

ALIEN PROPERTY CUSTODIAN

PROCESS OF PREPARING PASTY HIGHLY ACTIVE CELLULOSE CONTAINING MASSES PEPTISIZED BY VEGETABLE COLLOIDS

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The invention relates to a method of working citrus fruit, apples and beets or other fresh vegetable material and waste products thereof, such as beet trimmings from the sugar factories, waste products from the citrus industry, such as e. g. orange or lemon peels and the parings of apples, pears, pumpkins and the like into pasty, very active cellulose containing masses, which process consists in subjecting according to the invention the preferably previously finely divided raw material to a hydrolysing treatment and subsequently comminuting the material thus obtained in order to obtain a homogeneous product. The products thus obtained which mainly consist of very active cellulose and of peptizing colloids, such as pectin and the more or less highly disintegrated decomposition products thereof are suitable for the most widely varied technical applications. This aqueous mass together with organic solvents will e. g. form extremely stable emulsions. These emulsions have a very strong detergent action, since the very active cellulose present in the same constitutes an excellent adsorbing agent. The said mass which contains a very active cellulose most generally will constitute an excellent lathering, moistening, washing, cleaning and dispersing agent. The mass will not only keep at different reactions of the medium but it is also possible to add thereto the usual additions such as buffer salts, soaps, sulphates of fatty alcohols, lather producing and lather maintaining agents. Even chlorine may be present.

It is not only possible to add solvents for increasing the detergent action, but one may also add e. g. mineral oils, tar oils and derivatives thereof and other means for destroying vegetal and animal pests. An emulsion is thereby obtained which will keep very well and which diluted is very suitable for spraying plants in order to protect them from harmful parasites and also for destroying the said parasites, while the emulsion moreover has great adhesive power. These emulsions also are extremely stable which probably is due to the very active cellulose which moreover is present in its most favorable swollen condition. The presence of cellulose on the leaves of the plants need not to be considered as harmful. It is furthermore possible to obtain with the aid of the masses described above excellent and economically advantageous emulsifying agents for other technical emulsions e. g. for those which are used in the construction of streets, etc. In many cases the masses are suitable for sizing purposes while here also the pres-

ence of cellulose has no deleterious influence. Moreover the masses are very suitable as a foundation for ointments, and by the addition thereto of therapeutical and cosmetic agents very stable products are obtained. Still another important application of the masses was found. Apart from the fact that the masses in themselves are very good cleansing agents, it was found that they may be very successfully combined with soap masses, thereby producing soaps in which the said masses not only serve as fillers but also improve the qualities of the soaps owing to their mechanically cleansing, peptisizing and buffering properties whereby a milder action on the skin is obtained.

According to the invention the said vegetable material, preferably citrus fruit, is subjected to a hydrolysing treatment, which may be carried out even in the presence of stronger acids, such as mineral acids and at raised temperatures even at the boiling point. An intensive disintegration of those substances which in the fresh vegetable material accompany the cellulose will be produced thereby and there will be obtained an active cellulose peptisized by the colloids present and in the most favorable swollen condition owing to the hydrolysis.

One may also allow the vegetable residues and the waste products of fruit, if desired after a preliminary washing and freeing of the same from the last traces of juice, which juice may be used in other manners, to stand at a moderate temperature of nearly 20-40° C in the presence of a great deal of moisture. This is done in connection with a decomposition produced by enzymes, which, however, may readily be accompanied by the action of microorganisms, particularly those which produce alcoholic fermentation; this fermentation, however, is preferably to be prevented by the addition of preservatives, as it is detrimental to the quality of the masses thus prepared. With this embodiment of the invention practically neutral masses are obtained.

The disintegration may also be obtained by means of alkaline agents, the stronger salts as well as the salts which only have a very weak alkaline reaction. In this manner masses with a weakly alkaline reaction are obtained. In other words, the stronger the hydrolysing agent the more moderate (fine, delicate, economical) must be the other factors influencing the hydrolysis and this particularly applies to the time and the temperature of the treatment.

By the cooperation of the said individual factors it is possible to control the hydrolyzing fac-

tors it is possible to control the hydrolysis. With vigorous hydrolizing agents a shorter reaction time or a lower temperature or both will be sufficient and conversely. In this manner one obtains an intensive disintegration in which the individual constituents are saved and either remain in the desired condition or are brought into the same. It is also possible by means of a suitably conducted hydrolysis to completely retain the vitamin content of the raw material. The essential feature in this process is that with the masses prepared according to the invention which are characterized by the presence of the cellulose freed from the protopectin substances, the said cellulose is no ballast that is not removed in order to render the process more simple and to save labor, but that the said cellulose plays an important and characteristic part in the application of the masses prepared according to the invention. It will be evident that the cellulose which at the moment of decomposition is practically in statu nascendi is very sensitive and that its condition is greatly influenced by the reaction of the medium.

For certain purposes for which the masses prepared from vegetable material and particularly from citrus fruit are to be used the entire residue of the fruit after pressing may be used, the color of the mass being influenced by the color of the outer rind. For certain purposes the presence of the volatile oil has no detrimental influence either. For other purposes it is to be preferred only to use the peeled fruit or exclusively the in-

terior of the fruit. In this manner products are obtained which may be used as cattle food, e. g. excellent emulsifying agents for cod liver oil emulsions for cattle and, if the raw material is very choice, even for human consumption, e. g. as additions to bakery products, products in powder form for the bakeries, marmalade, etc. The mechanical comminution mills, passing machines and the like, is preferably carried out prior to the hydrolysis and is finished after the hydrolysis. The pastes which contain too much water may for certain purposes remain in the condition in which they have been produced; if they are to be conveyed over a large distance it is advisable either to dehydrate the mass in part, e. g. by pressing or to dehydrate the said mass more completely by drying the same partly or entirely so that a powder is obtained.

The reaction of the masses may be already adapted to the purpose of its application by the choice of the manner in which the hydrolysis is conducted; it is also possible to bring the finished mass by means of suitable neutralization (by mild agents) or by buffering to a suitable reaction without attacking the colloids. It is advantageous to use as neutralizing—or buffer means substances which are also useful for the final purposes; e. g. with masses which are to serve for cleaning purposes the use of water softeners such as alkali phosphates may be useful for the purpose aimed at and will promote the combination with e. g. the soap mass.

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