

가

1.

(soybean) 35% 18%

가

(soybean meal)

, , , ,
 . , , ,
 42, 24, 16%

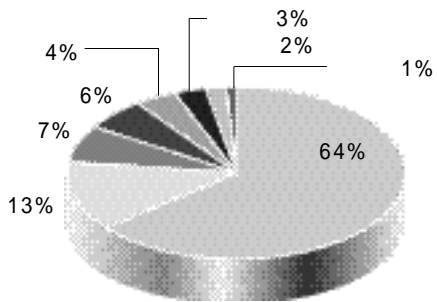
가

64%

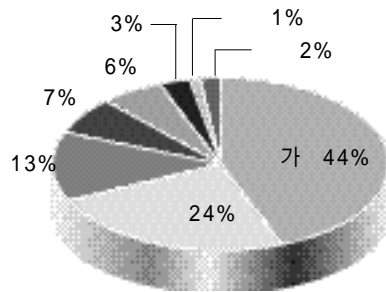
가

(1).

가 가

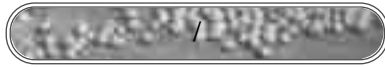


1.



() 가

()



1. 가 (NRC, 1998)

	가 (%) ^a	(%)	(%)
-	0.70	0.80	16.00
-	0.70	0.90	17.90
-	0.70	0.81	24.50
-	0.70	1.07	26.70
-	0.70	0.85	29.50
-	0.70	0.83	34.40

a 60kg 가 (0.70%). (Cromwell, 2000)

2.

(2).

가
가

(2).

가 100%
53-69% 가
(, 1993).
가

(Parsons , 1992).

0.7%
16%
34.4%가 (1).

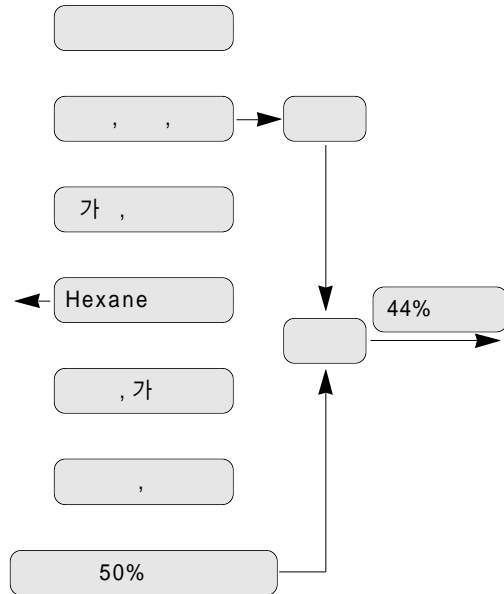
가

가

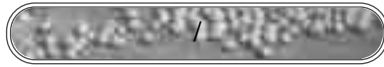
44% 6%

48% 3%
(Feedstuffs, 2001).

가



2.



2. ()

(trypsin inhibitor)	, , ,	(100 15 95%)
Allergen (glycinin, -conglycinin)	, ,	
Lectin(hemagglutinin)		
Phytate	(, ,)	

(Liener, 1994; Cheeke, 1998)

3. (1999-2001)

	46.10	3.06	4.59	0.88	2.78	0.37	0.59	0.15
	46.27	2.44	4.78	1.33	2.94	0.27	0.64	0.05
	44.82	0.99	6.14	0.72	2.76	0.11	0.61	0.06
	44.73	0.79	5.47	0.66	2.83	0.45	0.77	0.11
	43.97	1.47	5.37	0.87	2.75	0.17	0.59	0.05

(2002)

, 가 (가) 1)
가

가

(Baize,

1997; Grieshop , 2003).

(3)

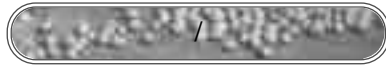
(ME)

72%

, , 가 ,
가 . (4)

가 (5)

3. 가



Neto (1996) , 8% .
 가 Quisenberry (1973)
 (6). (2000) 가
 가
 (7). 가
 (8). , (2000)
 가 kg 가
 4. 가

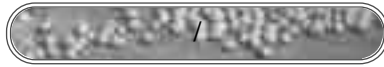
	84.4	78.9	87.7	82.2	92.9
	93.7	91.7	94.3	92.0	95.8
	88.5	82.6	89.3	87.1	92.1
	88.8	84.4	90.9	87.1	90.4
	86.2	81.3	89.2	84.3	89.9
	86.8	81.7	87.4	87.4	90.9
	91.1	87.4	91.4	88.1	92.7
	86.7	82.0	89.3	85.1	90.4
	82.9	76.7	89.9	80.2	86.8
	90.2	87.1	91.6	86.7	92.6
	86.5	80.0	89.4	84.2	89.1
	84.5	77.3	87.3	81.8	88.4
	83.5	79.1	85.0	83.4	89.6
	78.6	69.4	79.7	78.5	84.8
	88.2	83.7	89.5	86.8	90.0
	80.4	69.5	82.6	77.8	87.5
	113.7	102.6	97.9	100.1	99.2
	89.9	85.6	91.1	86.6	90.3
	88.7	83.9	89.5	86.3	91.8
	88.0	85.3	90.3	86.3	91.1
	88.2	82.9	88.0	85.9	89.4
	87.9	83.1	89.6	86.1	88.7

(Karr_lilienthal , 2004)

5.

	(44%)	(50%)	
Cornell	2195 (kcal/kg)	2474 (kcal/kg)	11.8 (%)
Connecticut	2200	2356	6.9
Guelph	2352	2542	8.8
	2249	2457	9.2

(Feedstuffs, 2001)



6. (1-41)

(g)	2,309	2,274
(g)	4646 ^a	4425 ^b
	2.01 ^a	1.95 ^b

a,b 가 가 (P<0.05)
(Neto , 1996)

가

가

가

(9).

가 가

가가

7.

가 ()	237.3	221.2	274.4
(%)	26.47	27.79	22.27
	24.02	23.84	22.05
가 (/kg)	191.2	18.34	193.4
	181.7	181.7	189.6
(g)	1,539	1,228 ^b	1,576 ^a
	1.81 ^b	1.96 ^c	1.78 ^a
(/kg)	305.6 ^a	328.2 ^b	302.7 ^a

a,b,c 가 가 (P<0.05)

2)

(, 2000)

(10)

8. 가 32

(g)	1,650	1,642
(%)	67.9	70.0
(g)	63.1	63.2
	28.5 ^a	26.7 ^b

a,b 가 가 (P<0.05)
(Quisenberry , 1972)

가

가

가

kg

195kcal, 200kcal

(NRC, 1998).

(11)

9.

(%)	70	70	71
(g)	62.34	63.49 ^b	64.66 ^a
(Roche Color)	8.17	8.10	8.01
	3.72	3.83	3.83
HU	71.45 ^c	73.08 ^{bc}	76.65 ^{ab}
/ (g)	1033.2 ^c	1127.4 ^{ab}	1208.5 ^a
가 (/kg)	282.95	286.0	290.79
(/g)	0.274	0.254	0.241

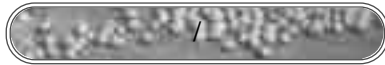
a,b,c 가 가 (P<0.05)

가

가

1kg

(, 2000)



10.

(%)		
(kcal/kg)	3.18	3.38
	43.8	47.5
	1.5	3.0
-NDF	13.3	8.9
-ADF	9.4	5.4
	3.23	3.48
	1.17	1.28
	1.99	2.16
	3.42	3.66
	2.83	3.02
	0.61	0.67
	0.70	0.74
	2.18	2.39
	1.69	1.82
	1.73	1.85
	0.61	0.65
	2.06	2.27

(NRC, 1998)

11.

	()	()	()
(g)	541 ^b	549 ^b	638 ^a
(g)	1,080	1,126	1,109
	0.51 ^b	0.50 ^b	0.59 ^a

a,b 가 가 (P<0.05)
(, 2003)

12.

	()	()	()
가 (/kg)	237.6	214.6	217.3
(g/)	1,109.1	1,080.8	1,127.0
(/)	11,065.5	9,742.8	10,287.1
(g/)	638.2	514.7	549.5
(/kg)	412.8	528.2	445.7

(, 2003)

가
kg 20.3
가
18.9
(12). (Anonymous, 1996)

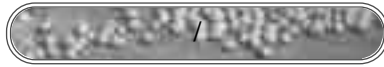
,
(가)
가
가
가

가
2001 가
가 (14).
가 kg 305 , 280 ,
가 420 . 가
가 0.86% 0.99% 3가
(2003) 가 가

가
2001 가
가 (14).
가 kg 305 , 280 ,
가 420 . 가
가 0.86% 0.99% 3가
(2003) 가 가

13).
Ko
(1999) 가

273 292
NRC(1998)
가



13.

	()	()	()
(kg/)	5.02	4.9	4.93
	10.8	9.58	10.62
	10.03 ^a	8.72 ^b	9.38 ^{ab}
(kg)			
	14.33 ^c	11.86 ^d	13.02 ^{cd}
	56.1	52.93	54.42
	6.08	5.79	5.86
(/)	6.316	7.182	6.649

a,b,c,d 가 가 (P<0.05) (,2000)

14. 가

() ^a	가 (/kg)	b 0.86%			0.99%		
		(%)	가 가(/kg)	(/kg)	(%)	가 가(/kg)	(/kg)
	305	29.12	305	214	34.56	305	215
	280	-	273	-	-	273	-
	420	-	292	-	-	292	-
	305	29.12	-	214	34.56	-	215
	280	31.32	-	216	37.16	-	217
	420	42.76	-	276	INF	-	INF

a 3가 3가
b NRC(1998)

가

4.

가