



가

가

5

“ ”

가

“ ” “ ”

HACCP

,가

가

2005

HACCP

가

가

가



1.

· () 2001
 1,595 , 2002 1,541 , 2003 1,439 , 2004 1,368 2005 9
 1,119 가 .

가.

(, ,) 가
 가
 50% 가 . 가
 2003 48% 가 2004
 42% ,
 6.5%-8% (1).

1. () (:)

	(%)				
	2005 9	2004	2003	2002	2001
	466.2 (41.7)	601.2 (43.9)	680.6 (47.3)	741.9 (48.1)	766.4 (48.1)
	76.9 (6.5)	101.3 (7.4)	109.7 (7.6)	127.2 (8.2)	116.5 (7.3)
가	575.7 (51.5)	665.6 (48.6)	658.2 (45.7)	672.2 (43.6)	712.0 (44.6)
	1,118.9	1,368.0	1,438.5	1,541.3	1,594.9

· () , 53-57% 가
 , 21-24%, 11-18%, 6-8%
 (2).

가 200 , 900 , 1
 150 , ,
 2-10 .

2. () (:)

	(%)				
	2005 9	2004	2003	2002	2001
	77.9 (6.9)	97.5 (7.1)	107.6 (7.5)	129.0 (8.4)	91.9 (5.7)
	596.0 (53.3)	770.7 (56.3)	818.4 (56.9)	879.0 (57.0)	917.8 (57.5)
	237.3 (21.2)	282.2 (20.6)	347.5 (24.2)	346.6 (22.5)	358.8 (22.5)
	207.7 (18.6)	217.7 (15.9)	165.0 (11.5)	186.7 (12.1)	226.4 (14.1)
	1,118.9	1,368.0	1,438.5	1,541.3	1,594.9

2004 Tetracyclines 484
 50% , Sulfonamides 115 ,
 Penicillins 101 , Aminoglycosides, Macrolide,
 Quinolone, Polypeptide , Cephalosporins
 (3). Tetracyclines
 Chlortetracycline 261 , Oxytetracycline 220 ,
 Sulfonamides Sulfathizole 70 가 ,
 Penicillins Amoxicillin 가 , Aminoglycosides
 Neomycin, Quinolone Enrofloxacin
 Nitrofurans 2004
 가 (kg/kton) 2003
 81.4g/ton(460,688kg/5,663kton), 42.9g/ton(167,497kg/3,907kton),
 9.1g/ton(42,434kg/4,670kton) 가 5-10
 가

2.

2003 2005
 (Ent. faecalis/faecium),
 , , 가



3.

(: kg)

()	(AI 가)				
	2005 9	2004	2003	2002	2001
Tetracyclines	549,714	698,632	723,698 (664,838)	774,331 (706,217)	752,426 (685,600)
Sulfonamides	138,710	162,241	180,517 (179,933)	208,788 (208,338)	236,778 (235,940)
Penicillins	147,986	169,166	130,016 (74,200+3.5 $\times 10^{13}$)	127,675 (84,101+3.9 $\times 10^{13}$)	114,466 (73,179+3.8 $\times 10^{13}$)
Aminoglycosides	52,380	62,829	78,792 (57,064)	74,353 (55,122)	67,014 (50,343)
Macrolide	39,871	48,587	47,642 (43,108)	59,754 (54,132)	59,390 (51,479)
Quinolone	43,170	44,509	32,726 (32,325)	40,795 (40,274)	45,031 (44,416)
Polypeptide	30,624	31,796	33,922 (32,699)	32,063 (30,936)	34,191 (33,023)
Chloramphenicols	17,872	20,351	9,955 (9,955)	2,453 (2,453)	1,641 (1,641)
Lincosamides	10,402	11,981	9,808 (9,127)	11,193 (10,437)	9,734 (9,156)
Cephalosporins	1,190	1,865	9,521 (9,506)	838 (831)	693 (677)
Nitrofurans	0 (0)	0 (0)	63,034 (57,244)	90,182 (82,829)	87,404 (81,040)
	87,012	116,078	118,902	118,848	186,172
Total	1,118,931	1,368,011	1,438,533	1,541,273	1,594,940

* Oxytetracycline quaterary ammonium salt 9 AI(active ingredient)

80 - 90% 가

(4 5).

가 가

가

가

50%

가

가

5

(Salmonella

4. (E. coli)

	(%)					
	(n=118)		(n=176)		(n=113)	
Ampicillin (AM)	18(15.3)	13(11.0)	126(71.6)	5(2.8)	77(68.1)	12(10.6)
Amoxicillin/clavulanic acid (AmC)	0(0)	12(10.2)	2(1.1)	34(19.3)	12(10.6)	47(41.6)
Cephalothin (CF)	7(5.9)	31(26.3)	21(11.9)	45(25.6)	98(86.7)	12(10.6)
Cefazolin (CZ)	1(0.8)	0(0)	1(0.6)	8(4.5)	24(21.2)	36(31.9)
Cefoxitin (FOX)	1(0.8)	1(0.8)	1(0.6)	5(2.8)	6(5.3)	17(15.0)
Cefotaxime (CTX)	0(0)	1(0.8)	2(1.1)	1(0.6)	2(1.8)	39(34.5)
Streptomycin (S)	28(23.7)	6(5.1)	119(67.6)	25(14.2)	81(71.7)	29(25.7)
Gentamicin (GM)	0(0)	0(0)	36(20.5)	7(4.0)	22(19.5)	1(0.9)
Amikacin (AN)	1(0.8)	0(0)	1(0.6)	0(0)	5(4.4)	35(31.0)
Neomycin (N)	15(12.7)	9(7.6)	88(50.0)	28(15.9)	26(23.0)	76(67.3)
Ciprofloxacin (CIP)	5(4.2)	1(0.8)	30(17.0)	2(1.1)	43(38.1)	10(8.8)
Nalidixic acid(NA)	8(6.8)	3(2.5)	65(36.9)	16(9.1)	94(83.2)	10(8.8)
Trimethoprim/ Sulfamethoxazole (SXT)	7(5.9)	1(0.8)	86(48.9)	10(5.7)	56(49.6)	2(1.8)
Colistin (CL)	0(0)	1(0.8)	0(0)	0(0)	0(0)	19(16.8)
Chloramphenicol (C)	9(7.6)	0(0)	78(44.3)	12(6.8)	25(22.1)	1(0.9)
Tetracycline (TE)	52(44.1)	4(3.4)	169(96.0)	0(0)	104(92.0)	2(1.8)



typhimurium DT104 , ACSSuT)
(VRSA)

(VRE)

5. (E. faecium)

	(%)					
	(n=12)		(n=37)		(n=43)	
Ampicillin (AM)	0(0)	0(0)	2(5.4)	0(0)	0(0)	0(0)
Amoxicillin/ clavulanic acid (AmC)	0(0)	0(0)	0(0)	1(2.7)	0(0)	0(0)
Quinupristin/ Dalfopristin (SYN)	0(0)	0(0)	0(0)	4(10.8)	0(0)	3(7.0)
Bacitracin (B)	1(8.3)	0(0)	9(24.3)	2(5.4)	16(37.2)	2(4.7)
Gentamicin 120g (G120)	0(0)	0(0)	2(5.4)	15(40.5)	0(0)	0(0)
Ciprofloxacin (CIP)	1(8.3)	2(16.7)	4(10.8)	11(29.7)	5(11.6)	18(41.9)
Erythromycin (E)	8(66.7)	4(33.3)	21(56.8)	3(8.1)	21(48.8)	5(11.6)
Streptomycin 300g (S300)	0(0)	0(0)	12(32.4)	0(0)	12(27.9)	2(4.7)
Vancomycin (VA)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
Chloramphenicol (C)	0(0)	1(8.3)	2(5.4)	0(0)	0(0)	4(9.3)
Tetracycline (TE)	6(50.0)	0(0)	27(73.0)	3(8.1)	22(51.2)	0(0)
Rifampin (RA)	8(66.7)	1(8.3)	20(54.1)	4(10.8)	3(7.0)	2(4.7)

3.

가 “ ”
가 (VRSA)
(VRE) 가 가
가 가
가 , , 가
가

가

(1) 가 (GHP; good husbandry practice)

가

GHP

(2) (code of good practices), (quality assurance program), 가 (herd health surveillance program),

(3)

가

(4)

가

가

가

가

(5)

가

가

가

가

가

가



(6) , , , , ,

(7) 가 ,가 가

(8) 가

(9) 가 , , 가 , ,

(10) 가 (GHP)

가 , , , 가 ,

4. ?

2006 가

, 가

2 - 10 가

