should be continued until the test procedure may be followed without the release of fat. The release of fat in the water system is a visual determination that can be readily made by those skilled in the art.

The proportions of the various constituents (edible particles, binder and water) may vary considerably. The proportion of the constituents (oil and film-former) making up the binder may also vary. In general, however, the upper limit of edible particles is about 80% by weight of the food bar. The preferred upper limit is about 75%. The lower limit of edible particles in the food bar is about 10% when the edible particles comprise a nutritive food or a filler and about .25% to .5% of the weight of the bar when the edible particles comprise a flavoring or flavor imparting concentrate, but it is preferred that the bar contain from about 30 to about 75% by weight of edible particles.

Most preferred bar compositions have a density greater than .5 gm. per cc. Water is preferably used in the amount of about 5% by weight of the bar and preferably from 2–6%.

Binder (oil and film-former) should be provided in a quantity that comprises about 20–99.75% by weight of the bar.

The upper limit of fat in the binder is about 80% of the weight of the binder and the lower limit is about 10%. The dry weight of the film-former exclusive of fillers as extenders can comprise about 5–90% of the dry weight of the binder and preferably between 15 and 35% of the binder. Water should be present in the amount of from about 3% if the binder is dry to 50% if the binder is hydrated. Generally, it is preferred that the finished bar contain less than 10% moisture and the optimum moisture content is about 5% by weight based on the total weight of the food bar but up to 20% can be used if desired but when such large amounts of water are used enzymatic or bacterial degradation can be a problem in long term storage.

In one preferred manufacturing process an aqueous dispersion is made by adding the film-former, fat and sucrose to a minimum amount of water (the least amount required to produce a suspension) which is ordinarily about 15 parts of water per 100 parts of solids. Mixing can be carried out in any conventional mixer such as a Hamilton Beach or Hobart mixer until a thick gel is formed. When food particles are used in the formulation, about 20% of the hydrated binder is mixed with about 80% of the solid food particles on a weight basis and the resulting mixture is either formed or subjected to substantial pressure if greater hardness is desired into the shape of a food bar. The product is then ready for packaging but, if desired, it can be dried by placing it in a oven prior to packaging.

In another preferred process in accordance with the invention the preparation of the binder is begun in the same manner described in the preceeding paragraph except that 50 parts of water are used rather than 15 parts. More or less water can be used to properly adjust the viscosity of the resulting dispersion until it can be pumped to a spray drier of a suitable known construction such as a spray drier manufactured by the Blaw-Knox Company to produce a white, free-flowing powder. If food particles are used in the composition the powder is dry blended with the food particles at this point. The binder with or without food particles is then mixed with the minimum amount of water required to cause the surfaces thereof to become adhrent, i.e., tacky. The particles are then placed in a press and subjected to pressure to form a food bar. Since the moisture level of the finished bar is relatively low no further drying is required in most instances. Moreover, the hardness of the finished product can be more precisely controlled than products manufactured in accordance with the preceding paragraph. The product formed in accordance with this second manufacturing procedure also has the advantage of rehydrating more readily and more quickly. As a result they can be more easily chewed and more easily mixed with water if they are to be used as a rehydrated food such as soup, pudding or a beverage as the case may be.

When the bar is to be formed, the binder and edible food particles are mixed and placed in a mold cavity of suitable known construction. The molding pressure can vary from about 25 to 1000 p.s.i. and preferably between about 250 to 750 p.s.i. The molding time can vary from about .25 second to any desired time period. For most purposes, from about 1–10 seconds is preferred.

The invention may be appropriately illustrated by the following examples in which all amounts are set forth as percentages by weight.

EXAMPLE I

The following binder formulation was made:

	Percent
Nonfat milk solids	14.8
Lard flakes	14.8
Sucrose	18.7
Water	51.7

The lard flakes were heated in a steam jacketed kettle to 160° F. to completely melt them. The nonfat milk solids and sucrose were added and mixed with the melted lard flakes. About half (53.6%) of the water was added with rapid agitation. The mixture was then pumped through an impeller mixer known as an Oakes mixer which is manufactured by the Oakes Co., Inc., of Islip, N.Y., and agitated for 35 minutes. The remainder of the water was added to reduce the viscosity for spray drying. The material was pumped under pressure of 1000 to 1200 p.s.i. through a spray nozzle of a horizontal spray dryer manufactured by the Blaw-Knox Mfg. Co., Inc., of Pittsburgh, Pa. The inlet air temperature was 230°–240° F. and the outlet air temperature was 170°–175° F. The resulting product was a stable, free flowing white powder.

The spray dried dispersion was used to form a food bar consisting of: edible particles 52%, binder 45%, water 3% according to the following procedure. Food bars were made in which corn flakes, wheat flakes, rice krispies, and graham crackers comprised the edible particles. The edible particles and binder were mixed at high speed, using a Hobart mixer for a period of three to four minutes, until the maximum dimension of the edible particles was 1/16 to 1/8". The Hobart mixer was set at No. 2 speed and the water was slowly added while mixing continued. 40 gram units of the resulting free flowing mixture were placed into 2" x 4" dies and pressed into a bar under 125 p.s.i. pressure. Upon release from the die, the bars were satisfactory, but after drying for 20 minutes in an air circulating oven at 50° C., their cohesive strength was improved.

EXAMPLE II

A binder formulation was made as follows:

	Percent
Nonfat milk solids	25.8
Cottonseed oil	25.8
Sucrose	25.8
Glycerin	6.5
Water	16.1

The stable dispersion was formed by placing the cottonseed oil in a Waring Blendor, adding the nonfat milk solids and sucrose and mixing. The glycerin was dissolved in the water and the solution was added to the material in the mixer. A stable dispersion was formed with continued mixing at high speed for one minute.

A corn flake bar was made with the above dispersion, as follows: 34.8 parts of the above dispersion was mixed with 65.2 parts of corn flakes in a Hobart mixer. The materials were mixed at No. 3 speed for two minutes. 30 gram units were placed into a 2" x 4" mold and subjected to 250 p.s.i. pressure. After removal from the