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Research Article

## Efficacy Of Poaceae (Gramineae) Family In Management Of Haemorrhagic Disorder.

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### Abstract –

There are many members of the plant kingdom in this world that have some unique medicinal properties. Poaceae family, a perennial weedy grass, has a prime position in ethno-medicinal practices and traditional systems of medicine. The plant is rich in various metabolites such as proteins, carbohydrates, a few vitamins, minerals, flavonoids,  $\beta$ -sitosterol, alkaloids, tri-terpenoids, glycosides, steroids, saponins, tannins, resins, phytosterols, reducing sugar, volatile oils and fixed oils. The plant shows different biological activities such as antimicrobial, antiviral, wound healing, central nervous, cardiovascular, antidiabetic, gastrointestinal, antioxidant, immunological, anti allergic, anti inflammatory, antipyretic, analgesic, anticancer, antimicrobial, dysentery, epilepsy, headache, hemorrhage, hypertension, hysteria, measles, rubella, snakebite, sores, stones, tumors, urogenital disorders and warts, anti parasitic, diuretic, protective properties. The plant is also used to treat various maladies such as cancer, hemorrhagic disorder, anasarca, convulsions, cough, cramps, stiffness, diarrhea, dropsy. This review attempts to gather updated information about pharmacological characteristics, empirical uses, and chemical constituents, summary of different pharmacognostic and pharmacological activities of *Cynodon dactylon*, *Aspidosperma aspidosperma*, *Avena sativa* (Oat, Jai), *Bambusa arundinaceae*, *Bambusa tulda* (Bamboo), *Cymbopogon citratus* (Lemon grass), *Cymbopogon martinii* (Ginger grass), *Cymbopogon martinii* (Ginger grass), *Cynodon dactylon* (Doob grass), *Dendrocalamus strictus* (Solid bamboo), *Oryza sativa* (Rice), *Saccharum officinalis* (Sugarcane), *Triticum aestivum* (Wheat), *Vetivera zizanoides* (Khus-khus)-*Anatherum muricatum*, *Zea mays* (Maize).

**Keywords** -Poaceae, haemorrhagic disorder, haemophilia, clotting factors, pharmacognostic, anasarca, menorrhagia, metrorrhagia, empirical, glycosides, saponins, tannins, resins, phytosterols, flavonoids, stiffness, convulsion, pharmacological character, epistaxis and haematuria.

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### Introduction

It is useful in treating bleeding conditions such as bloody diarrhea, epistaxis, menorrhagia and bleeding piles. Stomach disorders such as diarrhea, cramps and

flatulence can also be cured using this remedy. It is also useful in treating urinary disorders. Based on the homoeopathic formulation, it is safe to use.

### **Important medicinal Plants of Poaceae family.**

Used in Homoeopathy, Ayurveda, Unani and other branches of medical sciences. It used in form of mother tincture, potentized or potency, its alkaloids and different parts in form of oral, external application, inhalation and in combination form.

The **Poaceae** family is the "true" grasses. These are a large family of monocot flowering plants. There are about 12,000 species and 780 genera. These are one of most ecologically and economically useful of all plant families.

About 22% grassland of the earth covered by vegetation. Poaceae also live in many other habitats, including wetlands, forests, and tundra. Bamboos are part of this huge plant family.

Domesticated poaceous cereal crops (maize (corn), wheat, millets, and rice, Jaie) are eaten all over the world. The Poaceae family members are the most economically important plant family in present era. They are used for forage, building materials (bamboo, thatch) and fuel (ethanol), as well as food.

Some grasses are most useful plant life-forms. They became widespread towards the end of the 145 million to 66 million years age. Fossilized dinosaur dung has been found with phytoliths of grasses which are related to rice and bamboo. Grasses have adapted to conditions in lush rain forests, dry deserts, cold mountains habitats. They are at present the most widespread plant variety. Grass is a valuable source of food and energy for animal as well as humans.

### **Economic Importance**

The staple food grains (wheat, rice, jau, jowar, oat and bajra) for majority of the human population are obtained from this family. Fodder is provided by many grasses. Gur and sugar from sugarcane. We get medicine from *Cymbopogon flexuosus*.

**Geographical distribution-** Overall, plants of 582 species belonging to 143 genera of Poaceae were found in the Western Himalayan region. In terms of number, the region was found to share 44.45% of the total species of grasses found in India and 5.06% of those distributed globally.

**Classification - Bentham & Hooker** have placed the family Poaceae, along with the Cyperaceae in the series Glumaceae. **Engler & Prantl** placed both the families in their order Glumiflorae, while **Cronquist** placed them in his order Cyperales.

### **Physiological function and metabolic effects of Poaceae family.**

The Poaceae, or true grass family, is very rich in C4 origins and C4 species. The subfamilies have all been unambiguously determined, and the family splits into two clades: PACMAD, containing Panicoideae, Arundinoideae, Chloridoideae, Micrairoideae, Aristidoideae, and Danthonioideae; and BEP, containing Bambusoideae, Ehrhartoideae, and Pooideae. By the current estimate, there are 22–24 C4 origins within the Poaceae, and they all occur in the PACMAD clade where they cluster more strongly in some lineages than others (see below). This makes the Poaceae ideal for

comparisons, both between the BEP and PACMAD clades, and between C3 and C4 sister species or intermediates. Further, the presence of high-resolution phylogenetic data, six fully sequenced genomes, other sequence data, and primary crop species lead to much C4 research focusing on the Poaceae.

Classification given by Bentham and Hooker is NATURAL SYSTEM. Monocots were placed after dicots; closely related families were separated; gymnosperms were placed between dicots and monocots.

Poaceae (Gramineae) : Grass Family

- Large and ubiquitous family of monocotyledonous flowering plants known as grasses.
- Name "Poaceae" was given by John Hendley in 1895, on the basis of tribe Poeae.
- Term is derived from Greek word meaning fodder.
- Genus *Poa* introduced by Carl Linnaeus

### **Scientific classification:**

- Kingdom : Plantae.
- Phylum : Angiosperms.
- Class : Monocotyledonae.
- Order : Poales.
- Family : Poaceae 12- subfamilies.
- Genera : 771.
- Species : 12,000 Morphological characters.

**Habit:** Annual (*Oryza*) or perennial (*Saccharum*) herbs; rarely tree (bamboos). **Roots:** Fibrous, adventitious.

**Stem:** Herbaceous; cylindrical; jointed, hollow at internodes. Sometimes, forms rhizome or runner. Stem of grasses is called a culm.

**Leaves:** Sessile with long sheathing base; alternate; simple; ligulate; parallel venation. **Inflorescence:** Spike of spikelets or panicles of spikelets. Each spikelet is composed of 2-5 flowers. It is enclosed by a pair of bracts called glumes.

**Spike of spikelets:** The spikelets form dense clusters in sessile manner on main axis as in wheat.

**Panicles of spikelets:** The spikelets are arranged on a branched axis-panicle as in oat.

### **Reproductive characters**

**Flower:** Pedicellate; bracteate, two bracts palea and lemma enclose flower or floret; lemma contain bristle like awns zygomorphic; Bisexual (*Oryza*) or rarely unisexual (*Zea mays*); hypogynous. **Perianth:** Represented by two or three scale like lodicules.

**Androecium:** 3 stamens in a whorl, sometimes 1,2 or 6; polyandrous; anther versatile.

**Gynoecium:** Monocarpellary with superior unilocular ovary containing a single anatropous ovule; stigma usually 2; feathery; basal placentation.

**Fruits:** Mostly one-seeded Caryopsis (fruit wall is completely fused with the seed coat)

**Seed:** Endospermic Pollination: By air **Floral Formula:** Br. % ♀P2 (lodicules) A3 G1 Poaceae is by far the most economically important family of angiosperms.

Avena (oats), Oryza (rice). Triticum (wheat). Saccharum (sugarcane). Zea (corn). Bambusa (bamboo).

## Families

**Poaceae:** 700 genera

|                                                          |                                   |
|----------------------------------------------------------|-----------------------------------|
| 1. Askidiosperma aspidosperma.                           | Askidiosperma <b>aspidosperma</b> |
| 2. Avena sativa (Oat, Jai)                               | <b>Avena sativa</b>               |
| 3. Bambusa arundinaceae. Or Bambusa tulda (Bamboo)       | Alen laboratory                   |
| 4. Cymbopogon citratus (Lemon grass)                     | Citrus limonum                    |
| 5. Cymbopogon martinii (Ginger grass)                    | <b>Zingiber</b> mother tincture   |
| 6. Cynodon dactylon (Doob grass)                         | <b>Cynodon dactylon</b>           |
| 7. Dendrocalamus strictus (Solid bamboo)                 | Narcissus Pseudonarcissus         |
| 8. Oryza sativa (Rice)                                   | Oryza sativa.                     |
| 9. Saccharum officinalis (Sugarcane)                     | <b>Saccharum officinalis</b>      |
| 10. Triticum aestivum (Wheat)                            | <b>Triticum repens</b>            |
| 11. Vetivera zizanioides (Khus-khus)-anatherum muricatum | <b>anatherum muricatum</b>        |
| 12. Zea mays (Maize)                                     | <b>Stigmata madis zea.</b>        |

**Hemorrhagic disorder-** Bleeding disorders are a group of conditions in which there is a problem with the body's blood clotting process. These disorders can lead to heavy and prolonged bleeding after an injury or surgery. Bleeding can also begin on its own and may be difficult to stop.

**Three most common blood disorders-** Common blood disorders include anemia, bleeding disorders such as hemophilia, blood clots, and blood cancer such as leukemia, lymphoma, and myeloma. Talking to your doctor is the first step to take if you believe you may have a blood condition.

**Type of disease is hemorrhage-** Hemorrhage is an acute loss of blood from a damaged blood vessel. The bleeding can be minor, such as when the superficial vessels in the skin are damaged, leading to petechiae and ecchymosis.

### Symptoms of hemophilia- Symptoms

- Unexplained and excessive bleeding from cuts or injuries, or after surgery or dental work.
- Many large or deep bruises.
- Unusual bleeding after vaccinations.
- Pain, swelling or tightness in your joints.
- Blood in your urine or stool.
- Nosebleeds without a known cause.
- In infants, unexplained irritability.

**Type 7 blood disorder-** Factor VII (seven) deficiency is a disorder caused by lack of a protein called factor VII in the blood. It leads to problems with blood clotting (coagulation). Blood clotting normally occurs when there is damage to a blood vessel.

**Factor 8 blood disorder-** Hemophilia A is characterized by deficiency in factor VIII clotting activity that results in prolonged bleeding after injuries, tooth extractions, or surgery, and delayed or recurrent bleeding prior to complete wound healing.

**Hemorrhage in surgery-** Intraoperative hemorrhage is generally defined as blood loss exceeding 1000 mL or 17459

requiring a blood transfusion. Massive hemorrhage refers to acute blood loss of more than 25 percent of a patient's blood volume or bleeding that requires emergency intervention to save the patient's life.

### Therapeutic

**Anatherum muricatum.(cuscus- an east Indian grass)-** Glandular inflammation. Herpes. Ulcers and tumors on scalp. Boils and tumors on tip of nose. Chancre like sore. Scirrhus like swelling in cervix. Breast swollen, indurated. Nipple excoriated. Abscess, boils, ulcers, Erysipelas.

**Askidiosperma/ aspidosperma-** The digitalis of lung (Hale). Pulmonary stenosis. Thrombosis of pulmonary artery. Uremic dyspnea. Cardiac asthma. It stimulates the respiratory centers and increases the oxygen in the blood.

**Avena sativa (Common Oat)-** Act on brain and nervous system. Favorably influencing their nutritive functions. Bad effects of morphine habit. Nervous headache at menstrual period. Occipital headache with phosphate in urine. Amenorrhea and dysmenorrhea with weak circulation.

**Bambusa arundinaceae-** Dysmenorrhea, profuse menses. Suppressed menses. Offensive leucorrhoea. Postpartum depression. Prolong lochia. Menstrual problem after child birth. Excoriation of cervix. Tearing pain in ovary.

**Citrus limonum-** It relieves the pains of cancer. Effects on the circulation and on the blood itself, producing faintness, weak pulse, Haemorrhage. Dropsy. Enlargement of spleen. Dyspnea. Daily headache. Herpatic eruptions.

**Cynodon dactylon -** It helps in reducing inflammation of conjunctiva. Helps in reducing bleeding from nose. Diarrhea and bilious vomiting. Flatulence in abdomen. Vesical stone.

**Narcissus pseudonarcissus (Daffodil)-** Its alkaloid produces dryness of the mouth, cheeks. Cutaneous secretions. Dilates the pupil of the eye. Quickens the pulse and slows and weakens the heart contractions. Alkaloid from the bulbs after flowering produces

copious salivation, increases cutaneous secretion, and contracts the pupil of the eye. Produces slight relaxation of the pulse and slight faintness and nausea.

**Oryza sativa**- It helps in managing arthritis and rheumatism. Reduce back and knee pain. Indigestion. Skin disorder.

**Saccharum officinalis - Sucrose (Cane sugar)** -Sugar is an antiseptic combats infection and putrefaction. Acidity and anal itching. Cold expectoration. Myocardial degeneration. Child is cross, peevish. Headache every seven day.

**Stigmata medis zea**- Organic heart disease. Oedema of lower extremities. Scanty urination. Urine contains blood and red sand. Tenesmus after urination. Gonorrhea. Cystitis. Suppression and retention.

**Triticum agropyron** (Couch grass) Excessive irritability of the bladder, dysuria, gonorrhea, frequent difficult and painful urination. Gravelly deposit. Catarrhal and purulent discharges. Urine is dense and causes irritation of the mucus surfaces.

### Observation

The study of "Efficacy of Poaceae family in cases of haemorrhagic disorder" 100 cases have been included. The data obtained was sorted out in the form of different charts and tables. Total 100 patients (n= 100) were selected based on the different age group.

The distribution of patients according to age group reveals that 12% of the patients, or 12 out of 100, fall within the 0-12 years age range. In the 13-45 years age group, 71 patients make up 71% of the total. In the 46-60 years age group, 10 patients make up 10% of the total. In the 61-80 years age group, 7 patients make up 7% of the total. The largest proportion of patients, 71%, are in the 13-45 years age range, accounting for 71 individuals. Overall, the total number of patients in the study is 100, evenly distributed across these four age groups. This suggests that the majority of patients in the study are in the age group of 13-45 years.

The distribution of patients according to gender shows that out of 100 participants, 51% are male, accounting for 51 individuals, while the majority, 59%, are female, with 59 participants. This indicates that the study had a higher representation of female patients compared to male patients, with females making up more than two-thirds of the total sample.

The distribution of patients based on socio-economic status shows that 41% of the participants belong to the lower socio-economic class, 51 % are from the middle class, and 8 % fall into the upper socio-economic class. This indicates a relatively balanced representation of patients across different socio-economic backgrounds in the study.

The distribution of patients based on habitat shows an equal representation, with 17% of the participants residing in urban areas and 83 % from rural areas. This balanced distribution ensures that the study captures data from both urban and rural populations equally.

The distribution of medicines prescribed to patients reveals that *Cynodon dactylon* was the most commonly used, given to 38 % of patients, followed closely by *Avena sativa* (Common Oat) 29 %. *Citrus limonum* was used in 10% of cases, while *Saccharum officinalis*-Sucrose (Cane sugar) 8%. *Bambusa arundinacea* 7 %. *Triticum agropyron* (Couch grass) 5%. *Anatherum muricatum* 2%. *Stigmata medis zea*. 1%. This variety of medicines shows a diverse treatment approach tailored to individual patient needs.

### Summary.

**Study Title:** Effectiveness of Individualized Homoeopathic Medicine from Poaceae family for haemorrhagic disorder in both sexes and all age group.

**Objective:** The primary objective of this study was to evaluate the utility of medicine from Poaceae family in treating haemorrhagic disorder in all age group. The focus was on assessing symptom improvement and the overall efficacy of individualized homoeopathic treatment in all age group. Given the increasing prevalence of haemorrhagic disorder among all age group and the limitations of conventional treatments, this study sought to provide insight into alternative therapeutic approaches.

### Methodology:

- **Study Design:** A prospective study design was implemented, conducted in both the Outpatient Department (OPD) and Inpatient Department (IPD) of Laxhmiben Homoeopathic Institute and Research institute, Bhandu, Mehsana, Gujarat. This setting was selected for its accessibility to a diverse patient population and its comprehensive approach to homoeopathic care.
- **Participants:** The study comprised 100 participants, including both males and females within the age range of 0 to 80 years. This demographic was chosen to represent the general population, which often presents unique challenges in the management of haemorrhagic disorder.
- **Sampling Technique:** Random sampling was employed to ensure that the sample accurately represented the larger population of all age group presenting with haemorrhagic disorders. This approach minimized selection bias and allowed for a more generalized understanding of treatment efficacy across different subgroups.
- **Data Collection Tools:** Data collection involved multiple methodologies, including detailed case taking using a standardized proforma to gather comprehensive patient histories. Additionally, structured questionnaires were utilized to assess patient reported outcomes and satisfaction with treatment.

- **Statistical Analysis:**

A paired t-test was utilized to analyze the differences in patient scores before and after treatment. This statistical tool is effective in determining whether there is a

statistically significant difference between the means of two related groups, in this case, the scores reflecting symptom severity.

## Results:

- **Demographics:** The study sample was diverse, comprising participants from various age groups, genders, and socio-economic status. This diversity enhances the applicability of the findings to a broader population and reflects the real world scenario of hemorrhagic disorder in all age group patients.
- **Efficacy of Treatment:** The results indicated that 70% of the patients demonstrated significant improvement in their symptoms following treatment. This high percentage under scores the potential effectiveness of individualized homeopathic remedies in managing haemorrhagic disorder. The statistical analysis yielded a p-value that was below the conventional significance level of 0.05, suggesting that the observed improvements were unlikely to have occurred by chance and indicating strong evidence of treatment efficacy.
- **Common Remedies Used:** Among the remedies administered, Cynodone, Avena sativa, and Citrus lemonum were frequently noted as effective in addressing the specific symptoms presented by patients. The repertorization process facilitated a tailored approach, allowing practitioners to match remedies closely to the individual symptomatology, thereby enhancing treatment outcomes.

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