

# ALIEN PROPERTY CUSTODIAN

## PRODUCTION OF GRITS OR GROATS

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This invention relates to the production of grits or groats of oats or other similar cereal grains (for instance barlow) containing fat within their starchy portion.

In the production of grits the shales are removed so that substantially nothing but the seed kernel is left. Said kernels in most cases are further subjected to various treatments which may consist in comminuting the kernels by passing them between milling stones or rollers having sharp-edged ridges or grooves thereon. Such comminution may also be carried out before removing the shale. The whole or comminuted kernels may be subjected to further finishing treatments, f. inst. they may be flattened between smooth rollers, and in some cases they are further subjected to a treatment by steam in order to improve the keeping qualities and make the starch more readily soluble. The flour or meal produced during gritting or during the passages of the product between comminuting or flattening rollers may be removed by sieving.

The grits thus produced are very poor in carotene and vitamin A. The present invention relates to a process, by which the lack in carotene and vitamin A of the usual grits, especially oat grits, is compensated for.

This is done according to my present invention by incorporating into the grits after their production or during the treatments carried out after removal of the shales a solution of carotenes and/or vitamin A in a vehicle compatible with the fat contained in the starchy portion of the cereal grains in question and consisting of a fat or lipid or lipid solvent. The finished or partially finished grit must be intimately mixed with the said solution. During the mixing operation and the subsequent storage the solution will dissolve into the fatty constituents naturally contained in the grits, with which the said vehicle of the carotenes and/or vitamin A must be compatible.

In the resulting product the carotenes and/or vitamin A obtains a property, of which it is not in possession before the addition thereof to the finished or partially finished grit, i. e. they obtain the property of being resistant to oxidative deterioration, because they are kept protected in the fat inside the grit particles and not absorbed to the surface of the grains. It has been found that the carotene or vitamin-A-oil present in the grits treated according to the present invention keeps well for at least 6-8 months, which would not be the case, when these easily deteriorable

substances were under the influence of oxidising agents in or outside the grain.

Furthermore the oat meal has an antioxidising property acting in the same direction.

The antioxidising property of oats has been utilized before but in quite another manner. Thus finely ground oat meal has been incorporated into batches of the fat to be preserved, or it has been dusted upon the surface of fat-containing products having a tendency to develop rancidity, or the meal has been dusted upon the bags or wrappings, into which such products are packed.

According to my present invention, in contradistinction to these known appliances of the antioxidative properties of oat meal, the vitamin and carotenes to be protected against oxidation are introduced into the interior of the seed kernels or pieces, more or less crushed, of seed kernels of which the grits consist, being dissolved in the fatty contents of this substance. The protective constituents of the product are thus present in a very great excess over the substances to be protected, which results in an enormous increase in keeping qualities.

The nutritive qualities of the grits or groats produced according to the present invention may be further increased by intermixing the grits with minerals salts especially with calcium phosphate, for instance precipitated calcium phosphate  $CaHPO_4$ . It has been found that cereal grits, especially oat grits, without this addition, have a very undesirable rachitogenic influence on young growing animals fed thereby, which influence may, however, be perfectly removed by the addition of the said salt or of other mineral salts or salt mixtures containing the calcium base and phosphoric acid in the same proportion.

With these general statements of the objects and purposes of my invention in view I will now proceed to describe the particular embodiment thereof and the manner in which my invention is carried out, and it will be understood that while I have described what may be considered as a preferable embodiment of my invention I do not limit myself to the precise conditions and proportions herein set forth as they may be varied by those skilled in the art in accordance with the particular purposes for which they are intended and the conditions under which they are to be utilized.

In carrying my invention into effect I may add to the grain from which the shales have been removed, a solution of carotene and vitamin A in arachide oil or another similar oil, and pul-

verous precipitated calcium phosphate  $\text{CaHPO}_4$ . The said solution will normally be added in such an amount that 1 gram of grit will contain 8-12 international vitamin A units, preferably half of them in the form of carotene and the balance as vitamin. The concentration must preferably be selected so that the grit must take up 1% or less of the oil in order to obtain the vitamin content

desired. The exact concentration will then depend upon the porosity etc. of the grain. The amount of calcium phosphate is preferably 1% calculated upon the weight of the grain.

I wish it to be understood that I do not desire to be limited to the exact details and proportions described.

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