3rd International Conference on Toxicology and Clinical Toxicology

June 17-18, 2020

TRACK CATEGORIES

The track category is the heading under which your abstract will be reviewed and later published in the conference printed matters if accepted. During the submission process, you will be asked to select one track category for your abstract.

Track 1 : Nanotoxicology

Nanotoxicology (https://toxicology.pulsusconference.com/) is the study of the toxicity (https://toxicology.pulsusconference.com/) of nano-materials due to quantum size effects and enormous area to volume ratio, nanomaterials have distinctive properties compared with their larger counterparts that have an effect on their toxicity. Of the potential hazards, inhalation exposure seems to present the foremost concern, with animal studies showing pulmonary effects like inflammation, fibrosis, and carcinogenicity (https://toxicology.pulsusconference.com/) for a few nanomaterials. Skin contact and consumption exposure are a priority.Nanoparticles are often inhaled , swallowed, absorbed through skin and deliberately or accidentally injected throughout medical procedures. They could be accidentally or inadvertently released from materials implanted into living tissue. One study considers release of airborne designed nanoparticles at workplaces, and associated worker exposure from varied production and handling activities, to be terribly probable.

Track 2 : Toxicology

Toxicology (https://toxicology.pulsusconference.com/) deals with the study of the character and action of dangerous substances. It incorporates, seeing and uncovering appearances, parts, acknowledgment and handling of harmful substances significantly association with the symptom of people. It consolidates customary masters and organic chemistry (https://toxicology.pulsusconference.com/) blends found in nature, and likewise pharmaceutical mixes that are organized for useful use by people. These substances could have harmful effects in living structures change of integrity intrusion being developed outlines, bother, malady and death.

Track 3 : Clinical Toxicology

Track 4 : Emergency medicine

Track 5 : Medical Toxicology

Track 6 : Environmental Toxicology

Track 7 : Industrial & Occupational Toxicology

Track 8 : Aquatic Toxicology

Track 9 : Pharmaceutical Toxicology

Track 10 : Immunotoxicology

Track 11 : Genetic Toxicology

Track 12 : Neurosurgeons and Neurotoxicology

Track 13 : Food Safety and Toxicology

Track 14 : Systems Toxicology

Track 15 : Pediatric toxicology

Track 16 : Pharmacology

Track 17 : Trending Toxicology Concepts

Track 18 : Oncology

Track 19 : Pediatrics

Track 20 : Biomarkers for environmental pollution

Track 21 : Veterinary Medicine

Track 22 : Biotoxins

CONFERENCE SCHEDULE

Conference Schedule (https://toxicology.pulsusconference.com/2020/scientific-program)

Abstract Submission (https://toxicology.pulsusconference.com/2020/abstract-submission)

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FAQS

Visit the Frequently Asked Questions (FAQs) (https://toxicology.pulsusconference.com/2020/speaker-guidelines) page for more information on abstract submissions.

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Determination of structural characteristics of starch extracted from seeds of *Heritiera littoralis* Dryand

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Starch was isolated from the seeds of *Heritiera littoralis* and further used to study the various properties. Also, influence of structural features on thermal properties was studied. Starch characteristics were examined using polarized light microscopy (Photomicrography), Scanning electron microscopy (SEM), Fourier transform infrared (FT-IR) spectroscopy, X-ray diffraction (XRD) pattern, and Differential scanning calorimetry (DSC). The isolated starch was found to be creamy, crystalline, non-hygroscopic powder with yield of about 31.5%. Starch granules were an oval to polygonal in shape with size ranges 1-5µm. The isolated starch showed indicative of an intact granule structure. Isolated starch had the C-type XRD pattern. The enthalpy of gelatinization (ΔHgel) and percentage of retrogradation (%R) for this starch were 11.053 J/g and 83.51% respectively, which may related to XRD pattern and small granule size. Therefore, the present attempt is made to explore this starch is an important biomaterial. Knowledge of molecular structure can suggest an application of the starch in products to improve their functional characteristics, so structural features of starch was studied.

INTRODUCTION:

Starch is one of the most widely present natural polymers. It has major economic importance. Starch is found mainly in the storage organs of plants in the form of granules. It is synthesized in semi-crystalline granular structure in grains, roots, tubers, leaves and fruits. The morphology and the structure of the starch granules depend on the botanical sources (Jane *et al.,* 1994), the organs of the plants (Vrinten and Nakamura 2000, Li *et al.,* 2007), and the stages of development (Briones *et al.,* 1968, Li *et al.,* 2007). Starch can be readily converted chemically and biologically into many useful and diverse products such as paper, textiles, adhesive beverages, confectionaries, pharmaceutics and plastics (Agbo and Odo, 2010). Molecular and structural characteristics of starches have of great importance to understand possible applications of these polymers in diverse system. Many different techniques can be used to elucidate these characteristics and these include X-ray diffraction (XRD), which measures level of crystallinity; Fourier transform infrared (FT-IR) microscopy, which used to determine the short-range order in a sample and Differential scanning calorimetry (DSC), has been used to monitor changes occurring upon heating to the bulk of the sample.

Mangrove trees have a variety of morphological, physiological and reproductive adaptations in common that enable them to grow in a tropical and subtropical coastline marine environment. *Heritiera littoralis* Dryand (Sterculiaceae) is prominent mangrove and it has various applications in traditional folk medicine. A tree is a slow growing, branched, evergreen with a wide, dense crown of thick, horizontal branches. The species is more at risk along the west coast of Maharashtra because of coastal development, extraction at the extremes of their distribution and also due to the habitat conversion. The beautiful tree is to be seen in the forest of mangroves, commonly known as 'Sundari'. Some-times, this tree has found solitary or in the group around sandy areas. The fruit of *H. littoralis* is egg shaped, woody with a ridge along the centre of one side so that they resemble boats with a sail. Pale green initially after ripening glossy brown in colour and consists of 1-2 seeds. The seeds are eaten by large crabs, monkeys and wild boar. The fruits and seeds are used in treating diarrhoea and dysentery (Tewtrakul *et al.,* 2010).

In recent years, non-conventional starches have become of increasing importance because of their potential application in the development of new products. In this sense, the seed starch of *H. littoralis* has been studied to determine structural properties. However, no studies concerning the molecular as well as structural characterization have been reported to date. Therefore, the present work analyzed the structural properties of seed starch of *H. littoralis* by using different techniques.

MATERIAL AND METHODS

Collection

Fruits were collected from west coast of Maharashtra (Sindhudurg District). For this, collections were made by visiting the sites season to season as when needed. Only the fruits that had spontaneously fallen onto the ground were collected and used for analytical work.

Sample Preparation

Fruits were collected by locating the species after visiting the sites on west coast of Maharashtra and brought to the laboratory for further analysis. The material was washed and removes the seeds.

Seeds were air-dried and ground to a fine powder. Powder stored in air-tight containers prior to further analysis.

Methods

Starch Isolation

Starch was isolated from seeds of *H. littoralis* following the method of Isao *et al.,* (2004) with some modifications. Seeds of mangroves were cut into small pieces and pulverized with an electric mill. The pulverized powder was combined with 5 vol. of cold water and then homogenized. The suspension was allowed to settle down overnight at 4°C. After decantation, the settled granules were re-suspended in cold water. The starch granules were then collected by centrifugation and partially purified by treating with acetone. Defatted starch was prepared by replicate dissolutions in dimethyl sulfoxide (DMSO) and precipitations with ethanol. Starch granules were allowed to repeated washing of 70% ethanol to attain maximum purity.

Estimation of starch

The extracted starch content was estimated by the method of Benesi *et al.,* (2004). The estimated starch was measured as follows:

Starch content = Weight of isolated starch / Weight of dry powder × 100

- **CONFIRMATION OF STARCH:**
- **Starch- I_2KI Test:**

Isolated starch was confirmed by potassium iodide (I_2KI) test, which is given by Daniel (1954). 1g starch sample was mixed with 5 ml of distilled water in a test tube. The mixture was heated in boiling water bath for 2-3 min. After heating cool the test tube and settle the starch powder for 6-8 hours. Neutralized the solution with 0.1% HCL drop by drop and then add phenolphthalein indicator one drop extra. Mix the solution properly and then add 0.2% I_2KI solution drop by drop until the blue colour develops.

CONCLUSIONS

The isolated starch of *H. littoralis* had oval to polygonal shaped and small sized granules showed prominent structure showed in light as well as scanning electron microscopy, indicating that the isolation procedure yielded intact granules. Also, the isolated starch had the highest temperature and enthalpy of gelatinization, a parameter important in starch applications. The highest gelatinization temperatures were found due to agreement with the different XRD pattern which is mixture of A- and B-type. Isolated starch contained similar amount of short-range order which could influence on some other physicochemical and functional properties. The results obtained in structural characterization provide information about the possible behaviour of the starch when being used in certain applications.