RAMA UNIVERSITY

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FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES

- Green revolution has brought spectacular increase in production as well as productivity of crops in our country. But after the initial success, it had shown the symptoms of fatigue evident from the undesirable side effects on natural resources, such as soil, water and biodiversity and thus human health.
- The vast areas of soils once fertilizer was degraded due to soil erosion, salinisation or general loss of soil fertility.
- Water resources have been over-exploited and polluted due to excessive requirement of irrigation water for high yielding varieties and intensive use of agro-chemicals. Many plants and animal species were wiped out and are endangered. Residues of harmful pesticide in food and drinking water endangered both farmers and consumer health point of view and thus excessive use of external inputs consumes a lot of energy from non-renewable resources.
- Organic farming is a way of conserving the soil and maintaining the fertility, protect soil flora and fauna/diversity. It has lesser effect on pollution either of ground water, lakes and rivers. Organic agriculture does not utilize non-renewable external input and energy. Since no chemical or pesticide is used in crop production, there is very low chance of pesticide residues in food. At the same time the organic products are healthier and have better product quality like taste, aroma and storability. Input cost is drastically reduced in organic cultivation but the market price leading to higher income for farmers.

Aims of Organic Production and Processing

- To produce sufficient quantities of high quality food, fibre and other products.
- To work compatibly with natural cycles and living systems through the soil, plants and animals in the entire production system.
- To recognise the wider social and ecological impact of and within the organic production and processing systems.
- To maintain and increase long-term fertility and biological activity of soils using locally adopted cultural, biological and mechanical methods as opposed to reliance on chemical inputs.
- To maintain and encourage agricultural and natural biodiversity on the farm and surroundings through the use of sustainable production systems and protection of plant and wildlife habitats.
- To maintain and conserve genetic diversity through attention to on-farm management of genetic resources.
- To promote the responsible use and conservation of water and all life therein.
- To use, as far as possible, renewable resources in production and processing systems and avoid pollution and wastes.
- To foster local and regional production and distribution.
- To create a harmonious balance between crop production and animal husbandry.

- To provide living conditions that allows animals to express the basic aspects of their innate behaviour.
- To utilise biodegradable, recyclable and cycled packaging materials.
- To provide everyone involved in organic farming and processing with a quality of life that satisfies their basic needs within a safe, secure and healthy working environment.
- To support the establishment of an entire production, processing and distribution chain which is both socially and ecologically responsible.
- To recognise the importance of, and protect and learn from, indigenous knowledge and traditional farming systems.

Organic Food Products

- Organic Cereals: Wheat, Rice and Maize or Corn.
- Pulses: Redgram and Black gram.
- Fruits: Banana, Mango, Orange, Pineapple, Passion fruits, Cashewnut and Walnut.
- Oilseeds and Oils: Soybean, Sunflower, Mustard, Cotton seed, Groundnut and Castor.
- Vegetables: Brinjal, Garlic, Potato, Tomato and Onion.
- Herbs and Spices: Chilli, Peppermint, Cardamom, Turmeric, Black pepper, White pepper, Amla, Tamarind, Ginger, Vanilla, Cloves, Cinnamon, Nutmeg and Mace.
- Others: Jaggery, Sugar, Tea, Coffee, Cotton and Textiles.

Plant Harmone

- The quantitative increase in plant body such as increase in the length of stem and root, the number of leaves etc., is referred to as plant growth, whereas, the qualitative changes such as germination of seed, formation of leaves, flowers and fruits, falling of leaves and fruits is referred as development.
- The two sets of internal factors, viz., nutrition and hormone control the growth and development of the plant.
- The raw material required for growth is supplied by nutritional factors which include the minerals, organic substances the protein, carbohydrates, etc.
- Utilization of these substances for proper development of the plant is regulated by certain "*Chemical Messengers*" called plant growth substances or plant growth regulators, which in minute amounts increase or decrease or modifies the physiological process in plants.

Phytohormones

- These are the hormones produced by plants which in low concentrations regulate plant physiological process.
- These usually move within the plants from a site of production to a site of action.