

Oilseed- dominance in nutrition world

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Introduction:

Oilseed crops generally are one of the most important crops in the world. Their role in human diet and industrial application cannot be underestimated. The major oilseed crops include soybean, coconut, oil palm, sesame, rapeseed, sunflower, safflower, olive seed, etc. The by-products (hull, meal and oil) of oilseed crops had been integrated into human and animal diets due to its nutrient compositions. Majority of the oilseed meal consists of proteins and high contents of essential amino acid which are beneficial to human health and wellbeing. The vital role played by oilseeds and pulses in the human diet need no emphasis. Oilseeds are the rich source of energy, containing twice as much as energy (9 KCL/g) as carbohydrate or protein (4 KCL/g), (FAO, 1980). Pulses meet most of the protein needs of the Indian population and are also important for agriculture and livestock farming. The hay and straws of the pulses are rich in amino acids and makes valuable cattle feed. Moreover, almost all pulses and groundnut and Soybean, among oilseeds, being leguminous plants, their cultivation improves soil fertility by fixing nitrogen into the soil. Thus, the nitrogen depleted from the soil by cereal cultivation can be replenished by proper crop rotations with pulse cultivation. That is why, oilseeds and pulses occupy an important place in the farming system of the country. They together account for about 26 per cent of the gross cropped area and contribute 20 per cent to the value of output from agriculture.

Crops – Source of Nutrition:

Rapeseed oil is one of the highest yield oils, it has very black seeds, which are like poppy seeds, and they are 45% oil and the other 55% is high protein animal feed. The Brassica oilseeds contain a high oil content which makes them a good candidate for



producing feedstock oils for bio-diesel. For example, spring Fats and oils are essential nutrients, comprising about 40% of the calories in the diet of the average person. Edible vegetable oils are used as salad or cooking oils, or may be solidified (by a process called hydrogenation) to make margarine and shortening. These products supplement or replace animal products (butter, lard), supplies of which are inadequate to meet the needs of an increasing world population. Canola contains upwards of 42% oil as compared to an oil content of about 20% for soybean. Vegetable oils are used in putty, printing inks, erasers, coating or core oils, greases, plastics, etc. The residue remaining after the oil has been extracted from oilseeds, is an important source of nutrients for farm animals. Oilseed meals from soybean, peanut, rapeseed and flaxseed are rich in protein; when mixed with other ingredients (cereal grains), and they provide nutritionally balanced feeds.

The essential fatty acids contained in hemp seed oil are required in our diet more than any other vitamin, yet our bodies do not naturally produce them. They must be obtained from external sources in the food we eat. These are involved with producing life's energy throughout the human body and without them, life is not possible. Oilseed rape is a very useful crop as the seed is typically 42% oil and the meal left after removing the oil is about 42% crude protein. Proteins serve a variety of functions in the human body such as acting as enzymes, antibodies, and the structural components of tissues, hormones and blood protein. The main function of dietary protein is to supply amino acids for the growth and maintenance of body tissue. Mustard greens are an excellent source of essential B-complex vitamins such as folates, niacin, thiamin, riboflavin, pyridoxine (vitamin B-6) and pantothenic acid. These vitamins are essential in the sense that body requires them from external sources to replenish. These B complex groups of vitamins help in enzyme synthesis, nervous system function and regulating body metabolism.

The protein quantity and quality, caloric value, and overall nutrient content of oilseeds are quite good. In many new oilseed protein sources, phenolic compounds are as important as unsaturated lipids, carbonyl compounds, and non-enzymatic browning in the development of adverse flavours and colours in food products. The Cucurbitaceae seeds such as *Cucumeropsis mannii*, *Cucurbita maxima*, *Cucurbita moschata*, *Lagenaria siceraria* and *Cucumis sativus* and their defatted cakes are rich in proteins (28 to 40.49% and 61 to 73.59%, respectively). Oilseeds and their constituents developed as functional foods or as sources of



nutraceuticals provide benefits for consumers and food processors, and represent a significant opportunity for biotechnology and plant breeding companies.

Conclusion:

Improving oilseed meal characteristics will continue to attract considerable attention. There are two general approaches, one focuses on the processing step, the other involves altering the composition of the oilseed using plant-breeding technologies. A result of such activities, on ongoing change in the nutritional characteristics of the oilseed meals should be made available to the market. This will result in new competitive pressures, which ultimately encourage greater efficiencies in the sectors involved. Good health rests, in part, on an adequate and balanced supply of these components especially through oilseeds. Oilseeds also deliver environmental benefits, including reduce of nitrogen leaching and soil erosion, provide pollen for bees, a food source and habitat for a range of wildlife.