The present study which was proposed to investigate traditionally important medicinal plants used for antihistaminic treatments by the tribal’s of Ratlam district which lies in North Western region of Madhya Pradesh includes the following chapters in thesis:

1. Introduction
2. Review of Literature
3. Materials and Methods
4. Observations and Results
5. Discussion
6. Summary

And recommendation along with References in standard format based on Harvard referencing style and list of publications.

The thesis can be summarized as under:

- The survey of Ratlam district was initiated in 2012 having fortnight visit to the remote areas of Ratlam district of Madhya Pradesh. Interviews were taken with the tribal population and spot identification
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of the folklore medicinal plants was collected and photography of certain plants in situ was taken.

- Based on folklore information, several plants belonging different families have been spotted and identified which were made scientifically validated. Identification and authentication of selected two plants was carried out from the department of botany Govt. P.G. College Mhow.

- *Euphorbia hirta* is a terrestrial, annual, erect herb, up to 60 cm tall. Taproot white or brown. Stem rounded, solid, hairy, with abundant milksap. Stipules present. Leaves simple, not lobed or divided, opposite, sessile or stalked, elliptic, less than 2 cm long/wide, hairy on both sides, denser pilosity along the veins in the lower face, more scattered on the upper side; leaf base asymmetric, margin finely dentate, apex acute, base acute, 3-veined not to the top. Flowers unisexual, solitary or grouped together in an axillary cyme, stalked, petals absent. Fruit a capsule opening with 3 valves.

- *Achyranthes aspera* is a glabrous climbing shrub found throughout India, typically growing in deciduous and dry forests. The leaves are heart shaped. The succulent bark is creamy white to grey in color, with deep clefts spotted with lenticels.

- Phytochemistry which is a tedious job to a biologists to be conducted but in the present study all round efforts have been made to isolate the
biological active constituents of two selected plants using various methods of phytochemistry are so called natural products chemistry. These methods include soxhlation and cold percolation for extraction, column and thin layer chromatography with different systems of solvents as mentioned in table during observations. The percentage yield of whole plant of *Euphorbia hirta* extract after soxhlation were obtained 8.57% in ethanol and 10.75% in water and the percentage yield of *Achyrantes aspera* extract were obtained 4.24% in ethanol and 5.72% in distilled water. The percentage yield of whole plant of *Euphorbia hirta* extract were obtained 5.00% in ethanol and 9.90% in water and the percentage yield of *Achyrantes aspera* extract were obtained 3.40% in ethanol and 5.96% in distilled water. It indicates that the percentage yield of both the plants were obtained maximum in distilled water by solution as well as by cold percolation methods.

- During the present study, the column chromatography of the selected plant materials was done using various solvent systems. For the *Euphorbia hirta*, chloroform: methanol and chloroform: methanol: water in five different proportions was used. The different fractions obtained and the code assigned to each fraction along with the color characteristics. The fraction showed maximum yield that is “C” was further used for spectral analysis which gave 50 mg yellow colored needle of triterpenoidsaponin. Similarly, column chromatography of
Achyranthes aspera crude extract were also performed using chloroform: methanol (15:09) and chloroform, methanol and water in three proportions which gave five different fractions. Fraction E was further purified by TLC and the fraction gave yield of 50 mg which was further structurally elucidated for flavonoid and glucoside. During TLC the same solvent systems were used and in case of Euphorbia hirta 2 spots were seen when the Chloroform: Methanol (12:01) solvent systems were used and the RF value of spot 1 was 0.07 and of spot 2 was 0.95 but when the Chloroform: Methanol: Water (10:02:01) solvent system was used, three spots were seen. Their Rf value were given in Table. In case of TLC of Achyranthes aspera the Chloroform: methanol: water (12:06:01) solvent system was also used with different ratio and three spots were found.

- Column purified fraction were spotted on silica gel coated aluminum sheets (Merck, Germany) and the spots were detected in UV light as well as in iodine chamber. The Rf value of the purified compound of both the plants were compared with quercetin an authentic marker obtained from Phyto Lab., Germany.

- Preliminary phytochemical screening was carried out as per Harborne (1984) and flavonoids, alkaloids, saponins, terpenoids were detected in samples.
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- Spectral analysis of purified compound was carried out from the SAIF, CDRI, Lucknow for IR, UV, HNMR, CNMR and mass spectrum.

- In the present study, anti-histaminic or mast cell stabilizing activity was evaluated using active fractions of *Euphorbia hirta* and *Achyranthes aspera* in anaphylactic Wistar albino rats.

- Antihistaminic activities of both the plant were conducted using mesenteric mast cells of Wistar albino rats, so for this CPCSEA and IAEC guidelines were strictly followed.

- Mast cells stabilizing activities were also noticed with the doses of 50 and 100mg/kg body weight of both the extracts. Where, *Euphorbia hirta* thanolic extract showed 81.10±2% intact mast cells which were much better than *Achyranthes aspera* where it was 72.30±2%. However, the results also showed that synergistic pronounced effect against mast cells stabilizing activity which was calculated to be 83.20±2%. All the results were compared with the standard drug Predisolone (10 mg/kg body weight) treated groups where the intact mast cells was found 84.50±2% which was found quite similar with the result of both extracts.

- All the results were found statistically significant at P < 0.05% significant level.
The present ethnobotanical study on medicinal plants of Ratlam district of Madhya Pradesh revealed that still there is the lot of scope in this field, where, unexplored flora could be searched out & certain traditionally used plants are not still documented which may be done in precise scientific way.