

CHAPTER I

INTRODUCTION

Salmonella is one of the most common causes of human gastroenteritis and a problem in food and drink industries and animal farm worldwide. Thus a Global Salmonella Surveillance Network has been established by WHO since 2000. In response to this concern, Salmonella isolated from human infections and from different reservoirs which have been submitted to the WHO International Salmonella and Shigella Centre in Thailand for serotyping between A.D. 1993-2000 have been investigated. The results revealed that the relative prevalence of *Salmonella* Schwarzengrund had dramatically increased among isolates from humans and chicken meat in A.D. 1999-2001 comparing to A.D. 1993-1998. *S. Schwarzengrund* constituted of 0-0.6 % of all reported human salmonellosis between A.D. 1993-1998 but increased to 1.6-2.4 % in 1999-2001. The relative prevalence of *S. Schwarzengrund* among isolates from chicken meat had also increased from a similar low figure to 26 % of all isolates in 2001 as shown in table 1 and figure 1(1).

Table 1 Annual number of reported *Salmonella* isolates from infections in humans of the 25 most common serovars between 1993 to 2001

(WHO National *Salmonella* and *Shigella* Center, the National Institute of Health, Department of Medical Science, Ministry of Public Health)

Serovars	Year and number of isolate									Total
	1993	1994	1995	1996	1997	1998	1999	2000	2001	
Weltevreden	443	574	816	337	335	485	862	660	657	5,169
Enteritidis	471	833	877	489	365	396	401	306	357	4,495
Anatum	146	397	568	229	298	320	235	412	340	2,945
Derby	368	650	576	277	252	251	141	156	111	2,782
1, 4, 5,12:i:-ssp.I	193	272	422	355	212	228	248	248	336	2,514
Typhimurium	154	216	326	238	305	278	258	205	175	2,155
Rissen	54	162	222	143	295	246	317	287	259	1,985
Stanley	64	147	186	85	99	147	245	210	242	1,425
Panama	31	64	91	80	173	172	264	209	160	1,244
Agona	118	215	236	103	102	76	95	76	75	1,096

Serovars	1993	1994	1995	1996	1997	1998	1999	2000	2001	Total
Paratyphi A	76	107	134	330	47	157	108	-	15	974
Hadar	64	81	198	67	80	83	96	106	136	911
Cholerasuis	99	87	139	122	68	118	92	69	85	879
Krefeld	149	129	135	52	74	67	72	36	32	746
Paratyphi B var java	31	40	66	46	61	56	113	120	117	650
Typhi	61	53	41	42	43	64	68	-	213	585
Virchow	52	69	77	28	35	45	89	70	102	567
Lexington	40	67	66	35	45	60	68	56	88	525
Blockley	82	78	53	27	20	49	45	56	47	457
Hvittingfoss	12	94	125	27	12	16	66	41	33	426
London	27	92	72	45	67	71	24	15	8	421
Senftenberg	62	126	64	16	28	37	29	20	26	408
Bovismorbificans	32	54	87	16	37	42	56	30	29	383
Schwarzengrund	0	9	3	3	6	26	<u>76</u>	<u>99</u>	<u>98</u>	320
Emek	31	38	56	29	29	51	30	26	27	317
Other	424	1116	1011	415	380	643	679	577	366	5,611
Total	3,284	5,770	6,647	3,636	3,468	4,184	4,777	4,090	4,134	39,990

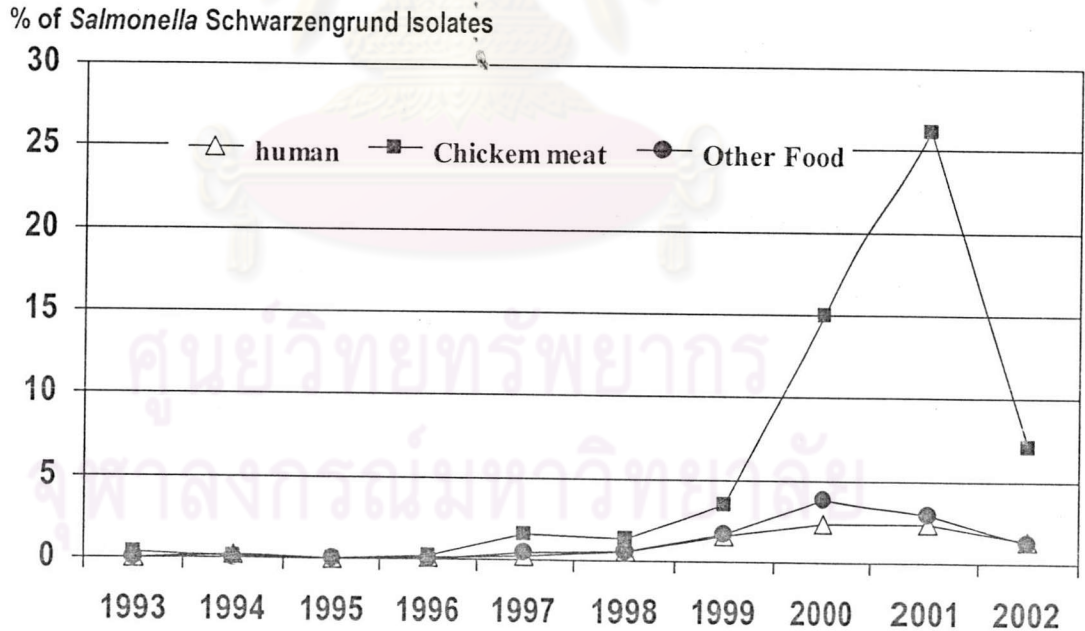


Figure 1 Epidemiological changing of *Salmonella* Schwarzengrund in varies reservoir between 1993 to 2001

(WHO National *Salmonella* and *Shigella* Center , the National Institute of Health , Department of Medical Science, Ministry of Public Health)

The relative increasing numbers of *Salmonella* Schwarzengrund compare to other *Salmonella* serovars in human patients and chicken meat samples in Thailand could be coincidence or have an epidemiological relation. The goal of this research study wanted to find the epidemiological relation of *Salmonella* Schwarzengrund isolated from human patients and from chicken meat samples in Thailand during A.D. 2000-2002. The proof of their epidemiological relation was used their antimicrobial resistant patterns as tool for preliminary conclusion. The conclusive proof was performed by comparing their DNA-fingerprint from Pulsed-Field Gel Electrophoresis (PFGE). Since, numbers of genetic methods were available for the characterization of bacterial isolates and it would be of importance to determine whether there is a relationship of the increased incidence in chicken and humans(1).



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย