SALMONELLA GOVERDHAN,
A NEW SEROTYPE FROM SEWAGE

V.K. Sharma and C.M. Singh¹

Department of Bacteriology
Uttar Pradesh College of Veterinary Science
and Animal Husbandry, Mathura, India

ABSTRACT. A previously unrecognized Salmonella serotype (9,12:k:1,6) is described and the name S. goverdhan is given to it. The organism was isolated from sewage, in Uttar Pradesh, India.

- - - - -

The purpose of this paper is to describe and name a new and recently characterized serotype of Salmonella. This serotype is represented by a single culture which was isolated from sewage. An investigation was undertaken to screen the sewage from Mathura city in Uttar Pradesh for the presence of Salmonella pathogens. Five hundred samples of processed sewage revealed the presence of 6 serotypes of Salmonella, including a new one.

Throughout the course of this study Kauffmann's tetrathionate broth containing 0.001% brilliant green and 5% ox bile was used as enrichment medium and brilliant green agar containing sucrose and salicin in addition to lactose was used as a selective medium. From the selective medium plates, red colonies were transferred to MacConkey's mannitol agar plates wherein lactose was replaced by mannitol. Mannitol fermenters were examined for indole production, nitrate reduction, glucose fermentation, and for their methyl-red reaction. The cultures giving typical Salmonella reactions were tested for slide agglutination with a polyvalent Salmonella O serum (A-58). These organisms were further examined for lysis with Salmonella specific O-1 phage (Cherry et al. 1954).

¹ Present address: Dr. C. M. Singh, Director, Indian Veterinary Research Institute, Izatnagar, U. P. (India).

Salmonella cultures thus obtained were then subjected to somatic and flagellar typing; the typing was confirmed by Dr. Joan Taylor of Salmonella Reference Laboratory, London.

Out of 500 samples examined 31 were positive for Salmonella. A total of 6 serotypes, including a new one, were represented in the positive samples. The new serotype was found to be susceptible to O-1 phage lysis. Dr. Taylor studied the structural formula of this serotype. It was finally accepted as a new Salmonella serotype of Dr. Le Minor, Director, International Salmonella Centre, Pasteur Institute, Paris, with antigenic structure 9,12:k:1,6 and the designation S. goverdhan is here applied to it.

The biochemical reactions as determined by the authors and Dr. Taylor are as follows:

Glucose	+	Stern's glycerol	-14
Mannitol	+	Sodium citrate	+1
Sucrose	-	d-tartrate	-7
Salicin	-	l-tartrate	-7
Dulcitol	+	m-tartrate	-7
Kylose	+	Malonate	-
Arabinose	+	Mucate	-
Adonitol	-	Kohn's gelatine	-
Rhamnose	+	Indole	-
Sorbose	-	Nitrate reduction	+
Sorbitol	+	H ₂ S	+
Lactose	-	Methyl-red	+
Maltose	+	Voges-Proskauer	-
Trehalose	+	5% Lactose	-
Inositol	-	O. N. P. G.	-

The biochemical reactions of the serotype are characteristic of subgenus 1. The antibiotic sensitivity of the new serotype S. goverdhan as well as its behaviour towards iota phage for lysogenic conversion and transduction is under study and will be reported later on.

REFERENCE

- Cherry, W. B., B. R. Davis, P. R. Edwards and R. B. Hogan.
1954. A simple procedure for the identification of the
genus Salmonella by means of a specific bacteriophage.
Jour. Lab. Clin. Med. 44:51-56.