Domesticated Grains and Legumes

Wheat is a major global crop traded more than any other, and the leading source of vegetable protein in the human diet. Wheat has more protein than any other cereal grain. Wheat is used to make flour for breads, cereal, pasta, couscous, and animal feed. It can be fermented to make beer and spirits. Wheat straw provides thatch for roofing houses.

Whole grain wheat can be milled to make whole wheat flour, or it can be refined to make white flour, leaving just the endosperm (see diagram). The by-products of this are bran and wheat germ. The whole grain contains vitamins, minerals, and protein, as well as dietary fiber, but white flour is mostly starch (carbohydrates). The bran is the outer skin of the seed. It contains fiber, B vitamins and antioxidants important to human nutrition. The germ is the portion of the plant that sprouts. It contains B vitamins, protein, minerals, and healthy types of fat. The endosperm is the germ’s food source and is the largest portion of the grain. It contains carbohydrate, protein, vitamins, and minerals. Refining wheat to make white flour removes 40% of the grain, leaving only the starchy part, which the body converts to sugars. When the bran and germ are removed, one quarter of the protein content is lost, along with key nutrients.

Grains like wheat, barley, rye, rice, and legumes (beans) are staples of the human diet. They were gathered in the wild by early people, and were among the most important domesticated crops during the Neolithic period after about 10,000 BCE.

Archaeologists and paleobotanists have discovered eight Neolithic “founder crops” that were the first domesticated plants, meaning plants that were changed from their wild state by human selection and cultivation. The eight “founder” crops are: two types of wheat (Emmer and Einkorn), barley, lentils, peas, chickpeas, bitter vetch, and the fiber crop flax. Flax is grown for linen fiber to make cloth and linseed oil for many uses.

According to evidence from sites such as Tell Abu Hureyra in modern Syria, early farming communities in the Fertile Crescent region of southwest Asia began systematic agriculture by planting seeds they had gathered regularly in the region, and beginning life in settled communities. Along with domestication of a group of animals—goats, sheep, and cattle—farming and animal husbandry spread from the Middle East to North Africa, India, Persia, and later to Europe. These founder crops made it possible for people to establish villages, towns and cities, founding societies that developed into civilizations. These crops could be planted on a large scale, and they could be stored for future use and trade.
Legumes or Pulses

Many kinds of legumes have been part of the Mediterranean diet for millennia. Chickpeas, lentils, fava beans, and peas are just a few. Most legumes are seeds that the plant produces in pods, as shown in the image of chickpeas below. Legumes are a good companion to grains in the human diet and in farming. They contain a lot of healthy vegetable protein, and they fertilize the soil by fixing nitrogen through their roots.

Dry beans and peas are rich in fiber and protein, but low in fat. They are also an excellent source of good starch that digests slowly in the body, keeping hunger away. They contain B vitamins and antioxidant substances that protect the body from disease. Legumes, grains, fruits and fats combine to make a complete diet that is inexpensive and promotes health.

Legumes can be dried and stored for long periods of time. They can be ground as flour for breads and soaked and cooked to make a nutritious paste such as hummus, combined with oil and herbs. They can be cooked in soups and stews, and serve as animal feed, especially for horses. Legumes have been found in archaeological sites in the Mediterranean region dating to the beginnings of agriculture, and they are mentioned as important and desirable sources of nutrition in the scriptures of several world religions, including Judaism, Christianity, and Islam.