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HISTAMINE A BIOGENIC AMINE FROM *PARTHENIUM HYSTEROPHORUS* LINN.

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Plant parts of *Parthenium hysterophorus* were subjected to extraction of histamine. The maximum content of histamine was found in aerial parts (5 85 mg/gdw).

Keywords : *Parthenium hysterophorus* L.; Histamine; Biogenic amine.

Histamine, a biogenic amine derived from histidine stimulate the flow of gastric juices into the stomach and is involved in various allergic responses (Noller, 1965). Werle and Raub (1948) demonstrated the presence and importance of histamine in plants. *Parthenium hysterophorus* an allergenic weed, its control and utility have been reviewed by many workers (Khosla and Sobti 1979; Towers and Mitchell, 1983 Sharma and Kaur, 1989). In present study the plant has been work out for presence of histamine.

Ths plant parts (aerial parts and roots) were collected, dried, powdered, hydrolysed with 35% (V/V) orthophosphoric acid for 1 h on water bath, cooled and filtered. The filtrate was kept for distillation to remove acid, pH was brought to 7 by adding sodium bicarbanate solution (Saxena *et al.*, 1965) and again filtered. The filtrate was concentrated and dissolved in hot chloroform on a water bath and soluble fraction was kept at low temperature for crystallization. Crystals thus obtained were weighed and subjected to chromatography, mp, mmp, and IR spectral studies.

Thin layer chromatography was performed for further identification using thin glass plates coated with silica gel G (250 um thickness). Compound was dissolved in 50% ethanol and applied on TLC plates with standard (Histamine acid phosphate). The plates were developed in solvent system (V/V) consisting of 95% ethanol and 25% ammonium hydroxide (4:1, Randerth, 1965). The developed chromatograms were sprayed with Ninhydrin in acetone (250 mg%) and heated at 100°C for 10–15 min in an oven A single pink coloured spot (Rf, 0.6) was developed on chromatograms which was comparable to that of standard histamine. Preparative thin layer chro-

matography (PTLC) was performed on glass plates coated with silica gel G (500 um thickness) for estimation of histamine quantitatively. A single fluorescent spot corressonding to the reference compound was resolved under UV lamp and scrapped from about 300 developed and unsprayed plates. Silica gel was eluted in ethanol, concentrated and subjected to crystallization as per method described before. The crystals were weighed and quantified. The presence of histamine was further confirmed by mp which corresponded with that of standard reference compounds (132°C) and mmp (129–132°C) was undepressed. The characteristic IR spectral peaks of the isolated compound were super imposable with that of the reference compound.

The maximum amount (5.85 mg/gdw) of histamine was in aerial parts as compared to that of roots (3.5 mg/gdw). Grrensmith and Turner (1971) reported higher content (0.7%) in leaves of *Gossypium* species. Kamal and Khanna (1979) reported 0.39% in *Helianthus annuus* seedlings· Funayama and Hiroshi (1979) reported 0.13% to 0.16% histamine from roots of *Phytolacca americana*. In the present investigation, among plant parts, higher content was in aerial parts as compared to roots, thus supporting ths results of earlier workers.

It appears that the aerial parts undergoing rapid growth are metabolically more active, than roots wherein the cells are of conducting and storage nature. Moreover, the conversion of histidine into histamine on decarboxylation (due to change in enzymatic levels may be responsible for higher contents of histamine in aerial parts which finds support from metabolic pathways of imidazole group (Noller, 1965).

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