

# Comparative Study on Phytochemical Screening and HPLC Analysis of *Daucus Carota* Pulp and Aerial Parts

V. Kavitha<sup>1</sup> N. Gunavathy<sup>2</sup>

<sup>1</sup>M.Phil Scholar <sup>2</sup>Assistant Professor

<sup>1,2</sup>Department of Chemistry

<sup>1,2</sup>Nirmala College for College, Coimbatore, Tamilnadu

**Abstract**— Phytochemical and biological screening is necessary for the isolation of functional groups which lead to the discovery of new active compounds. In the present work, the crude aqueous extract of *Daucus carota* were tested for phytochemical screening and HPLC analysis which indicated the presence of various class of bioactive secondary metabolite such as terpenoids, flavonoids, saponins, steroids and glycosides. HPLC analysis was performed to quantify the  $\beta$ -carotene content in pulp and aerial extract of *Daucus carota*.

**Keywords:** active compounds, *Daucus carota*, pulp, aerial, phytochemical screening, HPLC

## I. INTRODUCTION

Plants are richest source for phytochemicals and nutraceuticals. It plays a role as an alternative medicine for drugs. Phytochemicals are primary and secondary compounds found in plants. These active substances in plants have been used for medicinal purposes, from the prehistoric time, as home remedies, an over-the-counter drug products, and dietary supplement.

Chlorophyll, proteins and common sugars are the primary constituents and secondary compounds have terpenoid, alkaloids and phenolic compounds [1]. The active phytoconstituents of plant have become keen interest in recent time due to its resourceful applications. Secondary metabolites present in smaller quantities in higher plants, include the alkaloids, steroids, flavonoids, terpenoids, tannins, and many others [2]. According to (Li *et al*) [3], phenolic compounds is one of the most numerous groups of substances in plant kingdom ranging from simple molecules, such as phenolic acids, to complex compounds, such as tannins.

Flavonoids constitute a group of natural compounds that occur in fruits, vegetables, wine, tea, chocolate and other cocoa products. Daily dietary intake of flavonoids and similar polyphenols exceeds that of antioxidative vitamins and provitamins [4]. Phytochemicals accumulate in different parts of the plants, such as in the roots, stems, leaves, flowers, fruits or seeds.

*Daucus carota* Linn. has been used for treatment of anti-diarrhea, anti-infection, anti-high blood cholesterol, anti-inflammation, anti-seizure, anti-fungal anti-bacteria and anti-cancer [5-11]. Previous studies revealed the presence of phenolic, flavonoid, carotenoid and anthocyanin in ethylacetate and methanolic extract of *Daucus carota* roots during a phytochemical screening [12-17]. Survey of literature provided information on *Daucus carota* pulp. Until now, we have no information about *Daucus carota* aerial extract.

The objective of study involved the phytochemical evaluation and HPLC analysis of *Daucus carota* plant.

Extraction methods are used for separation of active constituents of plant tissues using solvents through standard procedures. Different isolation methods are available to identify active compounds present in crude extract like thin layer chromatography (TLC), gas chromatography (GC), high performance liquid chromatography (HPLC) and more. But the easiest and simplest method is phytochemical screening. The phytochemical screening method employed in this study was to find out qualitatively and quantitatively the phytochemical constituents in the pulp and aerial extract of *Daucus carota* plant (Fig. 1). The techniques played may have significant role in the search for additional resources of raw material for pharmaceutical industry.

Plant: *Daucus carota*

Aerial part	-	DCA
Pulp	-	DCP

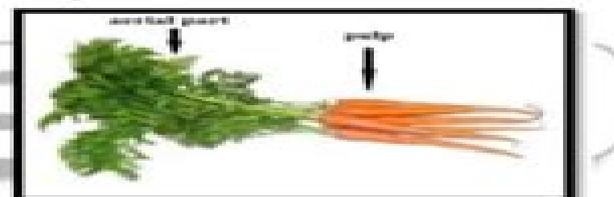


Fig. 1: Photograph of *Daucus carota* parts used as corrosion inhibitor

## II. MATERIALS AND METHODS

### A. Collection of plant materials

The study was carried out on the *Daucus carota* aerial part (DCA) and pulp (DCP). The samples were obtained from the commercial market, Coimbatore, India. The aerial part were separated from the fruit pulp, cleaned and made into small pieces, washed and then was air dried under shade (Fig. 2, and 3). The dried samples were ground into powder using an electronic blender and the fine powder was stored in air tight container and was used for phytochemical analysis.

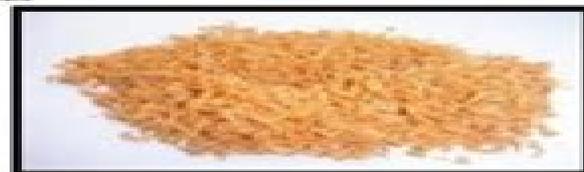


Fig. 2: Dried pulp materials of *Daucus carota* (DCP)

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