

Grains, Legumes and nuts

When hydrated they're similar to animal products in terms of kcal

Nuts 25g/day not too much ↑fats

More polyunsaturated are walnuts

Starch in grains > in legumes

↑Starch rice ↓starch Oats

White Flour is done without outer layers: pericarp and germ (Refined)

bread & pasta difference is fermentation and hydration

bread products can have ↑sugars and ↑fats

Soy is a legume with similar properties to nuts (no starch, ↑fats, ↑protein)



Veggies, tubers and fruits

Very similar with ↑H2O in all of them

They change in sugar and starch contents

Very important for Vitamins and Minerals

Tubers having starch, contain proteins. No starch → Nitrogen compounds

Sulphuric compounds and oxalates are some antinutrients of veggies

Vitamin K is an anticoagulant and it's a problem for some people

Food	Grains	Legumes	Nuts
Classification	Rice, oats, barley, rye, maize, wheat and buckwheat	lentil, chickpea, lupin, bean, pea, broad bean, soya bean, peanut, carob	Fruits with less than 50% of water
	Hull, pericarp, seed (endosperm and germ)	funicle, testa: cotyledon (macros) and radicle & plumule (micros)	Almond, walnut, cashew, hazelnut, pistachio, peanut...
	Amaranth, quinoa, chia, canihua, buckwheat	↑Fat or ↑Starch Extra, Category I, Category II	pine nuts, macadamia nuts, Brazil nuts, sunflower seeds
Consumption	Bread 31kg, Pasta 4kg, Rice 3,8kg, Pastries 5,8kg	3,9kg	3,8kg
Composition:			
Water	10-14% Water content as dried	8-12% Water content as dried	< 10%
Fats	2-3% Oats 6% Insat>Sat. lecithin,unsaponifiable	1-3% Soy 20% Chickpea 5% TG, P-lipids and unsaponifiable	40-70% Insat > Sat. Phytosterols 25mg, P-lipids
Carbs	65-85% Starch: amylose 25% and amylopectin 75%	60-85% 45-60% Starch (not in soy), <3% Sugars	5-22% Starch 2-4%, Sugar 5-10%
Fiber	2-16% Cellulose, β-glucans, inulin and resistant starch	10-25% Cellulose and oligosaccharides	3-10%
Proteins	8-12% Endosperm ↓Quality. Lysine deficiency. Gluten	17-25% Soy 35% Methionine deficiency. Albumins, Globulins, Glutelins	15-25% Contain a lot of arginine (vasodilator = ↑CD)
Vitamins	Group B and Vitamin E & provitamin A	Group B and Vitamin E & provitamin A	High in Vitamin E and Vitamin B9 mainly
Minerals	K > P > Mg > Ca > Na > Fe > Zn > Mn > Cu >Se	K, P, Mg, Ca > Fe, Zn, Mn, Cu, Se... Antinutrients like Phytic acid	K, Mg, Ca > Cu, Se... Antinutrients
By-products	Flour, semolina, bran, wheat germ. Bread and Pasta	Peeled legumes, legume purees and legume flours	Peanuts are legumes but are consumed as nuts
	Baked goods: Yeast, chemical, air and partially-grown	Soy: oil, beverage, tofu, flour, protein, sprouts, sauce, tempeh & miso	Same for Sunflower seeds

Food	Veggies	Tubers	Fruits
Classification	Greens, vegetables and legumes	Potato, sweet potato, yucca, yam and tiger nuts	Drupe, knob, berry, peponid, hesperidium, polydrupe, syconium and sorosis
	Bulbs, cabbage, fruits, leaves, inflorescence, green legumes, peponids, roots and young stems	Fresh (ordinary, quality, peeled)	Pulpy, dry and oleaginous. Fresh, dried, dehydrated or frozen
	Fresh, dried, dehydrated or frozen. Extra, Category I, II and III	Imported (old or new), introduced or local	Extra, Category I, II, III. Climacteric or not. Tropical or not.
Consumption	64kg	32kg	99kg and 8L as juices
Composition:			
Water	85-95%	77-82% 70-75%	85-95% 70-75% in bananas, figs and guava
Fats	< 0,2-0,3% Present in seeds	< 0,5%	< 0,5% 15-30% Avocado and olive, 30-40% Coconut.
Carbs	3-10% < 2% Starch, < 5% Sugar and the rest are Oligosaccharides	13-18% Starch > Sugars 20-25%	5-18% More in bananas and figs
Fiber	1-3% Classic fiber: Insoluble > Soluble	1,5-2% 3-4,5%	1-3% Soluble > Insoluble
Proteins	As Nitrogen compounds 1-5% Non proteinic aa's and amines. Proteins 35-80%	1,5-2,5%	As Nitrogen compounds 0,5-1,5% Proteins 35-75%
Vitamins	Group B, ↑Vit C, Vit K, E and provitamin A	Group B, Vit C and provitamin A Less Vit C	Group B, ↑Vit C, Vit K, E and provitamin A
Minerals	K, P, Mg, Ca > Fe, Zn, Mn, Cu... Antinutrients like Oxalates	K, P, Mg, Ca > Fe, Zn, Mn, Cu More Fe 2mg	K, P, Mg > Fe, Zn, Mn
By-products	Dried, frozen, fermented, canned, in vinegar, salted, juices, powdered, puree	Preserved, dehydrated, frozen	In syrup, compotes, purees, candied fruit, glazed fruit, marmalade, jam & jelly
	Pickles, sauerkraut and extracts	Fried, flours, starch additive, granules and flakes	Fresh juices, natural juices, preserved juices and nectars. Tomato, juice, concentrated, sauce and ketchup