SUMMARY AND CONCLUSIONS

- Leaf and stem of the *Ventilago maderspatana* leaf, stem and stem bark of the *Ziziphus xylopyrus* have been evaluated for their quality by performing ash values and extractive values. It was found that both the plants are of good quality as observed from their ash values and extractive values.

- Anatomical studies and powder microscopy of the leaf, stem of *Ventilago maderspatana*, leaf, stem, and stem bark of *Ziziphus xylopyrus* were performed to identify special microscopical characters. These may be helpful for further confirmation of selected species and in future these characters may be compared with the new batch of same plant materials.

- Aqueous and ethanolic extract were prepared from the leaf, stem of *Ventilago maderspatana* and leaf, stem, stem bark of *Ziziphus xylopyrus*. Further different fractions were prepared using successive solvent extraction technique.

- Preliminary phytochemical analysis was carried out for all extracts. Both plants were found to contain different phytoconstituents such as alkaloids, glycosides, steriods and sterols, saponins, flavonoids, carbohydrates, and tri- terpenoids and showed the absence of amino acids, proteins and acidic compounds.

- Total phenol and flavonoid content were evaluated for all the extracts of both plants. Both plants showed good amount of phenol and flavonoids.

- TLC for fractions were carried out. The chloroform fraction of the ethanolic extract of *Z. xylopyrus* stem bark showed the presence of needle shaped crystals.

- Chloroform fraction was subjected to further analysis by TLC and HPLC technique. The IR, Mass, NMR spectroscopies were carried out for confirmation of structure.

- The isolated compound was found to be Lupeol which is triterpenoid in nature.

- *In vitro* antioxidant studies were carried out by standard methods such as lipid per oxidation assay, and the total antioxidant capacity by phosphomolybdenum method. Hydroxyl Radical Scavenging Activity by p-Nitroso dimethyl aniline (P-NDA) method, Nitric oxide radical inhibition activity and ABTS radical Scavenging method, were also carried out.
Ethanolic extract of leaves of both plants showed the potent antioxidant activity in comparison with prepared extracts.

Acute toxicity studies were carried out and the extracts were found to be safe till 2000 mg/kg b.w. in female balb/c mice. 1/10th and 1/20th dose were selected as per OECD (423).

In vivo antiasthmatic studies were carried out in ova albumin induced asthmatic animal model. Estimation in bronchoalvelolar lavage fluid (BALF) for WBC, differential count, nitrite and nitrate were carried out. All the elevated levels are significantly decreased by ethanolic extract of stem bark of Z. xylopyrus (ZIBE) at 200 mg/kg dose when compared with all the other extracts.

Estimation of MDA, TLP and MPO in lung tissue result revealed that there is a significant restoration took place at the dose of 200 mg/kg of the ethanolic extract of stem bark of Z. xylopyrus (ZIBE) when compared with all the other extracts.

In histopathological study of lung tissue; it was observed that restoration of bronchial metaplastic goblets to normal active goblet cells.

Thus the present study supports the traditional use of V. maderspatana and Z. xylopyrus, for the treatment of asthma.

This research work may lead to the identification of new effective, natural chemical entity which can be further utilized for treatment of asthma.

Lupeol is known compound and it has antiasthmatic activity.

It was determined and isolated from the stem bark of Z. xylopyrus for the first time

Triterpenoids present in stem of V. maderspatana and in stembark of Z. xylopyrus contribute to this activity.