Six healthy adult male albino Wistar rats (180±5g) were used in this study. The rats were anaesthetized using light ether anaesthesia. The skin of the scrotum was cut to open tunica vaginalis. Small incision was then made to make a rent so that epididymis can come out. After pulling out the testes, contents of cauda epididymis were removed and flushed in 1 ml of previously warmed buffer saline at 37°C to make suspension of spermatozoa. The testes were returned back and the wound was sutured properly. At least 80% initial normal sperm motility and 2.5x10^7/cc sperm count was considered for the selection of samples. Wet drop technique was applied to study the motility of spermatozoa.

10 ml of sperm suspension and 10 ml of plant extract (1:1) at different concentration (1, 2.5, 5 and 10%) was placed on a glass slide. Then it was mixed uniformly and examined under binocular microscope (Olympus, Japan) at magnification 10x15x. The motility of sperm was observed at various time intervals up to 150 seconds. In control, 10 ml of buffer saline was used instead of plant extract. All values were reported as mean±SEM. The results were subjected to one way analysis of variance (ANOVA).

### Table 1. Effect of aqueous extract of Aegle marmelos leaves on the motility of rat spermatozoa: in vitro study.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Percent motility of spermatozoa in different duration (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Control</td>
<td>82.3±1.59</td>
</tr>
<tr>
<td><em>A. marmelos</em> 1%</td>
<td>82.3±1.59</td>
</tr>
<tr>
<td><em>A. marmelos</em> 2.5%</td>
<td>82.3±1.59</td>
</tr>
<tr>
<td><em>A. marmelos</em> 5%</td>
<td>82.3±1.59</td>
</tr>
<tr>
<td><em>A. marmelos</em> 10%</td>
<td>82.3±1.59</td>
</tr>
<tr>
<td>P</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Values are mean±SEM; n=6; a, b, c, d-indicate P<0.05 when compared to control, 1%, 2.5% and 5% extract in the same column respectively.

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**EFFECT OF AEGLE MARMELOS LEAF ON RAT SPERM MOTILITY: AN IN VITRO STUDY**

*Aegle marmelos* Corr. (Beng. Bael), is a popular plant and cosmopolitan in distribution. *A. marmelos* have rich medicinal properties. Insulin-like action of *A. marmelos* leaf on hyperglycemia and their mechanism of action has been reported. In Ayurveda, leaves of this plant are claimed to be useful in spermatorrhoea. Earlier studies in our laboratory have been shown that ethanolic extract of *A. marmelos* leaf possess anti-spermatogenic activity in rats. The present investigation has been carried out to find the activity of *A. marmelos* leaf on rat sperm motility through *in vitro* study.

Fresh leaves of *A. marmelos* collected from local market were cleaned, dried under shade at room temperature and ground to make it particles. Then it was placed in distilled water and filtered. The filtrate was lyophilized to obtain powder. Different dilutions (1, 2.5, 5 and 10%) were prepared in buffer saline (pH 7.4) before the experiment.
followed by multiple 't' test. P values <0.05 was considered to be statistically significant.

Initial motility of control sperm was 82.3%, which remained almost static (80.5%) up to 150 seconds as observed in the present study (Table 1). But, sperm motility appears to decrease with the time and significantly so with the increasing concentration of \textit{A. marmelos}. Dose dependent response of \textit{A. marmelos} aqueous extract was noted on \textit{in vitro} motility of sperm in rat. In this study, sperm motility was observed to be practically nil at 10% concentration of \textit{A. marmelos} extract in 30 sec. While, 5% of the same showed nil in 90 sec, 2.5% in 120 sec, and 1% in 150 sec (Table 1).

Use of chemical contraceptives by women is effective but has some limitations owing to some undesired effects. Since last decade, efforts are being made to work on other areas such as spermicidal agents\textsuperscript{7,8}. Herbal preparations have also been tested for spermicidal action in number of countries. In our earlier studies it has been observed that alcoholic extract of \textit{A. marmelos} leaf resist the process of spermatogenesis and decrease sperm motility in rats\textsuperscript{3}. In the present study, our findings clearly indicate that increases in concentration of water extract of \textit{A. marmelos} decrease the complete immobility time of sperms accordingly (Table1). The sperm immobilisation action of \textit{A. marmelos} can be correlated with the findings of a recent study which reported a complete inhibition of sperm motility by neem extract\textsuperscript{4}. The findings of the present study clearly indicate that water extract of leaf of \textit{A. marmelos} possesses antimotility action on spermatozoa in rats.

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