

| Food           | Milk & Dairy                                                                                                                                                  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Classification | Immediate consumption: Natural,sanitised and certified<br>Preserved milks: dried or heat-treated<br>Special milks: skimmed, lactose-free, enriched, fermented |
| Consumption    | 70L milk & 35kg by-products                                                                                                                                   |
| Composition:   |                                                                                                                                                               |
| Water          | 87%                                                                                                                                                           |
| Fats           | 3-5%   C16:0, C18:0, SCFA, C18:1, Phospholipids, Unsaponifiable                                                                                               |
| Carbs          | 4-6%   All Lactose                                                                                                                                            |
| Fiber          | -                                                                                                                                                             |
| Proteins       | 3-4%   Caseins (α, β, κ) > Whey proteins (Albumins & Globulins)                                                                                               |
| Vitamins       | Group B and Vitamin A & D                                                                                                                                     |
| Minerals       | P, Ca, K, Na, Cl, Mg, Zn                                                                                                                                      |
| By-products    | Evaporated→concentrated →condensed(sugar)/powdered<br>Yoghurt, kefir, kumiss   Cream, Butter and Cheese                                                       |

| Meat & Organs                                                           |
|-------------------------------------------------------------------------|
| White & Red fibers, Myo (deoxi, oxi, meta) & Fe                         |
| Animal, parts, conservation (fresh, refrigerated, frozen...)            |
| Rigor mortis, PSE & DFD → maturation                                    |
| 46kg                                                                    |
| 60-80%                                                                  |
| 2-20%   Extracellular (subcutaneous), Intermuscular and Intramuscular   |
| 0,5-1-5%   Meat quality and glycogen content                            |
| -                                                                       |
| 16-20%   myofibrillar, sarcoplasmic, connective, Creatine and free aa's |
| Group B and 1Vitamin A & D                                              |
| P > K > Na > Mg > Ca > Fe                                               |
| Cured: Chorizo(chopped), cured ham(whole), Not treated: hamburger       |
| Heated: cooked ham,turkey breast, mortadella, cooked sausages           |

| Fish & Seafood                                                         |
|------------------------------------------------------------------------|
| Fresh, frozen, low salted, high salted, smoked                         |
| Fresh, frozen, dehydrated or lyophilised, cooked                       |
| No to little Rigor Mortis                                              |
| 24kg   Fish to seafood 2:1                                             |
| 70-80%   more on seafood. Microbiology instability                     |
| <1-16%   TG 98%(25-75), P-Lipids 1,5%, Unsaponifiable (Cho 50mg)       |
| 0-1%   Glycogen → Short Alkaline Rigor Mortis                          |
| -                                                                      |
| 16-22%   Similar to meat, they lack some aa's. NPNS (creatine, amines) |
| Group B and Vitamin A & D in oily fishes                               |
| K > P > Na = Cl > Ca > Mg > Fe > Zn > Cu > I                           |
| Surimi, caviar, fishmeal and omega-3 fish oil                          |

| Eggs                                                                |
|---------------------------------------------------------------------|
| 0 - organic, 1 - free-range, 2- cage-free and 3 - cage              |
| Shell, white and yolk   A or B   S, M, L, XL                        |
| Fresh, refrigerated, preserved, defective, damaged                  |
| 9.7kg                                                               |
| 74% → 87%   50%                                                     |
| 11% → 0,2%   32%   C18:0 & Essentials 60%, P-lipids, Cho 500mg      |
| 0,5% → 0,7%   0,3%  Free glucose and glucoproteins                  |
| -                                                                   |
| 13% → 11%   16%   Highest Quality, Albumins, lipoproteins           |
| Group B and all the fat soluble vitamins A, D, E, K                 |
| P, K, Na, S > Fe, Zn, Cu, Se, I                                     |
| Liquids, Dried, lyophilised, dried or desiccated, Frozen and Cooked |

|                       |
|-----------------------|
| <b>Food</b>           |
| <b>Classification</b> |
|                       |
|                       |
|                       |
| <b>Consumption</b>    |
| <b>Composition:</b>   |
| <b>Water</b>          |
| <b>Fats</b>           |
| <b>Carbs</b>          |
| <b>Fiber</b>          |
| <b>Proteins</b>       |
| <b>Vitamins</b>       |
| <b>Minerals</b>       |
| <b>By-products</b>    |

| Fats                                                                            |  |
|---------------------------------------------------------------------------------|--|
| At 20°C Fats are solid                                                          |  |
| Animal: Lard and tallow   Vegetable: Coconut, palm oil and butter, cocoa butter |  |
| Hydrogenated, processed an                                                      |  |
|                                                                                 |  |
| 12kg                                                                            |  |
| 0%                                                                              |  |
| 100%   Saturated fats are the majority                                          |  |
| 0%                                                                              |  |
|                                                                                 |  |
| 0%                                                                              |  |
| Some fat-soluble vitamins if not refined                                        |  |
| Maybe some minerals if not refined                                              |  |
|                                                                                 |  |
| Refining, Hydrogenation, Interesterific                                         |  |

| Oils                                                                         |
|------------------------------------------------------------------------------|
| At 20°C Oils are liquid                                                      |
| Animal: fish oil   Vegetable: oilseed and olive (pomace) oil                 |
| d rendered fats                                                              |
|                                                                              |
| 13.3L   8.9L Olive oil                                                       |
|                                                                              |
| 0%                                                                           |
| 100%   1 Insaturated fats. Olive oil: Oleic > Palmitic > Linoleic > Estearic |
| 0%                                                                           |
|                                                                              |
| 0%                                                                           |
| Some fat-soluble vitamins if not refined                                     |
| Maybe some minerals if not refined                                           |
|                                                                              |
| ation and Fractionation                                                      |

| Food                  | Grains                                                                                                                                         |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Classification</b> | Rice, oats, barley, rye, maize, wheat and buckwheat<br>Hull, pericarp, seed (endosperm and germ)<br>Amaranth, quinoa, chia, canihua, buckwheat |
| <b>Consumption</b>    | Bread 31kg, Pasta 4kg, Rice 3.8kg, Pastries 5.8kg                                                                                              |
| <b>Composition:</b>   |                                                                                                                                                |
| <b>Water</b>          | 10-14%   Water content as dried                                                                                                                |
| <b>Fats</b>           | 2-3% Oats 6% linsat>Sat. lecithin,unsaponifiable                                                                                               |
| <b>Carbs</b>          | 65-85%   Starch: amylose 25% and amylopectin 75%                                                                                               |
| <b>Fiber</b>          | 2-16%   Cellulose, β-glucans, inulin and resistant starch                                                                                      |
| <b>Proteins</b>       | 8-12%   Endosperm 1 Quality, Lysine deficiency, Gluten                                                                                         |
| <b>Vitamins</b>       | Group B and Vitamin E & provitamin A                                                                                                           |
| <b>Minerals</b>       | K > P > Mg > Ca > Na > Fe > Zn > Mn > Cu > Se                                                                                                  |
| <b>By-products</b>    | Flour, semolina, bran, wheat germ. Bread and Pasta<br>Baked goods: Yeast, chemical, air and partially-grown                                    |

| Legumes                                                                  |
|--------------------------------------------------------------------------|
| lentil, chickpea, lupin, bean, pea, broad bean, soya bean, peanut, carob |
| funicle, testa: cotyledon (macros) and radicle & plumule (micros)        |
| †Fat or †Starch   Extra, Category I, Category II                         |
|                                                                          |
| 3.9kg                                                                    |
|                                                                          |
| 8-12%   Water content as dried                                           |
| 1-3% Soy 20% Chickpea 5%   TG, P-lipids and unsaponifiable               |
| 60-85%   45-60% Starch (not in soy), <3% Sugars                          |
| 10-25%   Cellulose and oligosaccharides                                  |
| 17-25% Soy 35%   Methionine deficiency, Albumins, Globulins, Glutelins   |
| Group B and Vitamin E & provitamin A                                     |
| K, P, Mg, Ca > Fe, Zn, Mn, Cu, Se... Antinutrients like Phytic acid      |
|                                                                          |
| Peeled legumes, legume purees and legume flours                          |
| Soy: oil, beverage, tofu, flour, protein, sprouts, sauce, tempeh & miso  |

| Nuts                                                    |
|---------------------------------------------------------|
| Fruits with less than 50% of water                      |
| Almond, walnut, cashew, hazelnut, pistachio, peanut...  |
| pine nuts, macadamia nuts, Brazil nuts, sunflower seeds |
|                                                         |
| 3.8kg                                                   |
|                                                         |
| < 10%                                                   |
| 40-70%   Insat > Sat. Phytosterols 25mg, P-lipids       |
| 5-22%   Starch 2-4%, Sugar 5-10%                        |
| 3-10%                                                   |
| 15-25%   Contain a lot of arginine (vasodilator = ↓CD)  |
| High in Vitamin E and Vitamin B9 mainly                 |
| K, Mg, Ca > Cu, Se... Antinutrients                     |
|                                                         |
| Peanuts are legumes but are consumed as nuts            |
| Same for Sunflower seeds                                |

| Food           |
|----------------|
| Classification |
|                |
|                |
| Consumption    |
| Composition:   |
| Water          |
| Fats           |
| Carbs          |
| Fiber          |
| Proteins       |
| Vitamins       |
| Minerals       |
| By-products    |

| Veggies                                                                                       |
|-----------------------------------------------------------------------------------------------|
| Greens, vegetables and legumes                                                                |
| Bulbs, cabbage, fruits, leaves, inflorescence, green legumes, peponids, roots and young stems |
| Fresh, dried, dehydrated or frozen. Extra, Category I, II and III                             |
|                                                                                               |
| 64kg                                                                                          |
|                                                                                               |
| 85-95%                                                                                        |
| < 0.2-0.3%   Present in seeds                                                                 |
| 3-10%   < 2% Starch, < 5% Sugar and the rest are Oligosaccharides                             |
| 1-3%   Classic fiber: Insoluble > Soluble                                                     |
| As Nitrogen compounds 1-5%   Non proteic aa's and amines, Proteins 35-80%                     |
| Group B, †Vit C, Vit K, E and provitamin A                                                    |
| K, P, Mg, Ca > Fe, Zn, Mn, Cu... Antinutrients like Oxalates                                  |
|                                                                                               |
| Dried, frozen, fermented, canned, in vinegar, salted, juices, powdered, puree                 |
| Pickles, sauerkraut and extracts                                                              |

| Tubers                                              |
|-----------------------------------------------------|
| Potato, sweet potato, yucca, yam and tiger nuts     |
| Fresh (ordinary, quality, peeled)                   |
| Imported (old or new), introduced or local          |
|                                                     |
| 32kg                                                |
|                                                     |
| 77-82%   70-75%                                     |
| < 0,5%                                              |
| 13-18%   Starch > Sugars   20-25%                   |
| 1,5-2%   3-4,5%                                     |
| 1,5-2,3%                                            |
| Group B, Vit C and provitamin A   Less Vit C        |
| K, P, Mg, Ca > Fe, Zn, Mn, Cu   More Fe 2mg         |
|                                                     |
| Preserved, dehydrated, frozen                       |
| Fried, flours, starch additive, granules and flakes |

| Fruits                                                                                                     |
|------------------------------------------------------------------------------------------------------------|
| Drupe, knob, berry, peponid, hesperidium, polydrupe, syconium and sorosis                                  |
| Pulpy, dry and oleaginous. Fresh, dried, dehydrated or frozen                                              |
| Extra, Category I, II, III. Climacteric or not. Tropical or not                                            |
|                                                                                                            |
| 99kg and BL as juices                                                                                      |
|                                                                                                            |
| 85-95%   70-75% in bananas, figs and guava                                                                 |
| < 0,5%   15-30% Avocado and olive, 30-40% Coconut.                                                         |
| 5-18%   More in bananas and figs                                                                           |
| 1-3%   Soluble > Insoluble                                                                                 |
| As Nitrogen compounds: 0,5-1,5%   Proteins 35-75%                                                          |
| Group B, 1 Vit C, Vit K, E and provitamin A                                                                |
| K, P, Mg > Fe, Zn, Mn                                                                                      |
|                                                                                                            |
| In syrup, compotes, purees, candied fruit, glazed fruit, marmalade, jam & jelly                            |
| Fresh juices, natural juices, preserved juices and nectars. Tomato, juice, concentrated, sauce and ketchup |

| Food           | Water                                                       |
|----------------|-------------------------------------------------------------|
| Classification | water for human consumption                                 |
|                | Bottled water: natural mineral water, spring water,         |
|                | prepared drinking water and packaged public water supplies. |
| Consumption    | 67L                                                         |
| Composition:   |                                                             |
| Water          | close to 100%                                               |
| Fats           | -                                                           |
| Carbs          | -                                                           |
| Fiber          | -                                                           |
| Proteins       | -                                                           |
| Vitamins       | -                                                           |
| Minerals       | Some minerals (composition table only in natural mineral)   |
| By-products    |                                                             |

| Beverages                                                |
|----------------------------------------------------------|
| Prepared drinking water with additives                   |
| May contain CO <sub>2</sub> , sugar, caffeine or quinine |
| seltzer water, flavoured, soda, soft drinks              |
|                                                          |
| 39L                                                      |
|                                                          |
| Max 94% as they need to have 6% of "juice"               |
| -                                                        |
| Some may contain sugar > 6%                              |
| -                                                        |
| -                                                        |
| -                                                        |
| Some minerals depending on the water                     |
| Soft drinks: fruit, extract, flavoured or mixed          |

| Wine                                                            |
|-----------------------------------------------------------------|
| Mono or multi-variety. Dry, semi-dry, semi-sweet, sweet         |
| Quality wine or not. CO <sub>2</sub> ; still or sparkling.      |
| White, red, rosé, claret. Young, Crianza, Reserva, Gran reserva |
| 10L                                                             |
| 85%                                                             |
| -                                                               |
| Alcohol <b>9-15%</b>   Sugar <b>0,1-2 g/L</b> Red > White       |
| -                                                               |
| -                                                               |
| Some vitamins                                                   |
| Some minerals                                                   |
| May contain additives: SO <sub>2</sub>                          |

| Beer                                                               |
|--------------------------------------------------------------------|
| Barley malt, yeast, hops and water                                 |
| cereal beer, extra, special, low-alcohol, non-alcoholic, dark beer |
| Lager (<10°C -10D), Ale (<20°C-5D) or Spontaneous fermentation     |
| 23L                                                                |
| 94-94%                                                             |
| -                                                                  |
| Alcohol <b>5%</b>   Sugar <b>4%</b>                                |
| -                                                                  |
| -                                                                  |
| Some vitamins                                                      |
| Some minerals                                                      |
|                                                                    |

| Distilled beverages                                                                          |
|----------------------------------------------------------------------------------------------|
| Naturals: simple spirit 30-80°, distilled alcohol 80-96°, rectified alcohol (chemicals) >96° |
| Spirit drinks: compound spirits >30°, liqueurs >15° and aperitifs without cuvée              |
| 0,7L                                                                                         |
| it depends on the type of distilled beverage                                                 |
| Alcohol > <b>30%</b>                                                                         |
|                                                                                              |
| Very low to no vitamins                                                                      |
| Very low minerals                                                                            |
|                                                                                              |

| Food           | Sugar                                |
|----------------|--------------------------------------|
| Classification | raw, refined, molasses               |
|                | icing and caramelised sugar,         |
|                | invert sugar, syrups and lactose     |
| Consumption    | 3.6kg                                |
| Composition:   |                                      |
| Water          | it depends... close to <b>0%</b>     |
| Fats           |                                      |
| Carbs          | Close to <b>100%</b> sugar           |
| Fiber          |                                      |
| Proteins       |                                      |
| Vitamins       | Very low to no vitamins              |
| Minerals       | Very low minerals                    |
| By-products    | candies, confectionery, chewing gum, |
|                | sugared almonds, marzipan and nougat |

| Honey                                                        |
|--------------------------------------------------------------|
| Nectar to honey, Raw or pasteurised honey                    |
| Blossom or honeydew honey, Direct or industrial              |
| Comb honey, honeycomb pieces, drained, centrifuged, pressed. |
| 0.4kg                                                        |
| < 20%                                                        |
| -                                                            |
| 85%   32% Glucose, 39% Fructose, <=5% Sucrose                |
| -                                                            |
| -                                                            |
| Some vitamins                                                |
| Some minerals                                                |
| Nougat                                                       |
|                                                              |