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A Comprehensive Review Article On “Amaranthus Activity Of Tablet On Antidiuretic Activity”

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Abstract :

The Amaranthus is a variety of bioactive compounds found in many more species of, and in India this herb can be used for the uses of all parts of plant. The Amaranthus has been a plethora of herb as a bioactive compounds of rich source of like essential oils, sesquiterpenes, diterpenes, triterpenes, phenolic acids, flavonoids, etc. In the modern uses of Amaranthus, spp. have been established scientifically and were shown due to the presence of different phytochemicals. Study physico- and phytochemical evaluation of the roots of Amaranthus spinosus was carried out, to

determine its macro- and microscopical characters, and also some of its quantitative standards.. Amaranthus spinosus Linn. (Family Amaranthaceae) commonly known as ‘spiny amaranth’ or ‘pig weed’, is a plant known for its medicinal properties since long. In past in the traditional system of medicine (Ayurveda, Unani, Siddha, Homeopathy, Naturopathy, Folk medicine etc.) various parts of the plant were used for treatment of different diseases. Different parts of the plants showed analgesic, antimicrobial, antioxidant, antidiabetic, antitumor, spermatogenic, antifertility, anti

inflammatory, hepato-protective, spasmolytic, bronchodilator, antimalarial properties. In spite of all these studied there are many more works to be done in near future

Keywords:- Amaranthus, Taxonomical classification, Antidiuretic activity, History, Background

Introduction and background :

Amaranthus spinosus Linn. (Amaranthaceae)[1] is an annual herb found throughout India and also in many other countries. In many centuries and even today plants have provided mankind with remedies for many diseases. In India there are 47000 plant species of which 15000 are reported to have medicinal properties. These plants play a major role in primary healthcare as therapeutic remedies. In Indian taxonomic classification *A. spinosus* L falls as under:



Fig no. -01

Kingdom – Plantae,

Subkingdom - Viridiplantae,

Phylum - Magnoliophyta,

Subphylum - Euphyllophytina,

Division - Magnoliophyta,

Class - Magnoliopsida,

Subclass - Caryophyllidae,

Order - Caryophyllales,

Suborder – Chenopodiineae,

Family - Amaranthaceae,

Genus – *Amaranthus*,

Species - *spinosus*.

Active oxygen species (ROS) play an important role in the progression of a great number of pathological diseases such as Alzheimer disease, atherosclerosis, Parkinson's disease, inflammation, cancer, hypertension and heart attack (Alho and Leinonen, 1999; Ozygen et al., 2006; Halliwell, 2007). ROS are simply activated form of oxygen (Dieudonne et al., 2010) with the presence of an unpaired electron (Gramza et al., 2005). The presence of an unpaired electron makes them unstable and highly reactive (Saiqa et al., 2014) and can abstract electron from DNA, polyunsaturated fatty acids, and proteins to become stable (Sahreen et al., 2010). The discovery of *amaranthus spinosus* also known as spiny amaranthus, is difficult to pinpoint to a single unit or person. This is because it is a plant that has been used

& recognized by various culture throughout history .ancient use of amaranthus spinous including amaranthus must be used in food ,medicine use and other purpose for centuries. There is evidence of their Is evidence of there is evidence of their use in ancient mesoamerican civilization , as well as in traditional medicine system in variuos parts of the world the formal taxonomic description of amaranthus spinous is attributed to carl linnaeus , who published it in landmark work “species plantarum” in 1753.

Background Of Amaranhtus Linn:

Amaranthus spinosus,commonly known as spiny amaranth ,is an annual or perinnial herb native to the the tropical americas . it is a member of amaranthus family , which also include other amaranth species and beets . this plant has a long history of use in traditional medicine in various part of the world , including India , Africa,and south america . it is often found in waste places , roadsides , and field , and it is sometimes considered a weed due to its rapid growth and ability to spread easily its weedy reputation amaranthus spinous has been studies for its potential medicinal properties . some research suggest that it may be have anti-inflammatory ,anti- oxidantand anti diabetic effect . many research needed to fully understand its potential benefits and risk.

Antidiuretic activity in amaranthus catharanthus:

amaranthus spinouses commanly known as spiny amaranthus or thorny pigweed , is a plant that has been traditionally used in variousmedicinal system . while it is not typically considered a diuretic property. Diuretic activity some studies have shown that extract of amaranthus spinouses may increase urine output in animal.

Antiduretic hormone (ADH).ADH is a hormone that regulates

Method of amaranthus tablet making -

❖ Direct compression method -

Procedure-

- The amaranthus powder or extract is mixed with excipient such as binder , filler, and lubricants.



- The powder mixture is then directly compressed into tablet .

❖ **ADVANTAGES** - simple and cost effective ,minimal processing .

❖ **Common excipient**-lactose,microcrystalline cellulose ,starch ,magnesium stearate .

❖ Extrusion -spheronization method

Procedure :

- Amaranthus drug are mixed with binder and other excipient to form a paste .



- The paste is passed through an extruder to form cylindrical pellets.



- These pellets are then spheronized rounded ,dried ,and compressed into tablets .

- ❖ **ADVANTAGES** -protect against environmental factors , enhances aesthetic and control release

- ✓ **Common coating material** :hydroxypropyl methylcellulose ,ethylcellulose ,sugar

Evaluation test of amaranthus tablet :

- ❖ **Hardness** -

The amaranthus herbal tablets are evaluated by the test of hardness using a Monsanto hardness tester and Pfizer type of hardness test apparatus . typical hardness value for tablets range from 4-10 kg depending on the type of tablet.

- ❖ **Dissolution** -

The dissolution rate of amaranthus tablets or any type of pharmaceutical tablets are generally conducted to how to release their chemical constituents in the fluid of the body are generally measured on it.

Steps of dissolution test of amaranthus tablet -

1. Apparatus selection - such as paddle type of apparatus is used for dissolution testing apparatus .they can be rotate 50 to 75 rpm .
2. Preparation of medium - dissolution of solution should be based on their pH. The volume of dissolution is 900 ml .
3. Test condition -the test is generally conducted at temp at 37⁰c-0.5⁰c. and check the dissolution rate

- ❖ **Dissintegration test** -dissintegration will be laboratory apparatus they can be tested to solid dosage form of tablet this test is important in pharmaceutical industries .

Steps -

Bath-contain water or solution at a specific temp.



Test basket-they can be hold to dosage form .



Paddle or stirring -the basket are moved up or down to disintegrate the tablet .



Temperature control



Timer

Conclusion -The amaranthus tablet demonstrate promising antidiuretic activity , which could be attributed to its bioactive compound . the evidence suggest that amaranthus may help in reducing urine output , likely due to its potential effect on regulating water and electrolyte balance . further reaserch on need to fully understand its mechanism and confirmation of its clinical effectiveness

Result -

Amaranthus spinous also known as spiny amaranthus ,is a plant species that has been studies for its verious medicinal property including potential effect of antidiuretic activity . while specific studies on its antidiuretic effect inhibition of urin production are not extensively documented the amaranthus have shown antidiuretic activity ,which promotes the urine less than diuretic .

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