

MEDICINAL, BIOLOGICAL AND INDUSTRIAL PROPERTIES OF MAIZE GRASS

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ABSTRACT:

Maize Grass belongs to the family Poaceae. Nadd / Narr and Penstick is the two common Kashmiri names for it. The chemical constituents found in it are Terpenoids, Alcohols, Esters, Anhydrides, etc. It has a number of Chemical, Biological and Medicinal properties. The aqueous extracts is used as an anti diabetic besides other biological properties including anti cancerous property, steroid synthesis and to some extent metastatic property. All these properties are found in its shoot.

Keywords: Maize Grass, Medicinal property, Biological activity, Chemical activity and Chemical constituents.

1. INTRODUCTION:

Maize Grass belongs to the family Poaceae and is a medicinal plant. Generally two types of varieties are found small (early flowering) and big (late flowering). The whole of the plant has been tested and for these medicinal properties.



Scientific Classification

Kingdom: Plantae

Phylum: Angiosperma

Order: Poales

Family: Poaceae

Vernacular name: maize grass

2. MORPHOLOGY:

Maize Grass is an annual herb arising from an underground rhizome. The roots are adventitious borne from nodes of underground rhizome. The stem is Culm with solid nodes and hollow internodes. The leaves are borne from each node in an opposite phyllotaxy mode. Leaves have an alternate venation as peculiarity of monocots. There is also a Racemose Inflorescence at the top of plant body in which flowers are arranged in an acropetal form.

Traditional Use:

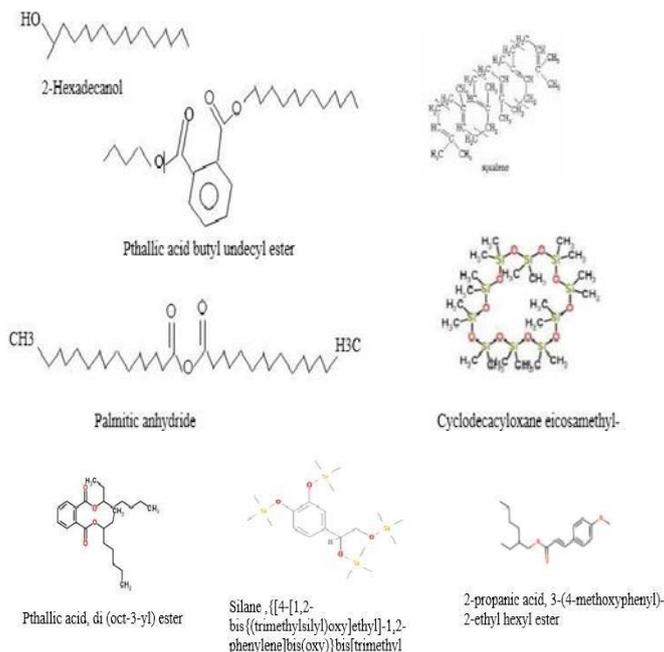
Traditionally Maize Grass has been used as a pen to write on slates, papers etc. in medieval Kashmir valley. It is also used as cattle feed.

Chemical Constituents:

Maize Grass possesses numerous active compounds which are responsible for a number of Biological, Chemical, Medicinal and Industrial activities. The active compounds are:

2-Hexadecanol (C₁₆H₃₄O), Phthallic acid butyl undecyl ester (C₂₃H₃₆O₄), Silane, {[4-[1,2-bis(trimethylsilyloxy)ethyl]-1,2-phenylene]bis(oxy)}bis(trimethyl (C₂₀H₄₂O₄Si₄), 2-propanic acid, 3-(4-methoxyphenyl)-2-ethyl hexyl ester (C₁₈H₂₆O₃)

Palmitic anhydride (C₃₂H₆₂O₃), Cyclodecacyloxane eicosamethyl- (C₂₀H₆₀O₁₀Si₁₀), Phthallic acid, di (oct-3-yl) ester (C₂₄H₃₈O₄), Squalene (C₃₀H₅₀).



3. PHARMACOLOGICAL ACTIVITY:

Anticancer activity

Squalene is a natural 30 Carbon organic compound originally obtained for commercial purposes primarily from

shark liver oil, although it is also found in plants as well. It is known to possess anti cancerous property. Squalene is the biological precursor to the whole family of steroids. Oxidation via squalene monooxygenase of one of the terminal double bond of squalene yields 2,3-squalene oxide. Which undergoes enzyme catalyzed cyclization to afford lanosterol, which is then elaborated into cholesterol and other steroids. Squalene is also used in conjunction with surfactants in certain adjuvant formulations.

Industrial Use

Palmitic anhydride is a derivative of Palmitic acid which has a number of industrial applications like the manufacturing of soaps, detergents, mold soaps, cosmetics etc.

2- Hexadecanol which is also called as cetyl alcohol or palmethyl alcohol was primarily obtained from whale oil from which it gets its name cetyl alcohol is used in the cosmetic industry as an opacifier in shampoos or as an emollient, emulsifier or thickening agent in the manufacture of skin creams and lotions. It is also used as a lubricant in nuts and bolts and is an active ingredient in some liquid pool covers.

3- Antidiabetic property

The aqueous extracts of *Maize Grass* from different parts like leaf, stem, shoot etc. blood glucose lowering property in human beings. Initially the blood glucose levels of a number of patients were checked and recorded. Then the patients were asked to take 30 to 50 mls of aqueous extract of *Maize Grass*, again their blood sugar levels checked and recorded after a gap of 30 to 55 minutes. It was concluded that blood sugar level got lowered from 15 to 50 mg/dl. The effect further depended upon the patient as well as on the concentration of aqueous extract, more the concentrated extract more it was effective. The effect was permanent in some patients as well. Same procedures were performed on normal humans and the effect was not much effective as compared to previous one.

ACKNOWLEDGEMENT:

This is an individual research without being funded by any organization. I performed this on my own expenditure but took guidelines of some mentors. I started working on it on my own dues and performed a number of tests. Then the confirmatory results were performed at Modern Clinical Laboratory Mohammadpora Kulgam and the chemical analysis of the plant extract was done at Sher-i- Kashmir University of Agricultural University Shalimar Srinagar Kashmir. Hence I considered it as an achievement because neither I am the scholar of any university nor the researcher of a hi tech laboratory, I am simply science graduate from Govt. Degree College Kulgam Kashmir.

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