CAROB PRODUCTS

D-Pinitol Extract – Carob Extract



D-Pinitol Extract is carob extract obtained from natural carob fruit and rich in D-pinitol content. Carob is one of the important herbal raw materials that naturally contains D-pinitol. As Carob Türkiye, we supply D-pinitol-containing extracts obtained from carob raw materials originating from Turkey for our B2B customers. Our product; It can be presented in a way that can be used as a raw material in the production of food, functional food, food supplements and herbal ingredients. We offer professional supply solutions for standardized and analyzable Carob Extract containing D-pinitol with our raw materials supplied from Turkey's important carob production regions.

Stock Status: In Stock

Technical Specifications

Origin	Türkiye
Packaging	Determined by product form and order terms

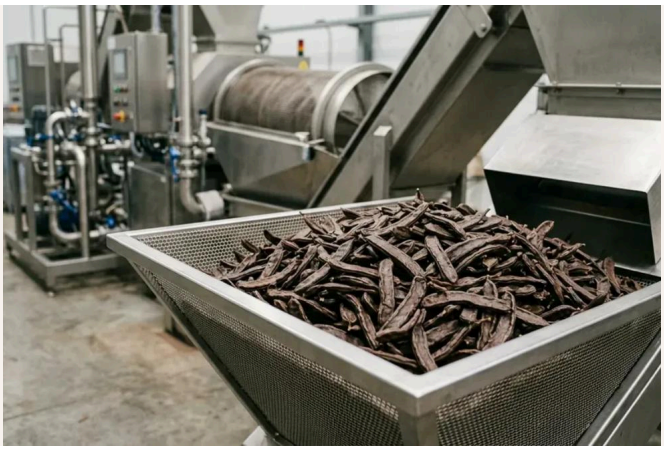
Carob Raw Material Containing D-Pinitol – Production Process

The production process of carob raw material containing D-Pinitol begins with the selection of quality carob fruits that naturally contain D-pinitol. D-pinitol, which is naturally found in carob, is one of the water-soluble components and can be taken into the liquid phase under appropriate extraction conditions. The main purpose of the production process is to obtain a raw material suitable for B2B use by extracting the natural components of carob in a controlled manner. The quality of the raw material used in this process, production conditions and processes applied can directly affect the composition of the final product. The raw material production process consists of 10 stages.

- Selection of Carob Raw Material
- Cleaning and Pre-Processing
- Crushing and Shredding
- Controlled Aqueous Extraction
- Filtration and Solid-Liquid Separation
- Concentration of the Extract
- Decomposition of D-Pinitol Fraction
- Evaluation of D-Pinitol-Containing Extract
- Analysis and Quality Control
- Packaging and Preparation for Shipment

The amount of D-pinitol; It may vary depending on the variety of carob, the region where it grows, the level of maturity and other raw material properties. For this reason, appropriate laboratory analyzes should be taken as a basis instead of estimated values in determining the D-pinitol ratio in the product. The raw material obtained can be evaluated in different product forms according to the customer's usage area and the technical features requested. As Carob Türkiye, we supply special raw materials sourced from carob for food producers, distributors and B2B

customers at home and abroad.



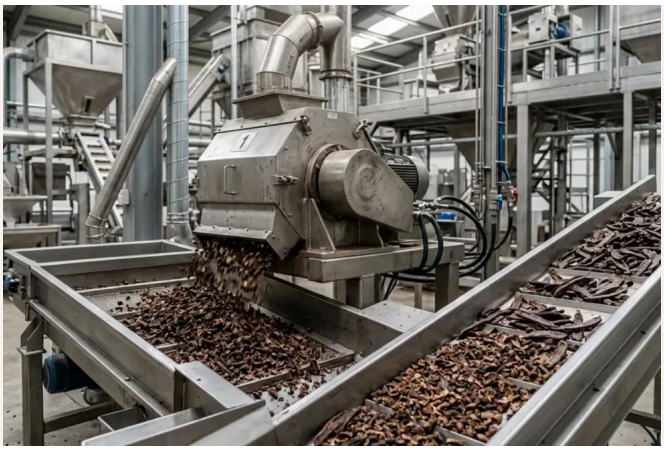


The first stage of the D-Pinitol production process is the selection of carob fruits with appropriate properties. It is of great importance for the quality of the final product that the raw material to be used is clean, healthy and complies with the production criteria. Natural composition of carob fruit; It may vary depending on the region where it is grown, variety, harvest time, maturity level and storage conditions. For this reason, the raw material to be used in production should be evaluated according to the determined quality criteria.

The physical appearance, foreign matter status, moisture level and general quality characteristics of the fruits are checked and appropriate raw materials are put into production. Considering that the D-pinitol content may vary from raw material to raw material, analysis results can be used when necessary. The traceability of the carob to be used in production contributes to the controlled execution of subsequent processes. Thus, the extraction phase starts with a raw material with standard and controlled properties as much as possible.

Before being put into production, the selected carob fruits are cleaned of dust, soil, vegetable residues and other impurities that may be present on their surface. The purpose of the cleaning process is to preserve as much as possible the physical purity and production hygiene of the raw material that will enter the extraction process. During the preliminary checks carried out on the raw material, fruits that are not suitable or do not meet the production criteria may be separated. After cleaning, it is ensured that the fruits are brought to the appropriate physical properties for the process.

The processes to be applied at this stage may vary depending on the production technology to be used and the properties of the raw material. When necessary, pre-treatments such as surface cleaning and controlled drying can be applied to ensure that the next stages are carried out more regularly. Controlled pre-processing reduces the transport of unwanted solids and foreign components into the process during extraction. The carob raw material, whose cleaning and pre-treatment is completed, is taken to the controlled crushing and shredding stage.





The cleaned carob fruits are shredded into appropriate sizes to ensure that the target components can pass into the liquid phase more effectively during extraction. The crushing and shredding process is an important pre-treatment that increases the surface area of the fruit and facilitates its contact with water. Since the carob fruit has different parts such as the shell, pulp and seed, the shredding and separation method to be applied can be determined according to the targeted product. Depending on the purpose of the process used, the whole fruit or certain parts can be used in production.

Controlled shredding helps prevent undesirable situations such as overheating or excessive thinning of the raw material. Appropriate particle size ensures that contact with water occurs more regularly in the subsequent aqueous extraction stage. The shredded raw material obtained at this stage is transferred to the controlled extraction process. Thus, suitable physical conditions are created for the water-soluble components naturally found in carob to be taken into the extraction environment.

Crushed carob raw material can be subjected to a controlled aqueous extraction process to take water-soluble natural components into the liquid phase. Since D-pinitol is a water-soluble component, it can pass into liquid extract from carob under appropriate water-based extraction conditions. Efficiency of extraction; It may vary depending on raw material properties, water amount, temperature, processing time and the process method used. For this reason, it is important to keep the extraction conditions under control to ensure consistency in the composition of the extract obtained.

Research has used different temperatures, durations, and solid-to-liquid ratios for the extraction of D-pinitol from carob by aqueous extraction. However, the results obtained in scientific studies should not be considered a fixed value or standard for every direct commercial production. Once the extraction is complete, a liquid extract containing various water-soluble components, including D-pinitol, is obtained. This extract is sent to the filtration stage for solids separation and further concentration processes.





The mixture obtained after extraction may contain carob particles and other insoluble solids. Therefore, separating the liquid extract from the solid phase is one of the important stages of the production process. The solid-liquid separation process aims to significantly remove insoluble particles from the extraction liquid. The filtration system used may vary depending on the production capacity and the technical specifications of the product to be obtained. After the initial separation process, finer filtration can be applied if necessary, improving the clarity and physical quality of the extract.

The purpose of this stage is not to separate D-pinitol alone, but to separate the liquid extract containing D-pinitol from the solids and make it suitable for subsequent processes. Keeping the filtration conditions controlled helps to preserve the targeted dissolved components in the extract as much as possible. The resulting filtered extract is made ready for concentration or further component separation processes.

The liquid extract that has undergone filtration can be taken to a controlled concentration process when required by the production process. The main purpose of concentration is to reduce the amount of water in the extract and to collect the dissolved natural components in a denser phase. In addition to D-pinitol, different water-soluble components found in carob can also be found in the concentrated phase at this stage. Therefore, the concentration process alone does not mean that high purity D-pinitol is obtained. The temperature, vacuum, time and other

process conditions to be applied should be determined according to the targeted properties of the product.

Process conditions need to be carefully managed, especially to preserve temperature-sensitive ingredients and keep the physical properties of the product in check. The denser extract obtained after concentration can be used to separate the target ingredient or standardize the product according to the specified specifications. At this stage, the resulting product is still a carob extract, which may contain numerous natural ingredients, and should not be directly identified as pure D-pinitol.





If a product enriched with D-pinitol is desired, additional processes may be required to separate the different components in the concentrated extract. The aim of this stage is to obtain the targeted fraction by separating D-pinitol from other sugars and dissolved components in the extract as much as possible. The separation technology that can be used may vary depending on the targeted purity level, product form and production infrastructure. There are studies in the literature on different extraction and separation approaches to obtain D-pinitol from carob.

However, before any separation technology can be used in commercial production, the process must be technically validated and supported by product analyses. Obtaining the D-pinitol fraction means a more advanced process than simply extracting carob with water. Therefore, the claim that high-purity D-pinitol has been produced should only be based on the results of the analysis that have been confirmed by the separation and purification processes actually applied. If the product is prepared according to the targeted specifications, the separated fraction is transferred to the next purification and standardization stage.

After the separation of the D-pinitol fraction, additional purification and standardization processes can be applied to achieve the targeted product specifications. The purpose of purification is to reduce unwanted or non-targeted components next to the target ingredient and to bring the product closer to the determined quality criteria. The technical method to be applied should be determined according to the production process and the targeted D-pinitol purity. Standardization, on the other hand, aims to ensure that the determined technical specifications of the product are as consistent as possible between different production batches.

At this stage, the D-pinitol content, moisture, purity and other necessary physicochemical properties of the product can be monitored by analysis. In order to present a certain percentage value as a product standard, verification with a reliable and appropriate analytical method is required. In particular, high-purity D-pinitol and D-pinitol-rich carob extract should not be considered as the same product. The product, whose standardization is completed, is taken to the final quality control stage and it is evaluated whether its commercial specifications are met.

Analysis and quality control, one of the final stages of production, ensures that the resulting product meets the specified technical specifications. The actual composition of the product is determined by using appropriate analytical methods to determine the D-pinitol content. The analysis results are also important for evaluating the impact of the raw material used in the production process and the applied process on the product.



If necessary, the moisture content, physical properties, purity and other

relevant quality parameters of the product can also be checked. Recording the analysis results of each production batch helps ensure product traceability and batch-based quality tracking. In particular, if a technical value such as the D-pinitol ratio needs to be reported to the customer, this value should be shared based on the analysis result, not an estimate.

Contact

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