DIM	-21 to 28 DIM						
	-1.70	-3.7	0.12 mg/kg BW ^{0.75}	15.1	1 - 28 DIM	-21 to 28 DIM						

M= multiple lactations

P = 1st lactation