The Effect of Garlic (*Allium Sativum*) Extract on The Growth of Bacteria Isolated From Uterus Dairy Cattle

M. Poeloengan [1] and I. Komala [2) 3)]
[1)] Indonesian Research Center for Veterinary Science, Bogor West Java Indonesia
[2)] Faculty of Animal Science Bogor Agricultural University, , West Java Indonesia.
email: iyepk@yahoo.com
[3)] Institute of Bioscience, Universiti Putera Malaysia

ABSTRACT

Many dairy farms suffered from tremendous economic losses due to repeat breeding. Laboratory investigation demonstrated that several bacteria. i. e., *Staphylococcus aureus*, *Streptococcus pyogenes*, *Pseudomonas* sp., and *Klebsiella* sp. were responsible for this syndrome. This research was to promote the uses of traditional medicinal herb as an alternative way to cure repeat breeding. Garlic was as well known as a herb containing antibacterial effects. The objective of this study was to asses the effects of garlic extracts on the growth of bacteria isolate which were collected from repeat breeding infected of local milking cows. A factorial design 3 x 4 was employed for this investigation. Four isolates of bacteria from repeat breeding, i.e., *Staphylococcus aureus*, *Streptococcus pyogenes, Pseudomonas* sp., and *Klebsiella* sp. were used in *in-vitro* test. Fifteen micro liters each of three concentrations of garlic extract, i.e., 75, 50, and 25% were dropped in sterile paper disks.The disks were than laid on the MEU blood media previously inoculated with each of the four isolates and were incubated overnight at 37 degree C. The finding results showed that that the highest concentration of garlic extract inhibited bacterial growth In further results showed that the garlic extract significantly inhibited the growth of *Staphylococcus aureus, Streptococcus pyogenes, Pseudomonas* sp., and *Klebsiella* sp. [p<.0001]. As conclusion, the Garlic (*Allium sativum*) extracts had bactericide effects, especially on *Staphylococcus aureus*, and *Streptococcus pyogenes*; the is positive correlation between the high concentration of garlic extract with inhibition zones; *Staphylococcus aureus* shown the most affected by the Garlic extracts at all concentrations and Garlic extract was able to use effectively for controlling the bacteria growth.

Key words: Garlic, Staphylococcus aureus, Streptococcus pyogenes, Pseudomonas sp., Klebsiella sp.

INTRODUCTION

Repeat breeder syndrome is a major source of economic disadvantage in dairy herds. Cows that fail to conceive after a defined number of inseminations with fertile semen (generally 3 or more) are classified as repeat breeder (Levine, 1999). Around 10%-15% of cows fail to conceive on time can be classified as repeat breeder (Hartigan *et al.*, 1972).

Bacterial infection is the most important among the various causes of the sub fertility (Dholakia *et al*., 1987). Such a condition may cause cervicitis or endometritis of various degrees, which in turn may lead to embryonic death and repeat breeding problems (Elliot *et al*., 1968). These infections effect fertility by altering the uterine environment resulting in impairment of sperm transport, sperm death and hostile environment to the subsequent development and maintenance of the conceptualizing to their death. Early embryonic death (<42 days) is a major factor in reproduction failure, which in turn causes economic loss to the dairy industries (Rahman *et al*., 1996).

The Garlic has important efficacy as antibacterial activity (Ali and Saoji, 2002). The effects of an aqueous extract of garlic and its active constituent allicin were tested against 40 drug resistant isolates of the strains of *Shigella dysenteries* type 1 and Shigella flexneri, enterotoxigenic *Escherichia coli* and *Vibrio cholerae*. The aqueous garlic extract and allicin had potential activities against all of the tested bacteria, while from the five standards of antibiotics only gentamcyn was active. Both allicin and the aqueous extract had a broad spectrum as antibacterial agents. Allicin appeared to have the strongest activity compared with that of the extract and the standard antibiotics (Ahsan, *et al*., 1996).