



ORIGINAL RESEARCH PAPER

Botany

PHYTOCHEMICAL SCREENING OF SOME WILD VEGETABLES USED BY TRIBAL POPULATION OF NANDURBAR DISTRICT (M.S)

KEY WORDS: Wild vegetables, Phytochemical, Tribal, Nandurbar.

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ABSTRACT

Wild edible plants play a major role in meeting the nutritional requirement of the tribal population in remote areas. Wild edible plants serves supplementary food for non-indigenous people & are one of the primary sources of cash income for poor communities. Wild edible plants have an important role in consuming food security & improve the nutrition in the diet of many people in developing countries. Our aim of the study was to analyze different phytochemical from collected plant species.

INTRODUCTION

The district is bounded to the south & south east by Dhule district to the west & north is the state of Madhya Pradesh. The northern boundary of the district is defined by the great Narmada river. Nandurbar district was extending between 21' 0 to 22' 03 north latitude & 73' 47' to 74' 47' east longitude. The district comprises 6 talukas – Akkalkuwa, Dhadgaon, Taloda, Shahada, Nandurbar & Navapur.

The north side of the district is covered by ranges of satpuda hills. One tehsil of landurbar district namely Dhadgaon (Akrani) situated in this hilly area. The dhadgaon region is very rich in wild vegetable food diversity.

Nandurbar is a tribal district. The tribal population consisting of Bhil, Koknas, Pawara. These tribal communities are mainly dependent on forest production. Dhadgaon tehsil ranks first with 94.95% tribal population^[9].

In present work all plant or vegetable collected belongs to different family & also they have different nutritional value. These plants are mainly grown near dhadgaon region & peoples of this region also consume these plants.

Phytochemistry is a branch of Science that deals with the study of chemicals obtained from plants with desirable biological activities. These phytochemicals are mainly the secondary metabolites offering medicinal attributes to the plant^[4].

MATERIALS AND METHODS

2) Collection of Plant Material:

The fresh and healthy plant material was collected from Dhadgaon region with the help of tribal people. The plant material was washed thoroughly under tap water to remove dirt and impurities whole plant material was kept in the shade until it is dried completely.

2) Preparation of Extract:

The completely dried plants were made to a fine powder using a mixer grinder (Remi Atomix Blender). The solvents used for extraction were water and methanol. The powdered sample was subjected to successive solvent extraction. The

proportion of material to solvent was taken as 1:10 (ww/vv). The material was soaked for 48 hours in conical flasks containing extraction solvents sealed with aluminium foil. After 48 hours the solutions were centrifuged at 5000 rpm (Remi Centrifuge) for 20 minutes. The supernatant was further filtered using Whatman filter paper 1. The filtered extract was used for qualitative phytochemical tests. The various qualitative tests of the extracts were carried out to detect phytochemicals by using standard phytochemical methods of Harborne (1973), Trease and Evans (1989) and Sofowara (1993)^[10, 8, 3]. (Khedkar D.D. and Oke A.V., 2013).

Phytochemical Tests

Tannin

The test was conducted by mixing 1 ml of the extract with a few drops of 5% FeCl₃. The presence of tannins was confirmed by the appearance of a blackish colour.

Saponins

The test was carried out by mixing 1 ml of distilled water with 1 ml of extract followed by vigorous shaking of a test tube. A stable persistent froth confirmed the presence of saponins..

Terpenoids

The test was carried out by mixing 1 ml of extract, 1 ml of chloroform and 1 ml of concentrated H₂SO₄. The appearance of reddish-brown colour at the interface proved the presence of terpenoids.

Alkaloids:

The test was conducted by mixing 1 ml of extract and 1 ml of Hager's reagent (1 gm picric acid in 100 ml distilled water). The appearance of prominent yellow precipitate confirmed the presence of alkaloids.

Flavonoids:

The test was conducted by mixing 1 ml of the extract with a few drops of 1% AlCl₃ solution. The formation of yellow colour in the reaction mixture indicated the presence of flavonoids.

Reducing Sugar:

For the reducing sugar test, the extract was shaken with distilled water and filtered, it was boiled after the addition of

Fehling's solution A and B in equal quantity, the appearance of orange-red precipitate indicated the presence of reducing sugars.

Steroids:

To the 2ml chloroform & 0.5ml extract concentrated H₂SO₄ was added from side of the test tube to from lower layer reddish brown colouration at interface reveals the presence of steroids.

Coumarins:

To the 2ml of extract 3ml of 10% NaOH was added appearance of yellow colour indicates presence of coumarins.

Phlobatannins:

Distill water was added to extract shaken & filtered 2% Hcl added & boil development of red colour confirm phlobotannins.

Emodins:

2ml of ammonium hydroxide & 5ml of benzene were added to the extract a colour change to red indicates presence of emodins.

Table 1

Compound	Portulaca oleracea		Chenopodium album		Amaranthus viridis		Hibiscus Cannabinus		Hibiscus sabdarifafa		Commelina benghalensis	
	W	M	W	M	W	M	W	M	W	M	W	M
Reducing Sugars	-	+	-	-	-	+	-	+	-	-	-	-
Tannin	-	-	+	+	+	+	+	+	-	+	-	+
Saponins	+	+	-	+	+	+	+	+	+	+	+	+
Terpenoid	+	+	+	+	-	+	+	+	+	-	-	-
Flavanoid	+	+	+	+	+	+	-	+	-	+	+	+
Steroid	+	-	+	+	-	-	+	-	+	+	+	-
Coumrins	+	-	+	-	+	-	-	-	+	-	+	-
Alkaloids	-	-	-	+	-	+	+	+	-	-	+	-
Phlobarans	-	-	-	-	-	-	+	-	+	-	-	-
Emodins	-	-	-	-	-	-	-	-	-	-	-	-

Extraction Solvents-W= Water;M= Methanol

RESULTS AND DISCUSSION

Qualitative phytochemical analysis of plants are reported in table 1

Qualitative analysis of all the plants shows good amount of presence of Flavonoids, Tannins, Saponins and Terpenoids while Steroids, Coumarins and Alkaloids were also reported in few of the plants while Emodins were absent in all the plants. Many wild plants are used as food by tribals and other local people living in and around the forest areas^[6]. Nutritional and phytochemical study of other wild vegetables were also reported by other workers^[1, 2, 7].

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