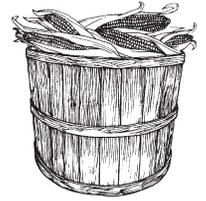




Corn - A Golden Treasure



A bushel of dent corn weighs 56 pounds (25 kg) and contains approximately 90,000 kernels. These can be broken down into starch, solubles, gluten, hulls, and germ (heart of kernel) to make: 33 pounds (15 kg) of sweetener or 31 pounds (14 kg) of starch or 2.5 gallons (9.5 L) of ethanol plus 12 pounds (kg) of animal feed, 3 pounds (1.36 kg) of gluten meal, and 1.5 pounds (.68 kg) of corn oil. By processing and refining, a bushel of corn can be used in the following ways:

33 Pounds (15 kg) of Sweetener CORN SYRUP

Food and Drug Uses:

Baby food
Bakery products (bread, rolls, biscuits, doughnuts, pies, cakes, cookies, pretzels)
Beverages, brewed (beer, ale, etc.)
Beverages, carbonated
Catsup, chili sauce, tomato sauce
Cereals, prepared
Cheese spread and foods
Chewing gum
Chocolate products
Condensed milk, sweetened
Confectionery
Cordials and liquors
Desserts
Eggs, frozen or dried
Extracts and flavors
Frosting and icings
Fruit butters and juices
Fruits (canned, candied, fillings, frozen, etc.)
Fruity drinks
Ice cream, water ices, and sherbets
Jams, jellies, marmalades, and preserves
Licorice
Malted products
Marshmallows and related products
Meat products (sausage, etc.)
Medicinal preparations (drugs, pharmaceuticals)
Mixes, prepared (cake, pie fillings, etc.)
Non-dairy creamers
Peanut butter
Pickles and pickle products
Salad dressing
Sauces (seasoning, specialty, etc.)
Seafood, frozen
Syrups (table, chocolate, cocoa, fruit, medicinal, soda fountain, cordials, etc.)
Soups, dehydrated
Toppings
Vinegar

Industrial Uses:

Adhesives (plasticizing agent)
Chemicals
Dyes and inks
Explosives
Leather tanning (chrome process)
Metal plating
Paper, glassine, and parchment
Plasticizer
Shoe polish
Rayon
Textiles, for finishing
Tobacco and tobacco products

DEXTROSE

Food and Drug Uses:

Antibiotics
Baby foods
Bakery products
Berries, canned and frozen
Beverages, brewed (beer, ale, etc.)
Beverages, carbonated
Breakfast foods
Caramel color
Cheese foods and spreads
Chewing gum
Chocolate products
Citrus juices
Coloring, pure food mix
Confectionery
Cordials, liqueurs and brandy
Cream, frozen
Dairy products
Desserts
Dietetic preparations
Distillation products
Doughnuts (cake, yeast)
Drugs (fermentation process)
Eggs, frozen or dried
Fish, pickled
Flavoring extract
Food acids (citric, ale)
Fruit juices

Fruits and vegetables, canned
Fruits (candied, glaze, frozen)
Gelatin desserts
Ice cream, water ices, and sherbets
Infant and invalid feeding
Jams, jellies, marmalades, and preserves
Lactic acid
Meat products (bacon, bologna, hams, sausage, hot dogs, mincemeat)
Medicinal preparations (intravenous injections, pills, tablets, drugs, etc.)
Mixes, prepared (cake, icings and frostings, infant foods, pie fillings, toppings, etc.)
Mouthwash
Peanut butter
Peas, canned
Pectin, fruit
Pickles and pickle products
Powders (ice cream, prepared dessert, pudding, punch)
Sauces (catsup, tomato, etc.)
Seasoning mixes, dry
Sorbitol (in candies, toothpaste, etc.)
Soups, dehydrated
Spices and mustard preparations
Syrups (table, fountain, medicinal, etc.)
Toothpaste
Vinegar
Wine
Xanthan gums
Yeast

Industrial Uses:

Acids, commercial (lactic, acetic, gluconic)
Adhesives
Boiler compounds
Chemicals (calcium lactate, sodium lactate)
Chemicals, organic
Dyes
Electroplating and galvanizing
Enzymes
Explosives

Fermentation products
Florists' preparations
Leather tanning
Mannitol
Paper
Rayon
Rubber (cold process)
Sizing materials
Sorbitol
Textiles, dyeing and finishing

31 Pounds (14 kg) of Starch CORN STARCH

Food, Drug, or Cosmetic Uses:

Antibiotics
Aspirin
Baby foods
Bakery products (bread, rolls, cakes, pies, crackers and cookies)
Baking powder
Beverages, brewed (beer, ale, etc.)
Chewing gum
Chocolate drink
Confectionery
Cosmetics
Desserts (puddings, custards, etc.)
Drugs and pharmaceuticals
Flours, prepared (including prepared mixes)
Food and drug coatings
Gravies and sauces
Mixes, prepared (pancake, waffle, cake, candy, etc.)
Mustard, prepared
Pie filling
Precooked frozen meals
Salad dressing
Soups

Cleaners
Sugar, powdered
Vegetables, canned

Industrial Uses:

Abrasive paper and cloth
Adhesives (glues, pastes, mucilages, gums)
Batteries, dry cell
Binder of binding agents
Board (corrugating, laminating, solid fiber board, cardboard)
Boiler compounds
Briquettes
Ceramics (as clay binder)
Chemicals
Cleaners, detergents
Coatings on wood, metal, and paper
Color carrier (in paper and textile printing)
Cord polishing, sizing
Cork products
Crayon and chalk (as a binder)
Dispersing and standardizing agent
Dressing, surgical
Dyes (as bodying agent, carrier diluent, etc.)
Fermentation processes
Fiber glass size
Fireworks
Insecticide powders
Insulating material (glass wool, rock wool)
Lubricating agents
Oilcloth
Oil-well drilling (drilling mud)
Ore refining (electrolytic reduction process, flotation process, etc.)
Paints (cleaning compounds, cold water and latex paints, poster, lacquer, etc.)
Paper and paper products
Photographic films (antihalation powder)
Plastics (molded)
Plywood (interior)
Printing
Protective colloids (emulsions)
Textiles (warp sizing and finishing)
Tile, ceiling
Tire, rubber
Wallboard and wallpaper
Water recovery, industrial

2.5 Gallons of Ethanol

Alcoholic beverages
Industrial alcohol
Motor fuel extender

**12 Pounds of Animal Feed and 3 Pounds of Gluten Meal
CORN GLUTEN AND HULLS**

Products Used by Livestock and Poultry:

Corn germ meal
Corn gluten feed
Corn gluten meal
Corn oil byproducts
Corn sugar (crude and refined)
Hydrol (corn-sugar molasses)
Steepwater for feed (condensed fermented corn extractives)

Other Uses:

Amino acids
Fur cleaner
Zein and other protein products

**1.5 Pounds of Corn Oil
CORN OIL FROM GERM**

Food and Drug Uses:

Capsules for vitamins and medicines
Cooking oil
Margarine
Mayonnaise
Potato chips
Salad dressing
Sauces, seasoning
Shortening
Soups

Industrial Uses:

Chemicals and insecticides
Lecithin (for pharmaceuticals, cosmetics, linoleum, printing, inks, etc.)
Paint and varnish
Rubber substitutes
Rust preventive (surface coatings)
Soap
Soluble oil (leather and tanning use)
Textiles

Other Uses of Corn:

HIGH FRUCTOSE CORN SYRUP

(FROM CORN SYRUP)

Food Uses:

Bakery products
Canned juices
Canned fruits

DEXTRINS (FROM CORNSTARCH)

Industrial Uses:

Adhesives (glues, pastes, mucilages, gums)
Bookbinding
Briquettes
Candies
Ceramics
Cord polishing
Core binder (castings, mold)
Cork products
Crayons and chalk (as binder)
Dyes (dry, cake, etc.)
Envelopes
Fireworks
Inks, printing
Insecticides
Insulation, fiber glass
Labels
Leather
Linoleum
Magazines
Matches (on head and side of box)
Oil-well drilling
Ore separation
Paints (cold water, poster, etc.)
Paper and paper products
Plastics (molding)
Plywood
Sandpaper
Shoes (counter pastes, polish, etc.)
Silvering compounds
Soaps
Straws (drinking)
Textiles, sizing, finishing and printing
Twine, cord, string, etc.
Wallboard and wallpaper
Window shades and shade cloth

Condiments
Confectionery products
Frozen desserts
Jams, jellies, and preserves
Soft drinks
Wine
Yeast

MALTODEXTRINS (FROM CORNSTARCH)

Food Uses:

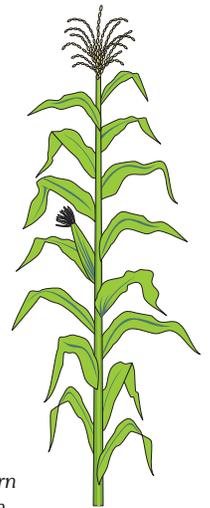
Bakery mixes
Beverage powders
Dehydrated foods
Dry soup mixes
Gum confections
Icings and glazes
Instant tea
Instant breakfast foods
Low calorie sweeteners
Marshmallows
Nougats
Pan coatings
Sauce and gravy mix
Snack foods

**HYDROL
(CORN-SUGAR MOLASSES)**

Organic acids
Organic solvents
Tobacco
Leather tanning

**SOLUBLES
(STEEPWATER)**

Antibiotics
Chemicals
Pharmaceuticals
Yeast



Adapted from National Corn Grower's Association. Corn Curriculum. Unit 9: Feed Your Face!