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INTERNATIONAL YEAR OF PULSES

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The 68th UN General Assembly declared 2016 the International Year of Pulses (IYP). The Food and Agriculture Organization of the United Nations (FAO) has been nominated to facilitate the implementation of the Year in collaboration with Governments, relevant organizations, non-governmental organizations and all other relevant stakeholders.

Pulses are dry beans for consumption such as lentils, beans, peas and chickpeas; constitute a vital source of vegetable protein and amino acids for human consumption and are part of a healthy diet. Are plants that provide important crops for food security of much of the world's population, particularly in Latin America, Africa and Asia. Despite this, the nutritional value of vegetables is not recognized and is often scorned.

According to the FAO, the AIL 2016 aims to increase public awareness to the nutritional benefits of pulses as part of sustainable food production for food security and nutrition. The year will create a unique opportunity to encourage connections of the entire food chain in order to better utilize these proteins of vegetable origin, increase its production worldwide, make better use of crop rotations and trade challenges of legumes. But, because this UN deference to Pulses? Six ways to justify: Botanical, geographical, economical, nutritious, agronomical and environmental education.

Botanical. *Leguminosae* Juss. or *Fabaceae* Lindl is the third largest family of flowering plants-plants that have the seed within a developed ovary (fruit) – comprising

of 727 genres and 19,325 species, behind only the *Orchidaceae* with about 20,000 species of *Asteraceae* (*Compositae*) and approximately 25,000 species.

Recent studies of the phylogeny of the *Fabaceae* family established a consensus on their systematic Botany, dividing it into three subfamilies: *Mimosoideae,* and *Papilionoideae* (*Faboideae*) *Caesalpinioideae* subfamily. *Faboideae* is the largest with 476 genera and approximately 14000 species, in the *Mimosoideae,* meet 77 genera and approximately 3000 species, and the *Caesalpinioideae* is comprised of 170 genera and about 3,000 species.

Geographical. With the exception of Antarctica, all continents feature pulses in abundance. The vegetables are spread in the world in different habitats, latitudes and altitudes in different ecosystems; are also used as food in different cultures. The subfamily *Faboideae* is cosmopolitan, the other subfamilies *Mimosoideae* and *Caesalpinioideae,* occur mainly in tropical and subtropical regions.

Agronomical. The agricultural importance of pulses occurs by beneficial effects promoted on the ground, what has been observed for centuries. Theophrastus, who lived in the third century BC, wrote that the Greeks used the fava bean (*Vicia faba*) to enrich the soils. Already in the last century, in 1818, Sir Humphrey Davy (1778-1829), British chemist, wrote in "Agricultural Chemistry" to peas and beans seemed to prepare the soil for planting wheat and that the nitrogen in the matter of the two pulses seemed to derive from the atmosphere. In fact, in places in which pulses crops grow some extra nitrogen can be released into the soil, making it available to other plants. In modern agriculture, it is common practice to make the rotation of a cultivated plant not pulses, such as corn, with pulses, such as alfalfa. Sometimes, corn and soybean are utilized in rotation, as occurs in Brazil.

The roots of almost all pulses have from, showing bacteria of the genera symbiosis with *Bradirhizobium* and *Rhizobium*, which have the ability, by chemosynthesis, fix atmospheric nitrogen. This nitrogen is used in the formation of protein molecules, which are used also by pulses. In contrast, bacteria utilize sugars produced during photosynthesis by legumes, for their nutrition. Living in symbiosis both organisms multiply abundantly, even in soils with low fertility or in soils very poor in nitrogen and organic matter, to the point that other plants can't compete with them. Separately, each would lead a precarious life and/or succumb. The nodules are more frequent in the leguminous plants of the subfamily *Papilionoideae* (*Faboideae*). When the vegetables are harvested, nitrogen-rich roots remain in the soil, enriching it.

Nutritious. Pulses such as dry beans for consumption such as lentils, beans, peas, chickpeas, peanuts and lupine are some of the important pulses in cooking in various countries of the world, and so are remembered and very cultivated. Constitute a vital source of vegetable protein and amino acids for human consumption and are part of a healthy diet. Currently are responsible for higher vegetable oil consumption in human diet with soy. The jacatupé or potato bean (*Pachyrrhyzus bulbosus*), with roots of up to 15 kg, is perhaps the greatest source of protein of the African peoples.

Are also an important source of protein for animal feed either in the field or in confinement animal fodder such as bran. In confinement by the high protein content incorporating the feed. The main expectation of the use of pulses in pastures is the improvement of production animal protein supply for the increased production of meat and milk. In relation to the grassy grazing are important in partnership, not just by the forage value, but by reducing production costs, when compared with the exclusive pasture with grass and mineral nitrogen fertilization to. This benefit is reported as effect of the direct participation of legumes improving and diversifying the animal's diet and increased forage availability for nitrogen supply to the system, through its recycling and transfer to the grassy escort.

Economical. The economic potential of pulses is impressive because it is very sharp including food varieties, medicinal, ornamental, timber, fiber and oil-producing. Significant example of this family is that of soybean (Glycine max (l.) Merrill), is the leading oilseed crop produced and consumed in the world. Its importance lies in the fact, to be crushed, result in bran and oil. The first byproduct, for being rich in protein, is intended primarily for animal consumption, through elaborate rations. The second byproduct is intended especially for human consumption.

Brazil in these 45 years as growing soy producer, 1970 to 2015, has consolidated its position as the second largest producer of the oilseed crop and, today, the second largest exporter of bran and soybean in the world, after being the first exporter of oat bran for long years.

To fertilize the soil with nitrogen captured from the atmosphere, which is widely used in cultivation in Brazil, pulses play an important role in the economy of the acquisition of that chemical fertilizer, both at the stage of cultivation as after harvest, when nitrogen-rich roots remain in the soil, enriching it with this macro nutritional element for plants. Economically, its potential is quite sharp including varieties, food, medicinal, timber, fiber and oil producing ornamental, besides contributing with agriculture in soil enrichment.

Of pulses obtained multiple products for industrial use. The tannin, a substance used in the leather industry, is provided by genus and species. Dyes and dyes are extracted from Pau-brasil (*Caesalpinia echinata*) and various types of indigóferas, such as anileira, which provides the Indigo. Wood for carpentry and joinery obtained of angico and algarobeira. Cycoloy varnishes, like copal, extracted from the tree of the same name; glues and balms, as different species of copaiba and *Acacia arabica*, which extracts the Arabica. Don't forget that Brazil got its name from the species *Caesalpinia echinata* Lam. (Pau-brasil).

Environmental Education. From 1990, environmental education has undergone substantial modification by virtue of the incorporation of the concept of sustainable development and the definition of its mission of forming a sustainable society. Based on national and international public policies, environmental education has a connotation, to have a social and environmental mission, exerted through citizenship practices and social and environmental responsibility. The goal becomes the adopting responsible of new values, habits, behaviour and personal relationships, interpersonal, and with all the things around, reflecting the consumption, the importance and the exploitation of natural resources and generation of waste.

By this concept and context, the UN, the importance of Legumes, and by extension, of the vegetable Kingdom to the Earth and to mankind, for its environmental services, in addition to the other, proclaimed International year 2016 leguminous plants as a means of helping, too, in awareness of environmental education.