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Isolation and identification of " *Escherichia coli*" from local beef meat samples in Al-Qadesiayh province

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



صدق الله العلي العظيم

(المك:1)

Dedication

Before we go, we offer our highest thinks,
appreciation gratitude and love ...

To those who bore the most sacred message in life,

To those who paved the way for us the path of
science and knowledge, to all our distinguished
professor, and especially to the thanks and
appreciation of

Assist.teacher. Hiba Shehab Ahmed

To my angel in life to the meaning of love and to
the meaning of tenderness and devotion....My dear
father

To the one who was the secret of my success and
the tenderness of a surgical balm to... dear mother

Abstract

A total of 30 samples of beef meats were examined for the presence of "*Escherichia coli*". The samples were randomly obtained from butchered supermarket in "Al-Qadesiayh province" from November month 2017 to February month 2018. The results revealed the contamination of beef 15 of 30 by (50 %) of the "bacterium *E.coli*". The current study aims at isolating and diagnosing a bacterium "*E. coli*" from local meat using traditional methods and investigating the extent to which these meat are contaminated by the pathogenic strain of a bacterium "*E.coli*".

Introduction

" *Escherichia coli*" known as "*E. coli*" is a Gram-negative, facultative anaerobic, has rod-shaped, coliform bacterium of the genus *Escherichia* that is usually found in the lower part of intestine of warm-blooded organisms [1][2].

Most "*E. coli*" strains are nonpathogenic, but some serotypes can cause serious food poisoning in their hosts, and are sometimes responsible for food contamination.[3].

There is a symbiotic relationship between the host and non-pathogenic strains of "*E. coli*" bacteria, which are normal flora in the digestive tract.

This relationship is the fact that these bacteria play an important role in the production of "vitamin K" [4] and prevent intestinal invasion of the pathogenic strains [5][6].

" *E. coli*" is excreted into the environment within fecal matter. The bacterium grows massively in fresh fecal matter under aerobic conditions for 3 days, but its numbers lowers slowly afterwards[7].

The current study aims at isolating and diagnosing a bacterium "*E. coli*" from local meat using traditional methods and investigating the extent to which these meat are contaminated by the pathogenic strain of a bacterium "*E.coli*".

Material and methods

Collected (30) samples of local beef from November month (2017) to February month 2018 and immediately put in test tube contain nutrient broth, all meat samples were fresh, uncooked, in vitro cultured on and then "**MacConkey Agar**" then incubated in incubator for (24) h at (37° C) to allow development of colonies after then cultured the colony that appeared pink color on "**EMB (Eosin-methylene blue)**" agar which considers selective for "*E.coli*" to detection sheen metallic green colony of "*E.coli*".

Result

The results appeared 15 infected sample of total samples at percent (50 %) all of which gave the green metallic sheen in "EMB" , as shown in the following table 1 and the picture 1 :

Table (1): Prevalence of "E.coli" in beef meat:

Total number of sample	N. of Positive sample	Percentage %	N. of Negative sample	Percentage %
30	15	50%	15	50%

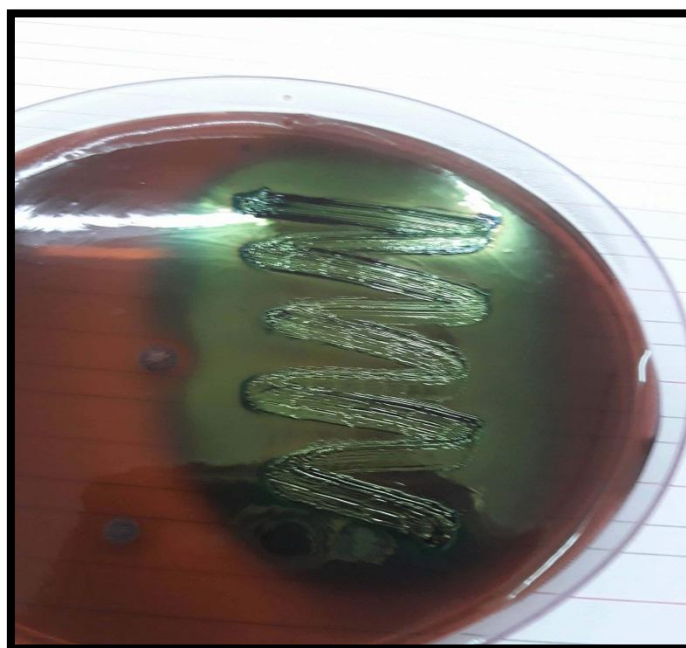


Figure (1) showed " *E.coli*" on E MB media

Dissection

The results in the present study recorded higher rate than the results of (8) 2011 in the United States , (9) 2000 in Argentina and (10) 1987 that recorded (19 % , 3.8 % , 3.7%) respectively.

The present study agree with study of (11) that recorded rate 68.9% of beef meat sample in United States.

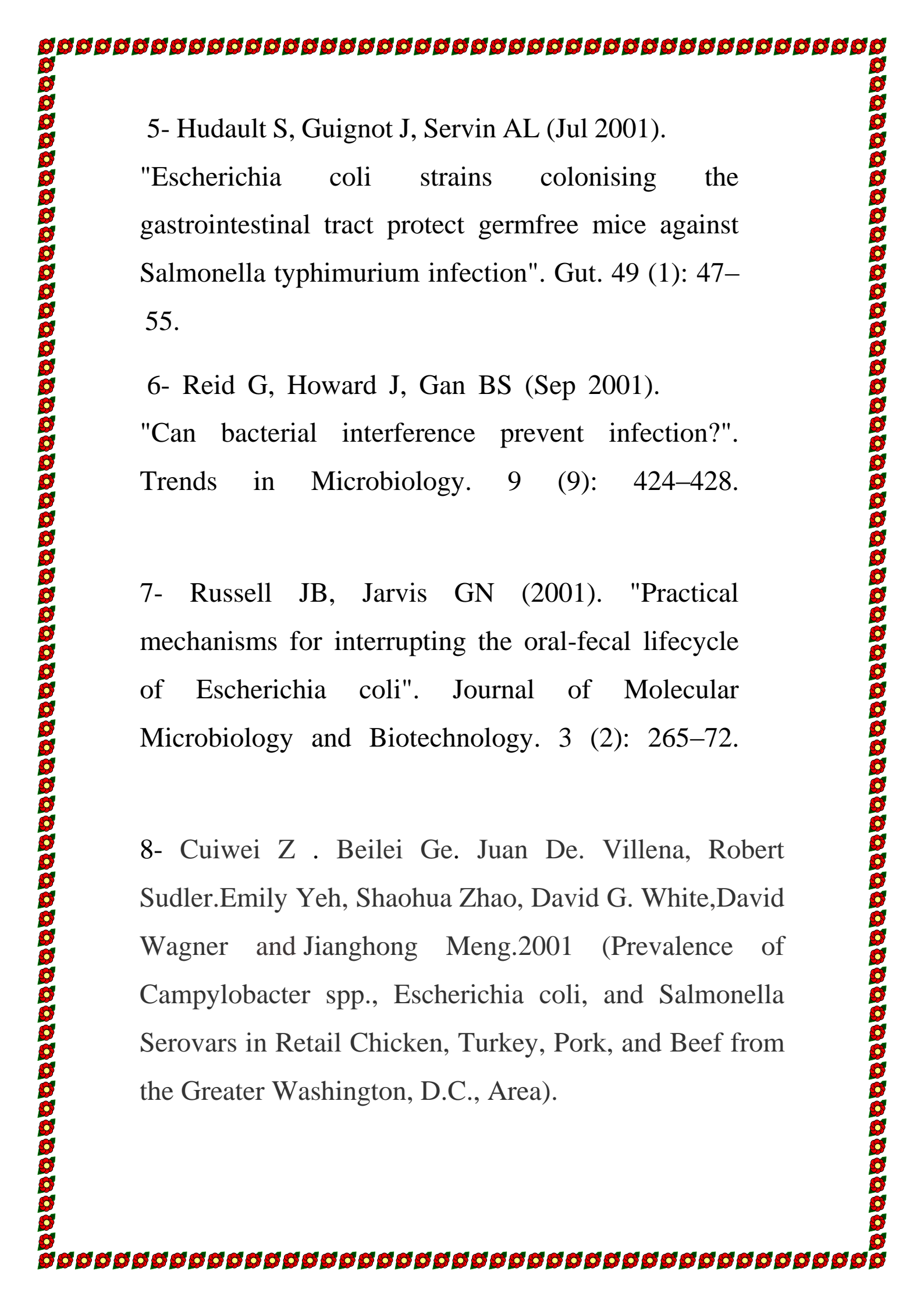
The result of (12) recorded lower rate than present study which recorded 2 of (6 00) of beef cattle (0.33 %) in W ashington State , also (13) recorded lower rate of present study which "*E.coli*" was isolated from 6 (3.7 %) of 164 beef meat sample.

Recommendations

- 1- Handling meat samples safely for housewives.
- 2- Conduct molecular tests to detect the presence of virulence factors in these isolates.
- 3- Perform drug sensitivity tests for isolates and observe antibiotic resistance of bacteria.

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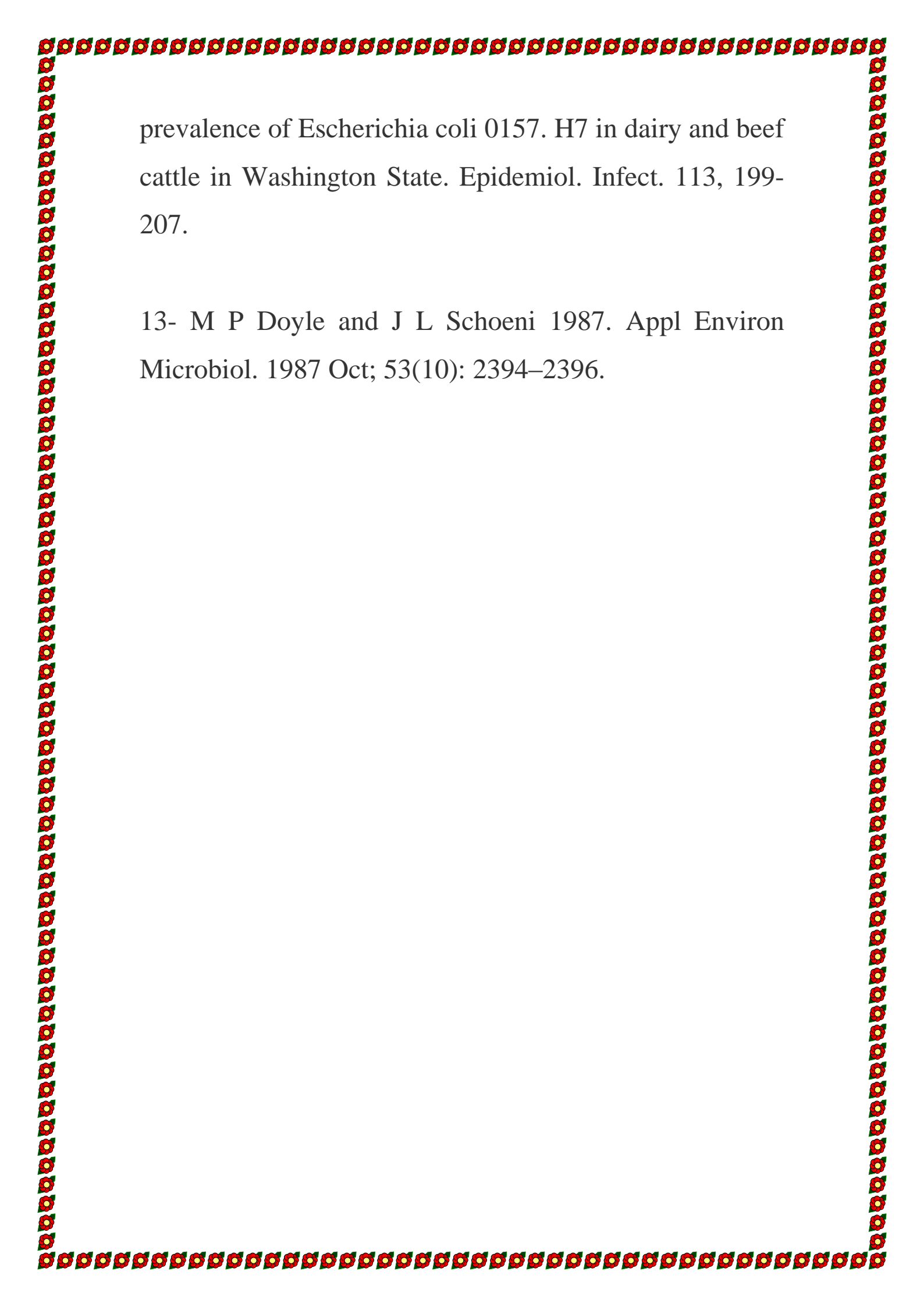
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