



옵티팜
OPTIPHARM

2018년 양돈 질병 세균 항생제 내성 검사 결과

I Seul Oh

ACE of Optipham

ois@optipham.co.kr

043-249-7532

SAFETY! INNOVATION, PRECISION, CLEANLINESS

Contents

- I. 항생제 내성/감수성 기준 및 용어 설명
- II. 호흡기 질병 5종 항생제 내성 검사 결과
- III. 소화기 질병 3종 항생제 내성 검사 결과

1. 항생제 감수성/ 내성 기준

항생제 감수성/ 내성 기준 (호흡기 질병 기준)

• 항생제 종류 및 기준(디스크 확산법 기준으로 검역원 자료 참조)

약제명		감수성	효과 중간	내성	약제명		감수성	효과 중간	내성
Amikacin(AK30)		17	15	6	Gentamicin(CN10)	Other	17	15	6
						S.suis	16	13	6
Amoxicillin(AML30)		17	14	6	Linsmycin(LS109)		17	14	6
Ampicillin(AMP10)	Other			29	Neomycin(N30)		17	13	6
	S.suis	26	19	8					
Cefazolin(KZ30)		23	20	6	Penicillin G(P10)		24	22	6
Tilmicosin(TIL15)		11		10	Tiamulin H.Fumarate(Ti25)		9		8
Colistin(CT10)		11		10	Streptomycin(S10)		15	11	6
Enrofloxacin(ENR5)		23	19	6	Tetracycline(T30)	Other	19	15	6
						S.suis	23	19	6
Florfenicol(FFC25)		22	19	6	Trimethoprim/ Sulfamethoxazole(STX25)	Other	18	15	6
						S.suis	19	16	6
Ceftiofur sodium(C2.5)		21	18	6	Tylosin tartrate(Ty25)		18	13	6

• 항생제 종류 및 기준

Sensitive(감수성)	감수성이 있다는 의미로 치료 효과를 기대할 수 있음.
Resistant(내성)	내성이 있다는 의미로 치료효과 없음.
Intermediate(효과 중간)	감수성과 내성의 중간 정도.

항생제 감수성/ 내성 기준 (소화기 질병 기준)

• 항생제 종류 및 기준(디스크 확산법 기준으로 검역원 자료 참조)

약제명	감수성	효과 중간	내성	약제명	감수성	효과 중간	내성
Amikacin(AK30)	17	15	6	Gentamicin(CN10)	15	13	6
Amoxicillin(AML30)	18	14	6	Linsmycin(LS109)	17	13	6
Ampicillin(AMP10)	17	14	6	Neomycin(N30)	17	13	6
Cefazolin(KZ30)	23	20	6	Penicillin G(P10)	15		14
Tilmicosin(TIL15)	11		10	Tiamulin H.Fumarate(Ti25)	17	13	6
Colistin(CT10)	11		10	Streptomycin(S10)	15	12	6
Enrofloxacin(ENR5)	23	17	6	Tetracycline(T30)	15	12	6
Florfenicol(FFC25)	22	19	6	Trimethoprim/ Sulfamethoxazole(STX25)	18	15	6
Ceftiofur sodium(C2.5)	21	18	6	Tylosin tartrate(Ty25)	18	13	6

• 항생제 종류 및 기준

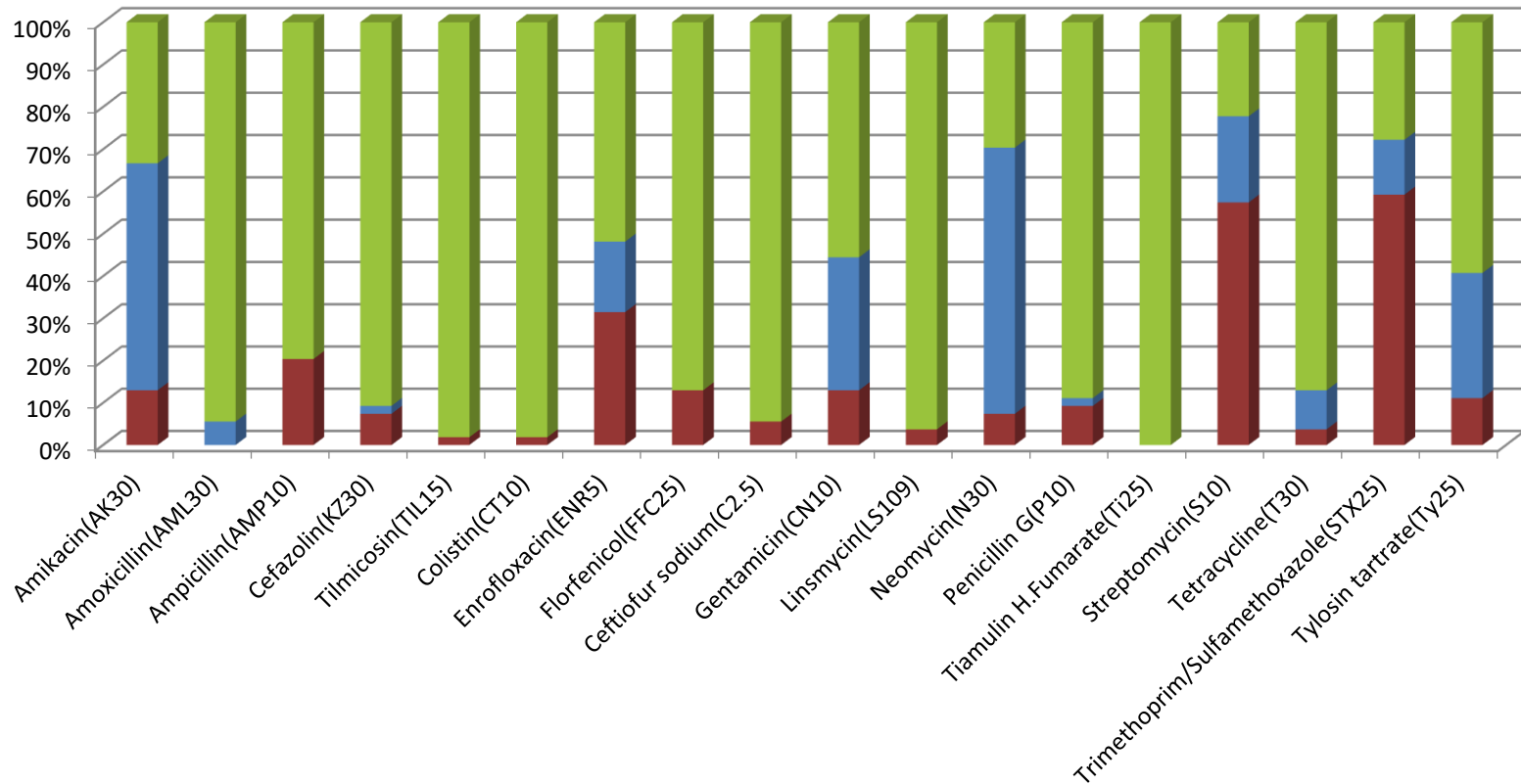
Sensitive(감수성)	감수성이 있다는 의미로 치료 효과를 기대할 수 있음.
Resistant(내성)	내성이 있다는 의미로 치료효과 없음.
Intermediate(효과 중간)	감수성과 내성의 중간 정도.

2. 호흡기 질병 5종 소화기 질병 3종

Haemophilus parasuis

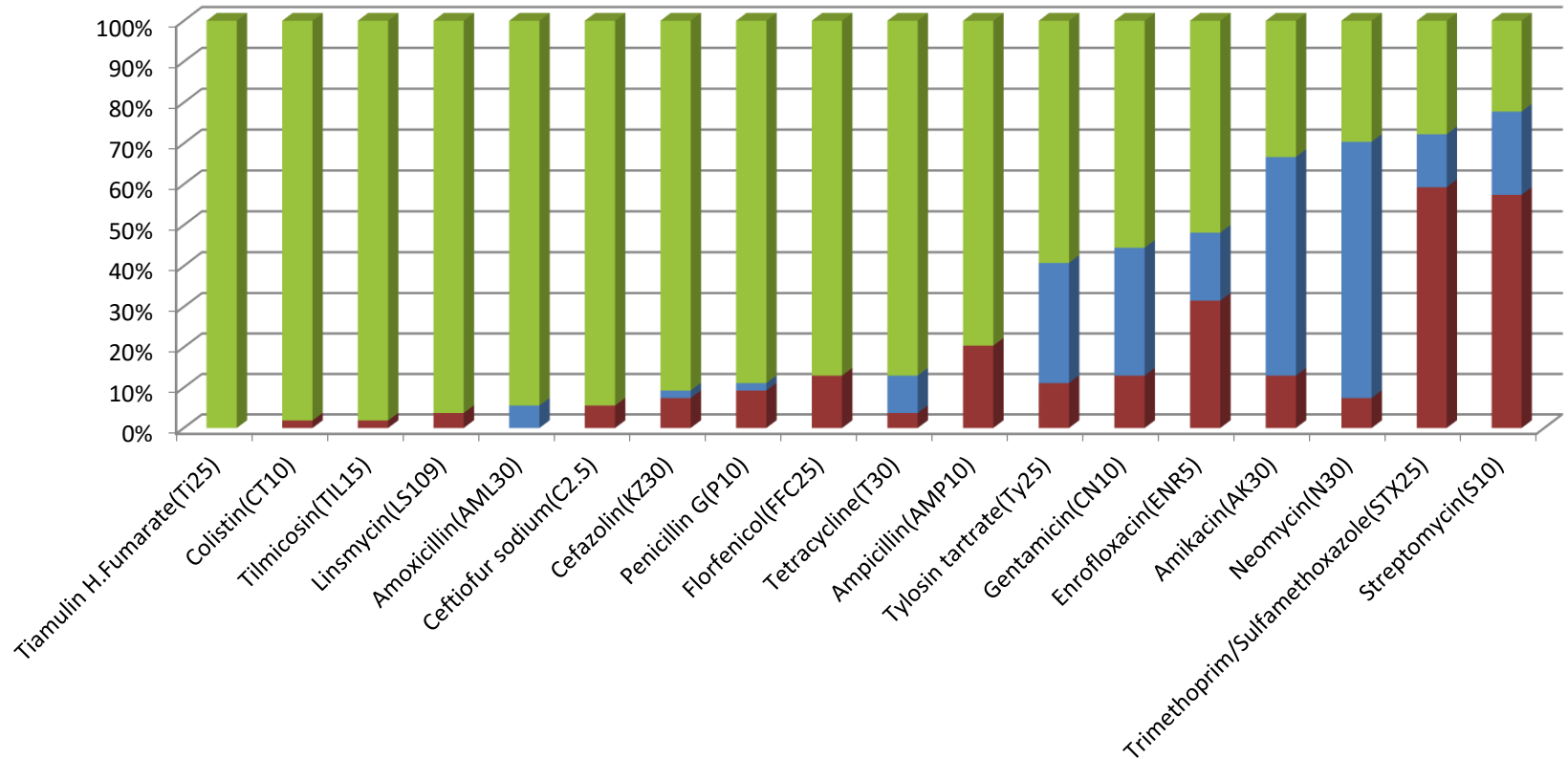
약 제 명	농장수	검사횟수	항생제 내성, 효과중간, 감수성 비율					
			Resistant		Intermediate		Sensitive	
			검출횟수	%	검출횟수	%	검출횟수	%
Amikacin(AK30)	41	54	7	13.0%	29	53.7%	18	33.3%
Amoxicillin(AML30)			0	0.0%	3	5.6%	51	94.4%
Ampicillin(AMP10)			11	20.4%	0	0.0%	43	79.6%
Cefazolin(KZ30)			4	7.4%	1	1.9%	49	90.7%
Tilmicosin(TIL15)			1	1.9%	0	0.0%	53	98.1%
Colistin(CT10)			1	1.9%	0	0.0%	53	98.1%
Enrofloxacin(ENR5)			17	31.5%	9	16.7%	28	51.9%
Florphenicol(FFC25)			7	13.0%	0	0.0%	47	87.0%
Ceftiofur sodium(C2.5)			3	5.6%	0	0.0%	51	94.4%
Gentamycin(CN10)			7	13.0%	17	31.5%	30	55.6%
Linsmycin(LS109)			2	3.7%	0	0.0%	52	96.3%
Neomycin(N30)			4	7.4%	34	63.0%	16	29.6%
Penicillin G(P10)			5	9.3%	1	1.9%	48	88.9%
Tiamulin H.Fumarate(Ti25)			0	0.0%	0	0.0%	54	100.0%
Streptomycin(S10)			31	57.4%	11	20.4%	12	22.2%
Tetracycline(T30)			2	3.7%	5	9.3%	47	87.0%
Trimethoprim/ Sulfamethoxazole(STX25)			32	59.3%	7	13.0%	15	27.8%
Tylosin tartrate(Ty25)			6	11.1%	16	29.6%	32	59.3%

Haemophilus parasuis



■ Resistant ■ Intermediate ■ Sensitive

Haemophilus parasuis

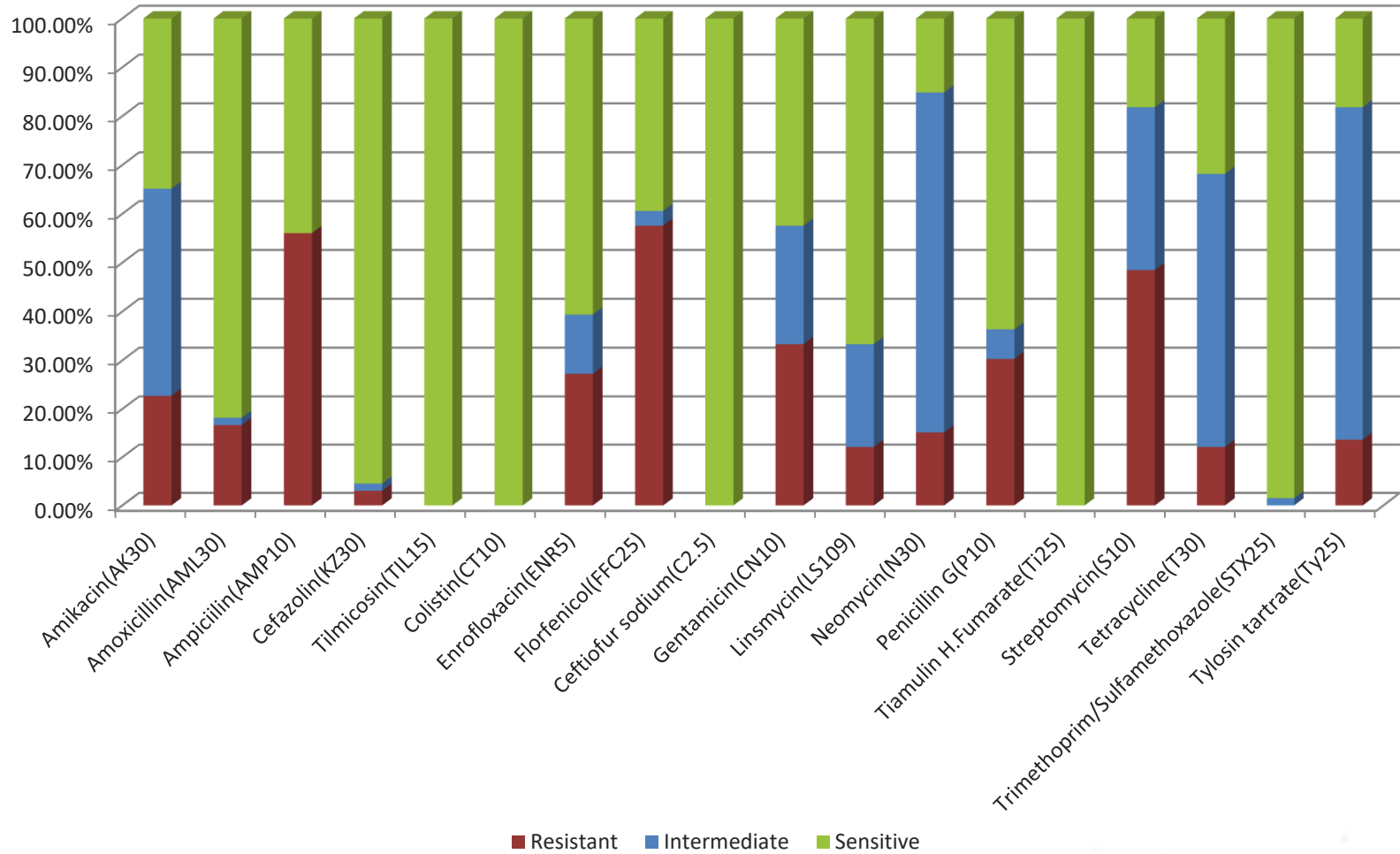


■ Resistant ■ Intermediate ■ Sensitive

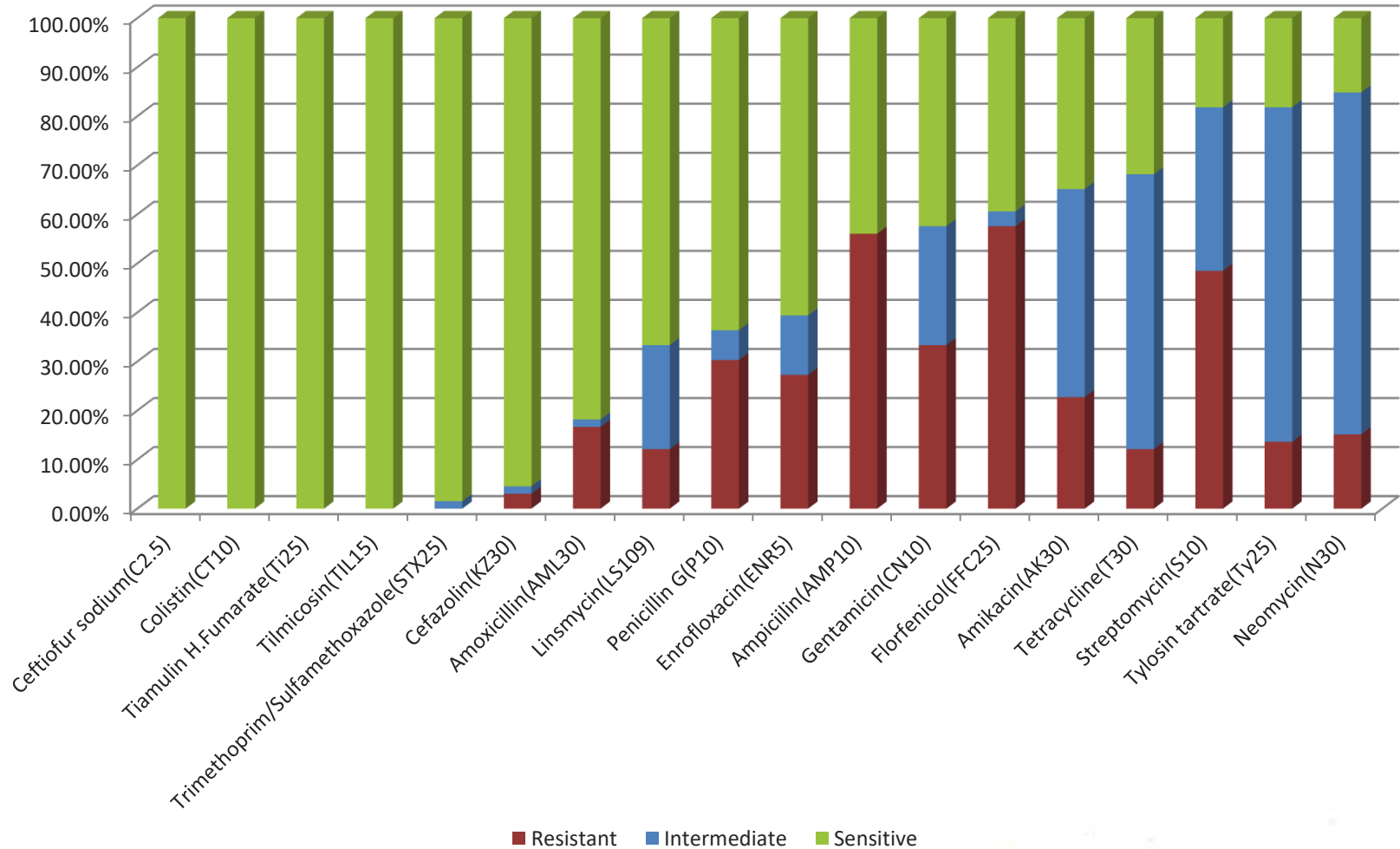
Actinobacillus pleuropneumoniae

약 제 명	농장수	Test	항생제 내성, 효과중간, 감수성 비율					
			Resistant		Intermediate		Sensitive	
			Test	%	Test	%	Test	%
Amikacin(AK30)	52	66	15	22.7%	28	42.4%	23	34.8%
Amoxicillin(AML30)			11	16.7%	1	1.5%	54	81.8%
Ampicillin(AMP10)			37	56.1%	0	0.0%	29	43.9%
Cefazolin(KZ30)			2	3.0%	1	1.5%	63	95.5%
Tilmicosin(TIL15)			0	0.0%	0	0.0%	66	100.0%
Colistin(CT10)			0	0.0%	0	0.0%	66	100.0%
Enrofloxacin(ENR5)			18	27.3%	8	12.1%	40	60.6%
Florphenicol(FFC30)			38	57.6%	2	3.0%	26	39.4%
Ceftiofur sodium(C30)			0	0.0%	0	0.0%	66	100.0%
Gentamicin(CN10)			22	33.3%	16	24.2%	28	42.4%
Linsmycin(LS109)			8	12.1%	14	21.2%	44	66.7%
Neomycin(N30)			10	15.2%	46	69.7%	10	15.2%
Penicillin G(P10)			20	30.3%	4	6.1%	42	63.6%
Tiamulin H.Fumarate(Ti25)			0	0.0%	0	0.0%	66	100.0%
Streptomycin(S10)			32	48.5%	22	33.3%	12	18.2%
Tetracycline(T30)			8	12.1%	37	56.1%	21	31.8%
Trimethoprim/ Sulfamethoxazole(STX25)			0	0.0%	1	1.5%	65	98.5%
Tylosin tartrate(Ty25)			9	13.6%	45	68.2%	12	18.2%

Actinobacillus pleuropneumoniae



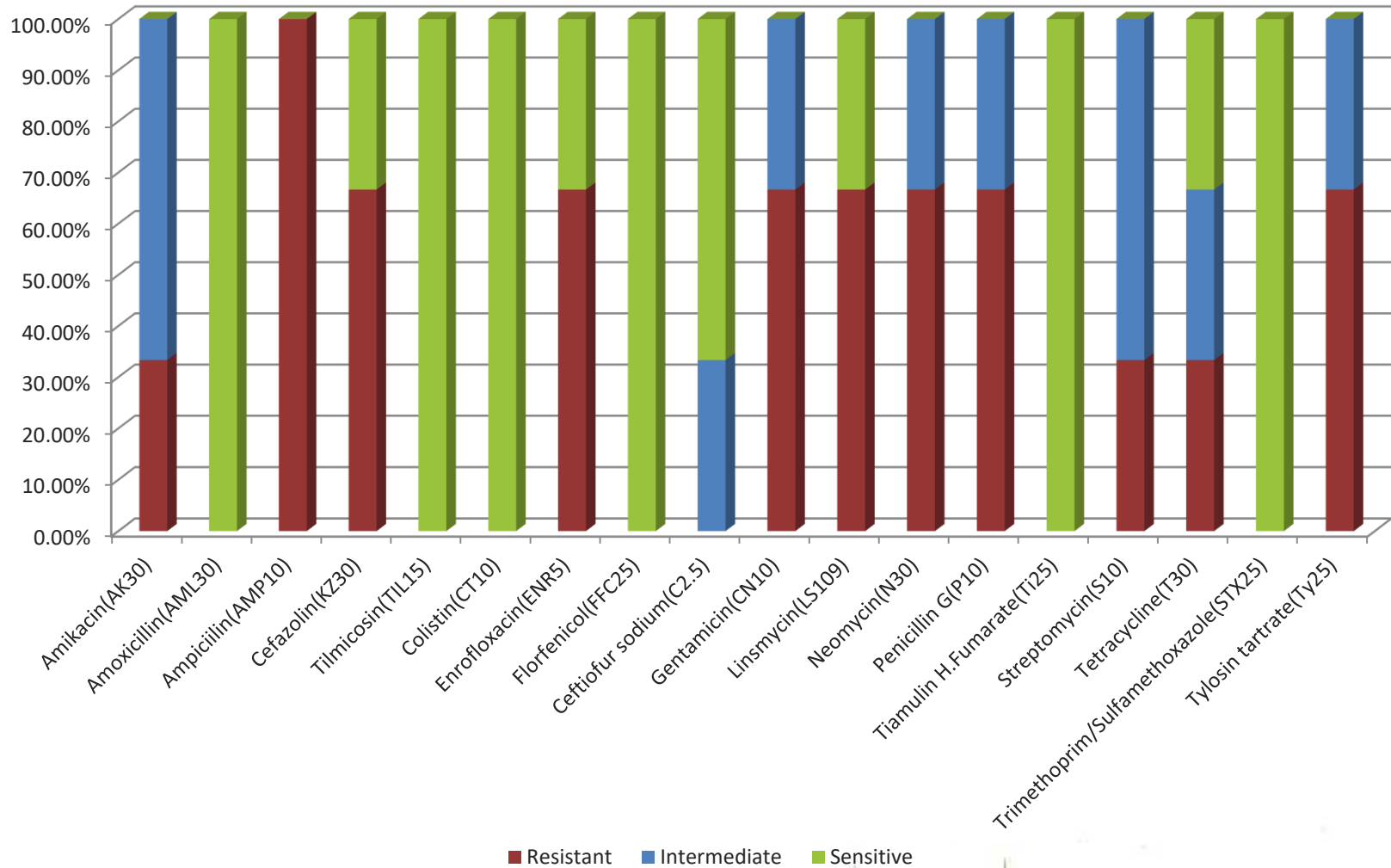
Actinobacillus pleuropneumoniae



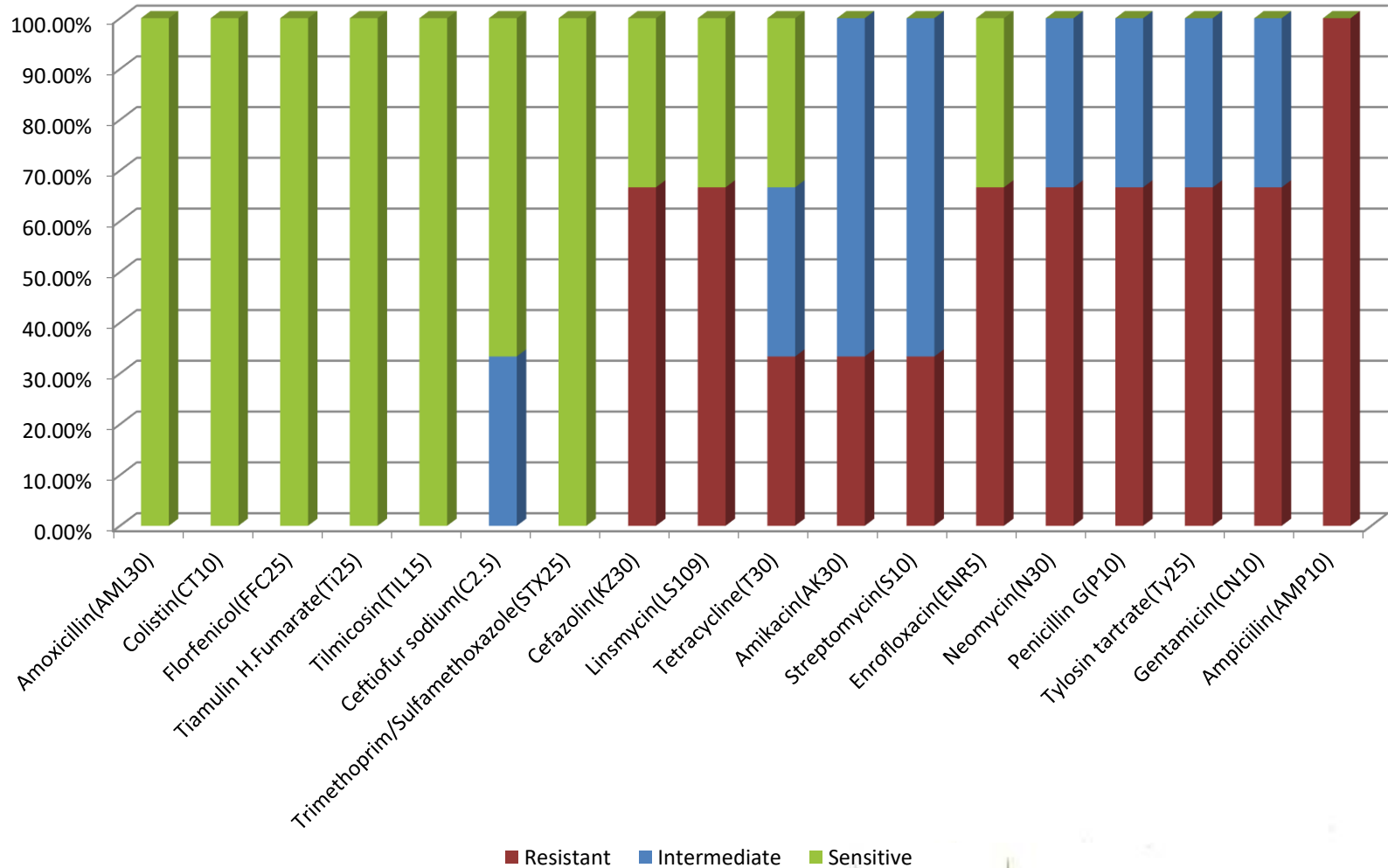
Actinobacillus suis

약 제 명	농장수	Test	항생제 내성, 효과중간, 감수성 비율					
			Resistant		Intermediate		Sensitive	
			Test	%	Test	%	Test	%
Amikacin(AK30)	2	3	1	33.3%	2	66.7%	0	0.0%
Amoxicillin(AML30)			0	0.0%	0	0.0%	3	100.0%
Ampicillin(AMP10)			3	100.0%	0	0.0%	0	0.0%
Cefazolin(KZ30)			2	66.7%	0	0.0%	1	33.3%
Tilmicosin(TIL15)			0	0.0%	0	0.0%	3	100.0%
Colistin(CT10)			0	0.0%	0	0.0%	3	100.0%
Enrofloxacin(ENR5)			2	66.7%	0	0.0%	1	33.3%
Florphenicol(FFC25)			0	0.0%	0	0.0%	3	100.0%
Ceftiofur sodium(C2.5)			0	0.0%	1	33.3%	2	66.7%
Gentamicin(CN10)			2	66.7%	1	33.3%	0	0.0%
Linsmycin(LS109)			2	66.7%	0	0.0%	1	33.3%
Neomycin(N30)			2	66.7%	1	33.3%	0	0.0%
Penicillin G(P10)			2	66.7%	1	33.3%	0	0.0%
Tiamulin H.Fumarate(Ti25)			0	0.0%	0	0.0%	3	100.0%
Streptomycin(S10)			1	33.3%	2	66.7%	0	0.0%
Tetracycline(T30)			1	33.3%	1	33.3%	1	33.3%
Trimethoprim/ Sulfamethoxazole(STX25)			0	0.0%	0	0.0%	3	100.0%
Tylosin tartrate(Ty25)			2	66.7%	1	33.3%	0	0.0%

Actinobacillus suis



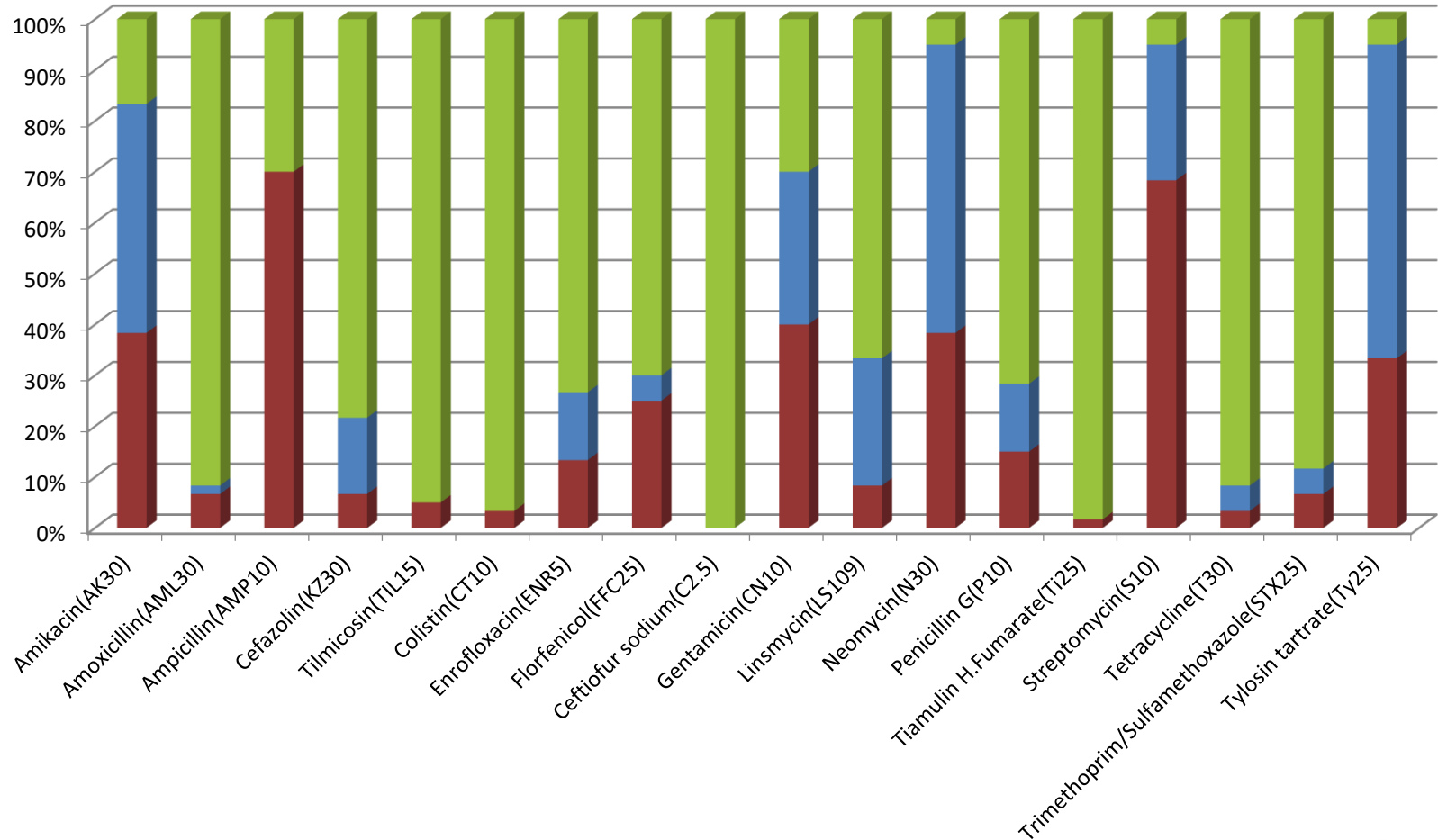
Actinobacillus suis



Pasteurella multocida

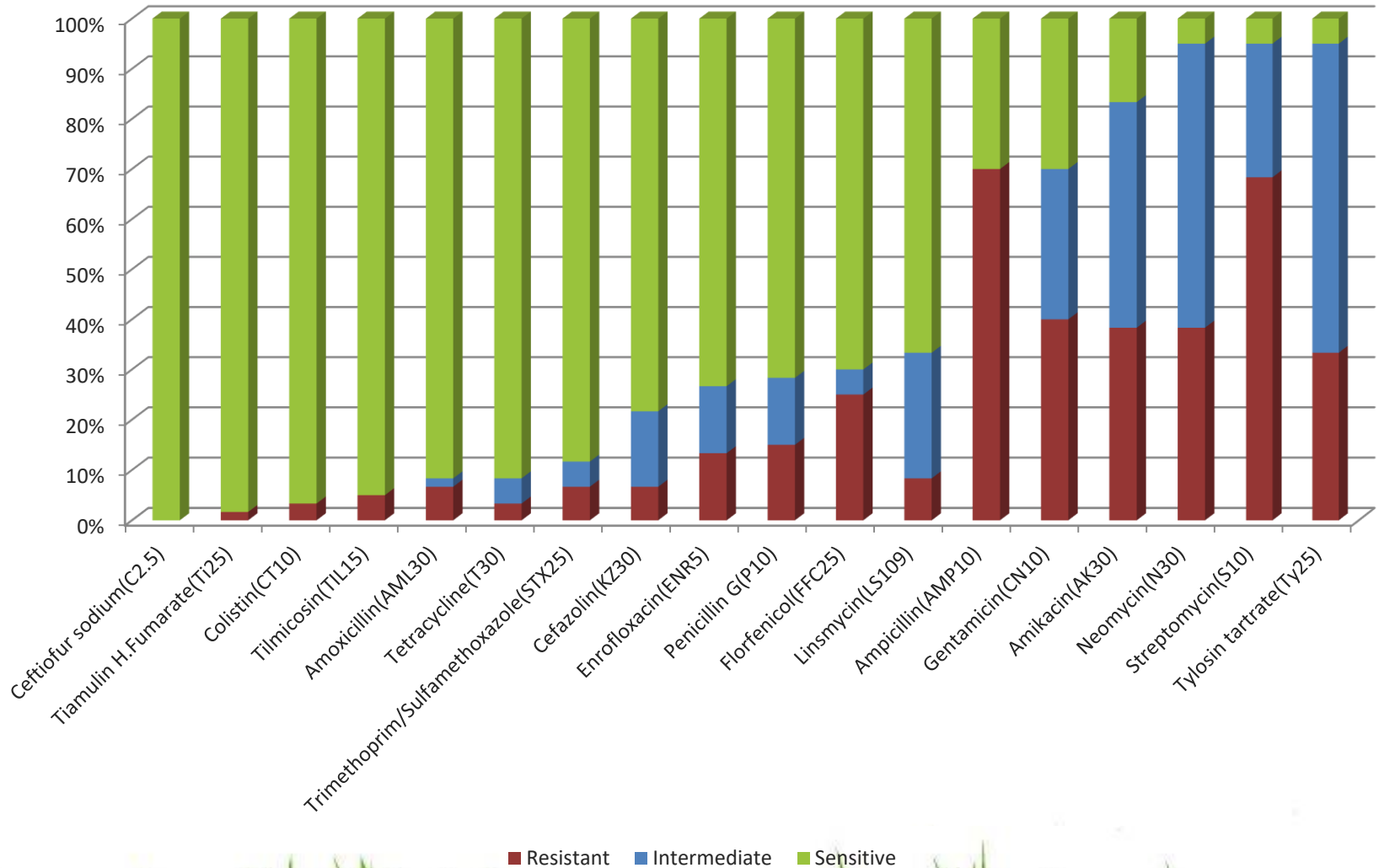
약 제 명	농장수	검사횟수	항생제 내성, 효과중간, 감수성 비율					
			Resistant		Intermediate		Sensitive	
			검출횟수	%	검출횟수	%	검출횟수	%
Amikacin(AK30)	49	60	23	38.3%	27	45.0%	10	16.7%
Amoxicillin(AML30)			4	6.7%	1	1.7%	55	91.7%
Ampicillin(AMP10)			42	70.0%	0	0.0%	18	30.0%
Cefazolin(KZ30)			4	6.7%	9	15.0%	47	78.3%
Tilmicosin(TIL15)			3	5.0%	0	0.0%	57	95.0%
Colistin(CT10)			2	3.3%	0	0.0%	58	96.7%
Enrofloxacin(ENR5)			8	13.3%	8	13.3%	44	73.3%
Florphenicol(FFC25)			15	25.0%	3	5.0%	42	70.0%
Ceftiofur sodium(C2.5)			0	0.0%	0	0.0%	60	100.0%
Gentamycin(CN10)			24	40.0%	18	30.0%	18	30.0%
Linsmycin(LS109)			5	8.3%	15	25.0%	40	66.7%
Neomycin(N30)			23	38.3%	34	56.7%	3	5.0%
Penicillin G(P10)			9	15.0%	8	13.3%	43	71.7%
Tiamulin H.Fumarate(Ti25)			1	1.7%	0	0.0%	59	98.3%
Streptomycin(S10)			41	68.3%	16	26.7%	3	5.0%
Tetracycline(T30)			2	3.3%	3	5.0%	55	91.7%
Trimethoprim/ Sulfamethoxazole(STX25)			4	6.7%	3	5.0%	53	88.3%
Tylosin tartrate(Ty25)			20	33.3%	37	61.7%	3	5.0%

Pasteurella multocida



■ Resistant ■ Intermediate ■ Sensitive

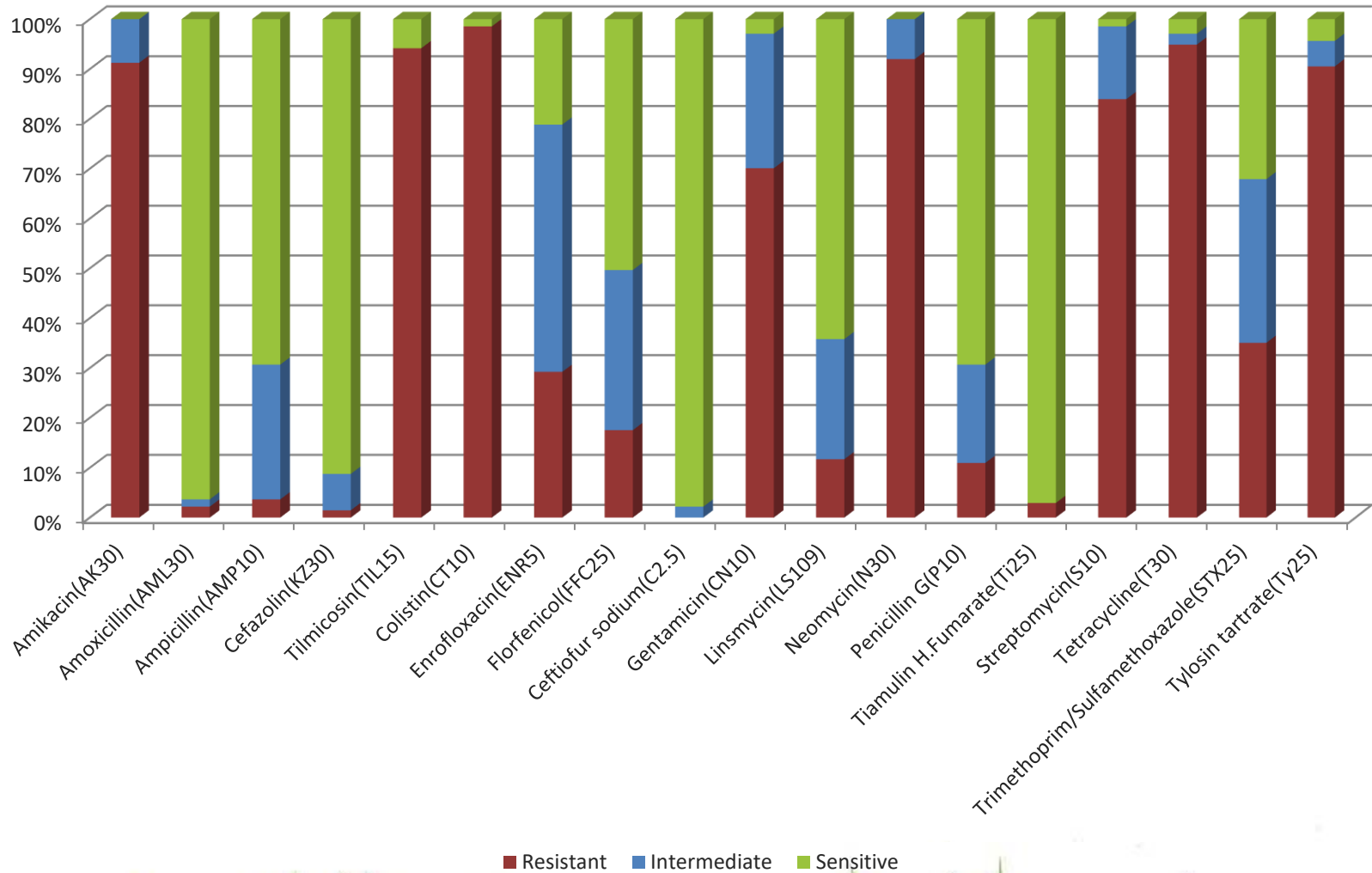
Pasteurella multocida



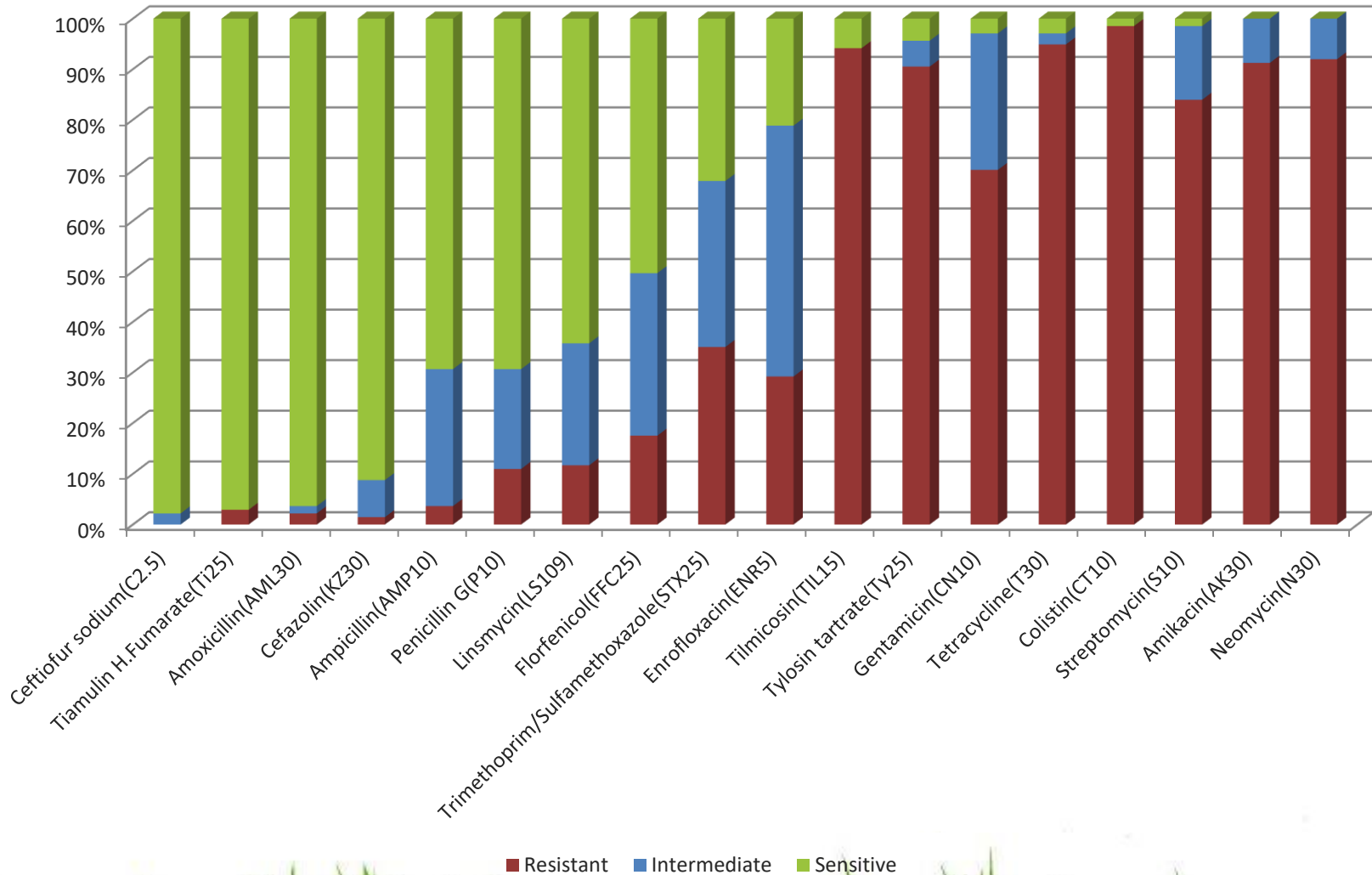
Streptococcus suis

약 제 명	농장수	검사횟수	항생제 내성, 효과중간, 감수성 비율					
			Resistant		Intermediate		Sensitive	
			검출횟수	%	검출횟수	%	검출횟수	%
Amikacin(AK30)	100	137	125	91.2%	12	8.8%	0	0.0%
Amoxicillin(AML30)			3	2.2%	2	1.5%	132	96.4%
Ampicillin(AMP10)			5	3.6%	37	27.0%	95	69.3%
Cefazolin(KZ30)			2	1.5%	10	7.3%	125	91.2%
Tilmicosin(TIL15)			129	94.2%	0	0.0%	8	5.8%
Colistin(CT10)			135	98.5%	0	0.0%	2	1.5%
Enrofloxacin(ENR5)			40	29.2%	68	49.6%	29	21.2%
Florphenicol(FFC25)			24	17.5%	44	32.1%	69	50.4%
Ceftiofur sodium(C2.5)			0	0.0%	3	2.2%	134	97.8%
Gentamycin(CN10)			96	70.1%	37	27.0%	4	2.9%
Linsmycin(LS109)			16	11.7%	33	24.1%	88	64.2%
Neomycin(N30)			126	92.0%	11	8.0%	0	0.0%
Penicillin G(P10)			15	10.9%	27	19.7%	95	69.3%
Tiamulin H.Fumarate(Ti25)			4	2.9%	0	0.0%	133	97.1%
Streptomycin(S10)			115	83.9%	20	14.6%	2	1.5%
Tetracycline(T30)			130	94.9%	3	2.2%	4	2.9%
Trimethoprim/ Sulfamethoxazole(STX25)			48	35.0%	45	32.8%	44	32.1%
Tylosin tartrate(Ty25)			124	90.5%	7	5.1%	6	4.4%

Streptococcus suis



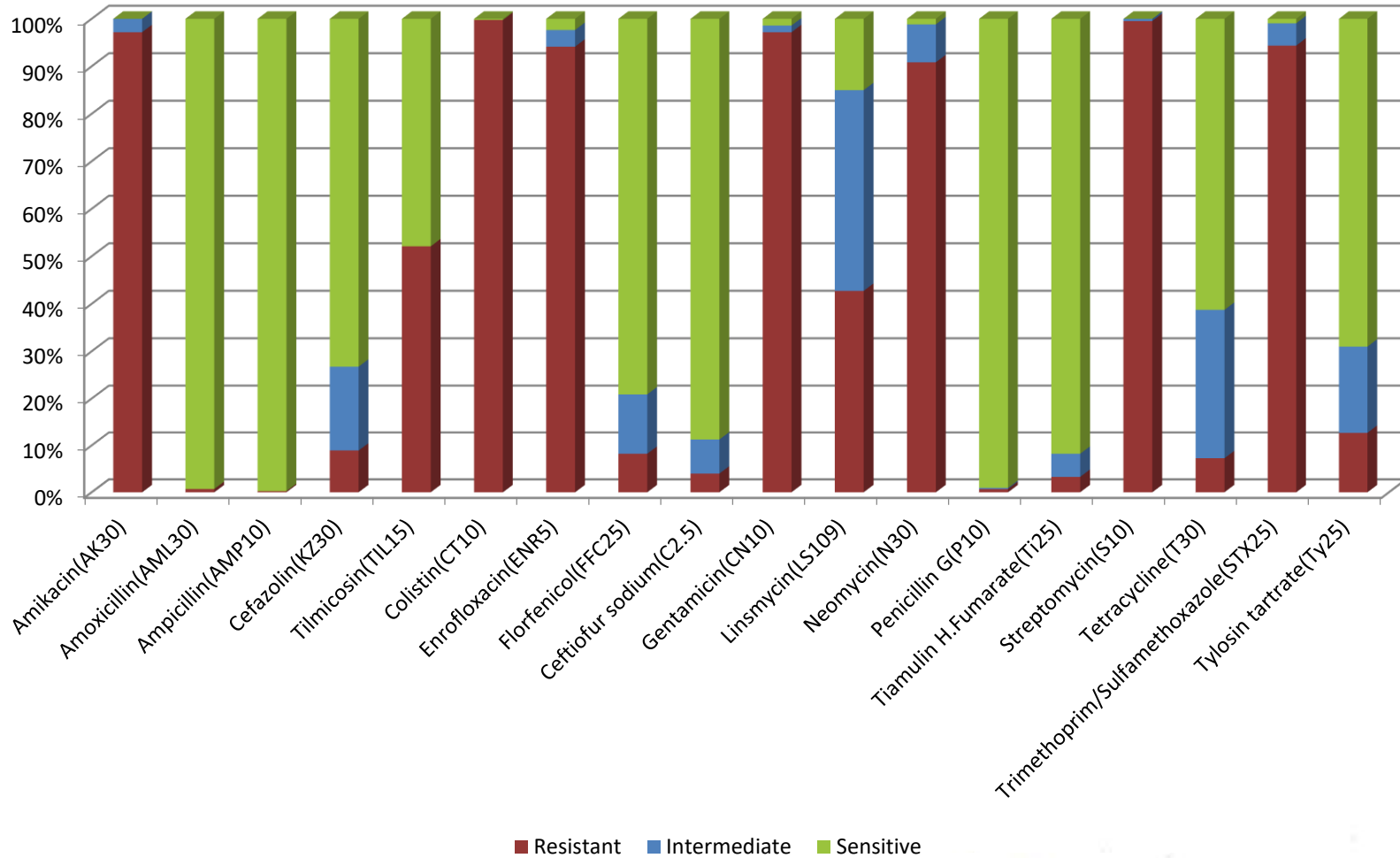
Streptococcus suis



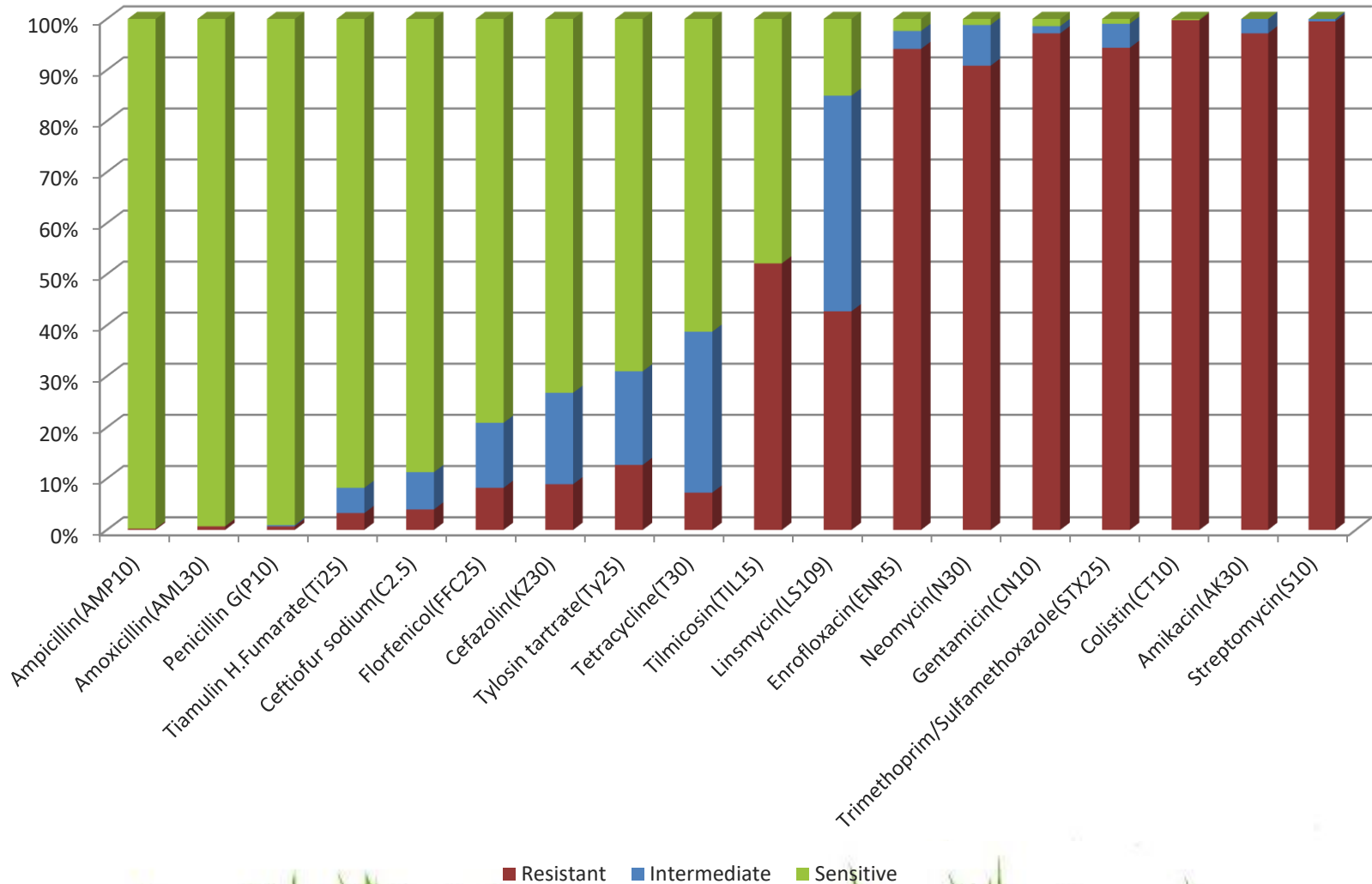
Clostridium perfringens

약 제 명	농장수	Test	항생제 내성, 효과중간, 감수성 비율					
			Resistant		Intermediate		Sensitive	
			Test	%	Test	%	Test	%
Amikacin(AK30)	231	426	414	97.2%	12	2.8%	0	0.0%
Amoxicillin(AML30)			3	0.7%	0	0.0%	423	99.3%
Ampicillin(AMP10)			1	0.2%	0	0.0%	425	99.8%
Cefazolin(KZ30)			38	8.9%	76	17.8%	312	73.2%
Tilmicosin(TIL15)			222	52.1%	0	0.0%	204	47.9%
Colistin(CT10)			425	99.8%	0	0.0%	1	0.2%
Enrofloxacin(ENR5)			401	94.1%	15	3.5%	10	2.3%
Florphenicol(FFC25)			35	8.2%	54	12.7%	337	79.1%
Ceftiofur sodium(C2.5)			17	4.0%	31	7.3%	378	88.7%
Gentamycin(CN10)			414	97.2%	6	1.4%	6	1.4%
Linsmycin(LS109)			182	42.7%	180	42.3%	64	15.0%
Neomycin(N30)			387	90.8%	34	8.0%	5	1.2%
Penicillin G(P10)			3	0.7%	1	0.2%	422	99.1%
Tiamulin H.Fumarate(Ti25)			14	3.3%	21	4.9%	391	91.8%
Streptomycin(S10)			424	99.5%	2	0.5%	0	0.0%
Tetracycline(T30)			31	7.3%	134	31.5%	261	61.3%
Trimethoprim/ Sulfamethoxazole(STX25)			402	94.4%	20	4.7%	4	0.9%
Tylosin tartrate(Ty25)			54	12.7%	78	18.3%	294	69.0%

Clostridium perfringens



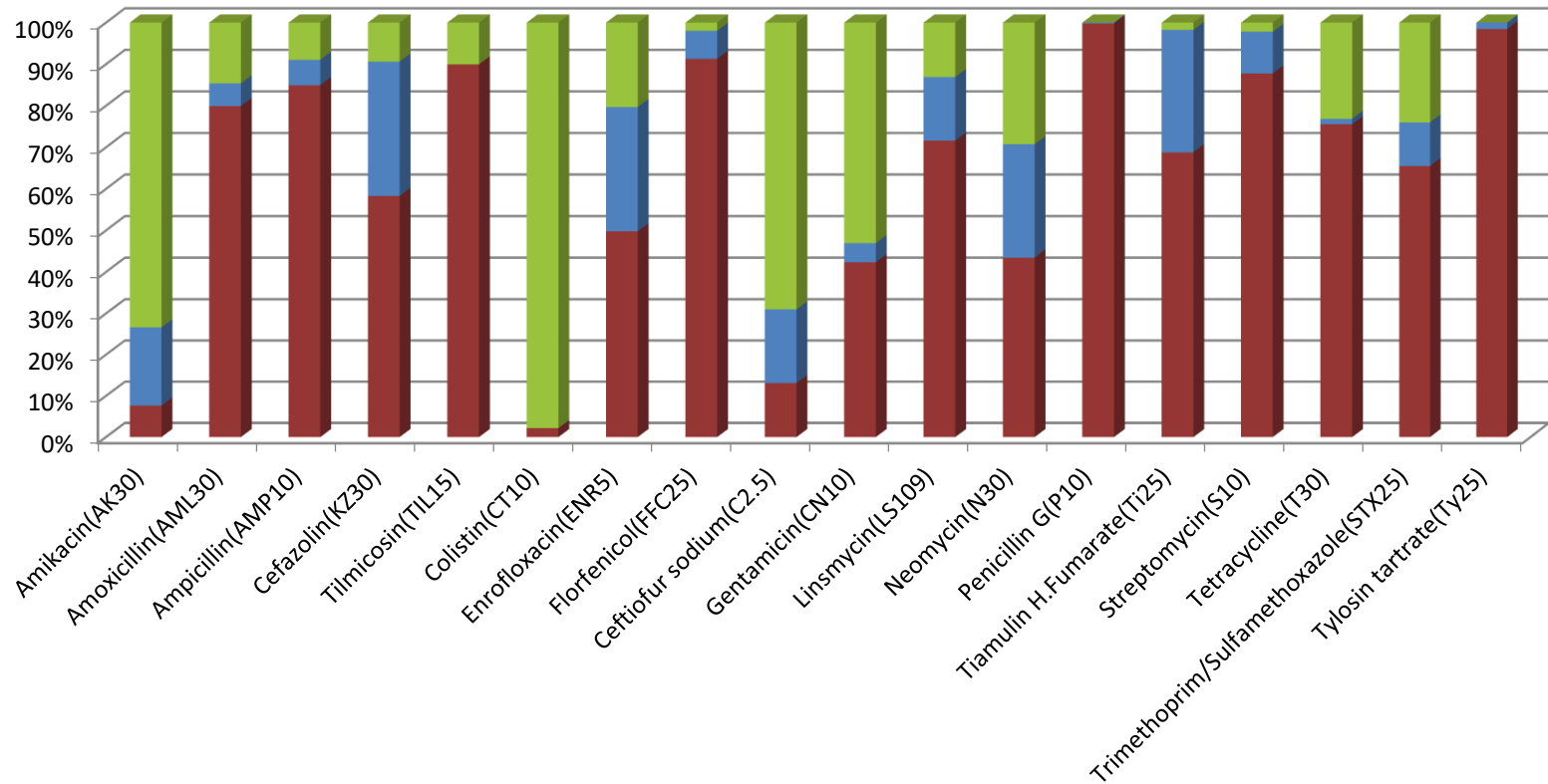
Clostridium perfringens



Escherichia coli

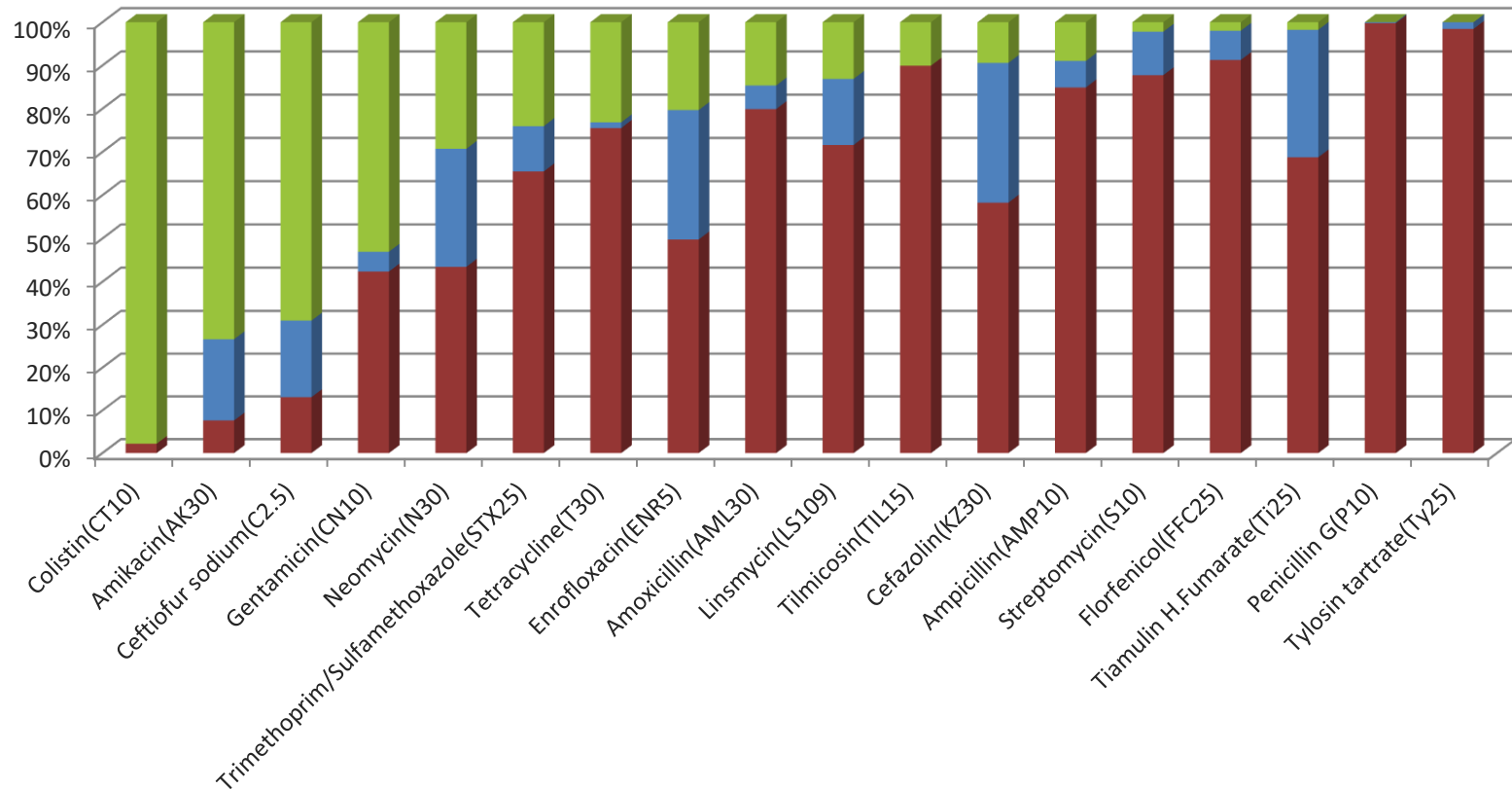
약 제 명	농장수	Test	항생제 내성, 효과중간, 감수성 비율					
			Resistant		Intermediate		Sensitive	
			Test	%	Test	%	Test	%
Amikacin(AK30)	322	458	35	7.6%	87	19.0%	336	73.4%
Amoxicillin(AML30)			366	79.9%	25	5.5%	67	14.6%
Ampicillin(AMP10)			389	84.9%	28	6.1%	41	9.0%
Cefazolin(KZ30)			267	58.3%	148	32.3%	43	9.4%
Tilmicosin(TIL15)			412	90.0%	0	0.0%	46	10.0%
Colistin(CT10)			10	2.2%	0	0.0%	448	97.8%
Enrofloxacin(ENR5)			228	49.8%	137	29.9%	93	20.3%
Florphenicol(FFC25)			418	91.3%	31	6.8%	9	2.0%
Ceftiofur sodium(C2.5)			60	13.1%	82	17.9%	316	69.0%
Gentamycin(CN10)			194	42.4%	21	4.6%	243	53.1%
Linsmycin(LS109)			328	71.6%	70	15.3%	60	13.1%
Neomycin(N30)			199	43.4%	125	27.3%	134	29.3%
Penicillin G(P10)			457	99.8%	1	0.2%	0	0.0%
Tiamulin H.Fumarate(Ti25)			315	68.8%	135	29.5%	8	1.7%
Streptomycin(S10)			402	87.8%	46	10.0%	10	2.2%
Tetracycline(T30)			346	75.5%	6	1.3%	106	23.1%
Trimethoprim/ Sulfamethoxazole(STX25)			300	65.5%	48	10.5%	110	24.0%
Tylosin tartrate(Ty25)			451	98.5%	7	1.5%	0	0.0%

Escherichia coli



■ Resistant ■ Intermediate ■ Sensitive

Escherichia coli

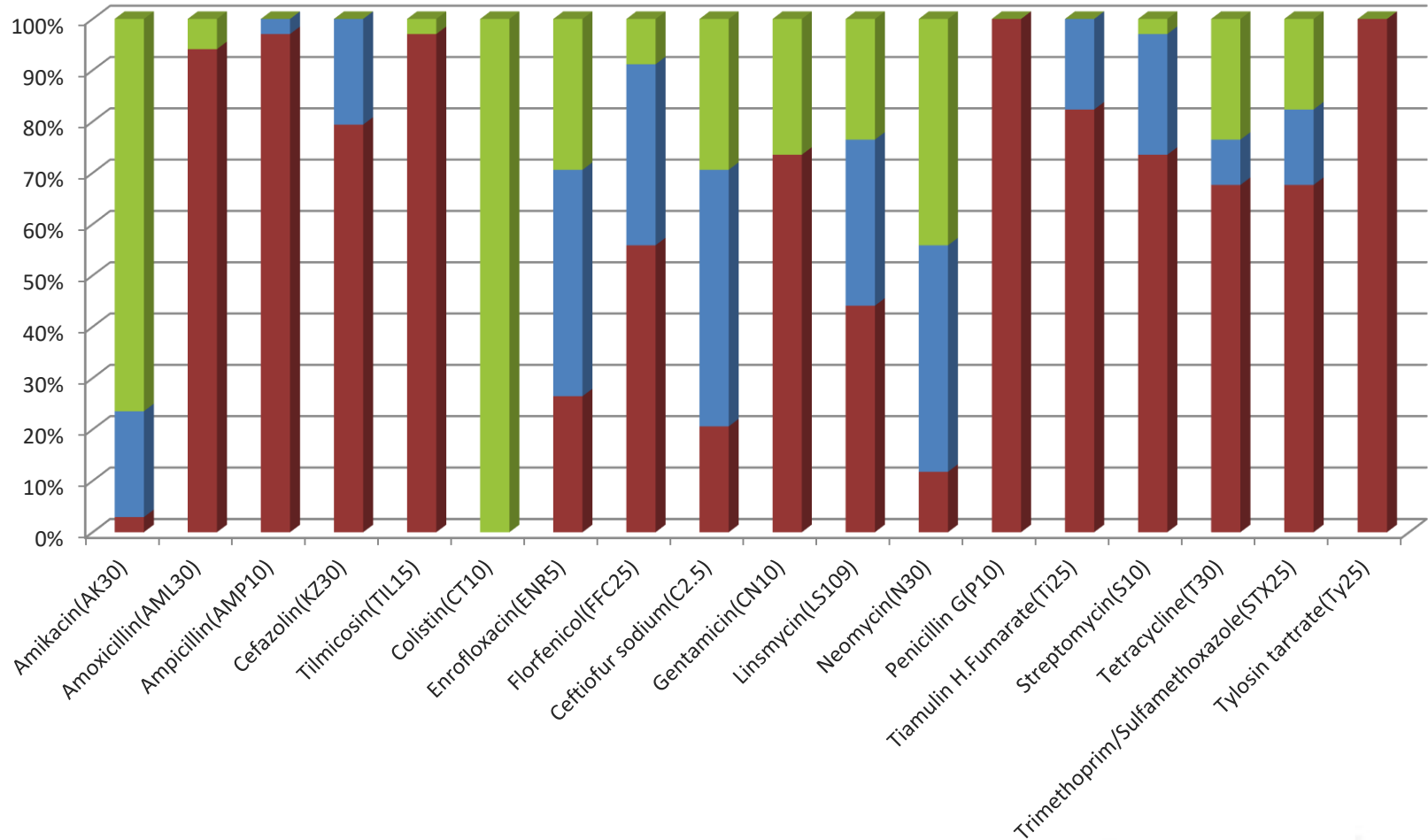


■ Resistant ■ Intermediate ■ Sensitive

Salmonella spp.(serogroup B)

약 제 명	농장수	검사횟수	항생제 내성, 효과중간, 감수성 비율					
			Resistant		Intermediate		Sensitive	
			검출횟수	%	검출횟수	%	검출횟수	%
Amikacin(AK30)	23	34	1	2.9%	7	20.6%	26	76.5%
Amoxicillin(AML30)			32	94.1%	0	0.0%	2	5.9%
Ampicillin(AMP10)			33	97.1%	1	2.9%	0	0.0%
Cefazolin(KZ30)			27	79.4%	7	20.6%	0	0.0%
Tilmicosin(TIL15)			33	97.1%	0	0.0%	1	2.9%
Colistin(CT10)			0	0.0%	0	0.0%	34	100.0%
Enrofloxacin(ENR5)			9	26.5%	15	44.1%	10	29.4%
Florfenicol(FFC25)			19	55.9%	12	35.3%	3	8.8%
Ceftiofur sodium(C2.5)			7	20.6%	17	50.0%	10	29.4%
Gentamicin(CN10)			25	73.5%	0	0.0%	9	26.5%
Linsmycin(LS109)			15	44.1%	11	32.4%	8	23.5%
Neomycin(N30)			4	11.8%	15	44.1%	15	44.1%
Penicillin G(P10)			34	100.0%	0	0.0%	0	0.0%
Tiamulin H.Fumarate(Ti25)			28	82.4%	6	17.6%	0	0.0%
Streptomycin(S10)			25	73.5%	8	23.5%	1	2.9%
Tetracycline(T30)			23	67.6%	3	8.8%	8	23.5%
Trimethoprim/Sulfamethoxazole (STX25)			23	67.6%	5	14.7%	6	17.6%
Tylosin tartrate(Ty25)			34	100.0%	0	0.0%	0	0.0%

Salmonella spp.(serogroup B)



■ Resistant ■ Intermediate ■ Sensitive

Salmonella spp.(serogroup B)

