Organic Farming for Sustainable Agricultural Production

Prof. Dilip Kumar Swain
Department of Agricultural and Food Engineering
Indian Institute of Technology, Kharagpur

Lecture - 05
Organic Farming Concepts and Principles (Contd.)

So, welcome for the next lecture Organic Farming concepts and Principles as we discuss.

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So, we will discuss so, different organic farming and finally the principles of organic farming. So, what is a organic farming systems consist the ecological agriculture; that means, this encompasses the entire complex of physical, economic, social and cultural conditions which affect the growth and development of organic system, it matches the crop soil and climate of a regions for gaining economy and efficiency of inputs.

So, next says it reduces the pressure on land water and biodiversity without adverse effect on agricultural production and nutritive value of food and maximizing ecological production efficiency. Ecological balance is attained by use of organic inputs like compost, vermicompost. botanical microbial pesticides and beneficial organisms; that means, ecological agriculture say nature we work in harmony with natures so, that we are discussing earlier also.

So, in a close nature; so, as is a no waste concept. So, this a complex of physical at atmosphere economic, social, cultural condition in integrated manner; that is here the ecological agriculture and our the purpose is to maintain the productions to have the productions as of the conventional farming and with a better quality and without affecting or deteriorating the environmental quality.

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So, biodynamic the different type of organic farming biodynamic is one type of organic farming. So, this is a method of farming that emphasizes the holistic development and interrelationship of the soil, plants, animals as a self sustaining systems, it is based on systematic and synergistic harnessing energies from cosmos mother earth plants and cows.

So, in this biodynamic farming, as one of the organic farming concepts where the cow horn and inside the cow horn; so, different the cow dung, urines and manures, plant based manures also there kept insides and incubated in soils for several months and this can be used, this can this can has a tremendous effect and crops specially supplying the nutrients and supplying the increasing the hormones, growth hormones and also protect the crop from pest and diseases, this is what we will be dealing in the classes, the detail in biodynamic farming.

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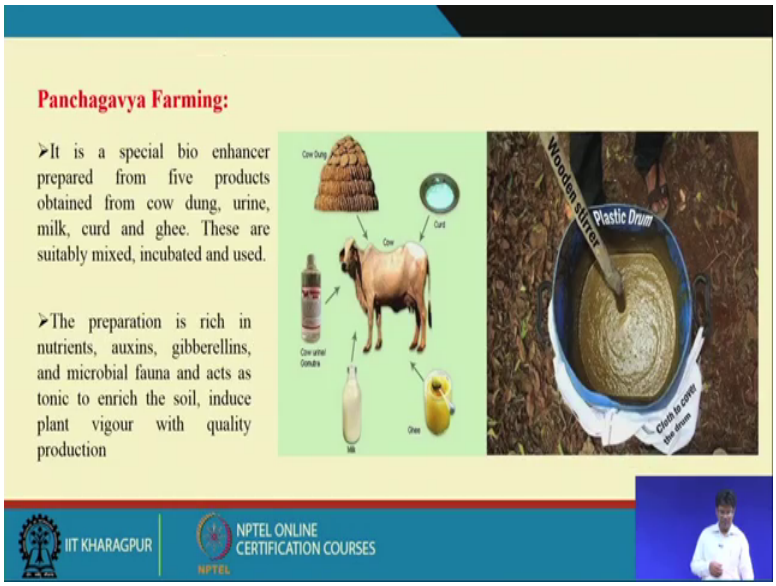

The next; Panchagavya farming; here it is a special bio enhancer prepared from 5 products obtained from cow these are the dung, urine, milk, curd and ghee. So, these are the 5 product from the cow very useful as if the for the human being the milk, curd, ghee, the urine and the dung, because the dung is highly energetic and urine is a control of many pest and diseases. So, they are mixed together suitably mixed and incubated and used and used for the crop production in organic farming.

The preparation is rich in nutrients, auxins, gibberellins and microbial fauna and acts as tonic to enrich the soil induce plant vigour with quality production. So, this is the Panchagavya farming where the 5 component 5 product from the cows. So, dung, urine, milk, curd, ghee, they are mixed a suitable proportions incubated.

And then this can be sprayed on the crop and the over the crop cannot be and can be used in the soil also as a fertilizers and as pest as a control against pest and diseases and it has a tremendous effect and enhancing the soil fertility and also providing the growth hormones enzymes for the crops per proper growth and development and to have a better quality of the produce.

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Similarly Rishi Krishi; so, in this system rhizosphere soils beneath banyan tree is spread over the area and the amritpani specially bioinoculants prepared from cow dung, cow ghee and honey is utilized for the seed and seedling treatment enrichment of soil by overhead sprinkling and through irrigation water.

So, this is also from the other soils that is it from the root rhizosphere; the rhizosphere area of the banyan tree; so, this has a tremendous effects on crop vigor and developing a better growth and development of the crop. So, that is a spread over the crop field and also if the amritpani that is special bio inoculants prepared from the cow dung cow ghee and the honey, it utilized for the seed treatment and seedling treatment.

So, it can the purposes to minimize the disease and pest infestations at the same time that is as a energetic that can as a boosting for the crop growth and development.

Natural farming this is coming in big way. So, that is say it consists of say Bijamrut; that is a cow dung, urine, lime, virgin soil; that means, a non cultivated soil from glands not barren land. So, virgin soil for seed and set at the seedling treatment followed by regular use of Jivamrut; that is a composition of cow dung, urine, jaggery, pulse flour and virgins soil through that can be applied regularly in irrigation water and coupled with mulching and proper soil aeration.

So, this also the natural farming Government of India probably some asked sorry asked, Government of Andhra Pradesh probably; it is trying to establish a university of natural farming as came in use. So, here they are you can use the; I like a traditional way of farming and by maintaining the productions levels say. So, the in situ the residues are left in the field and the organic sources are applied in the field so, using the cow as an integral part of the farming systems.

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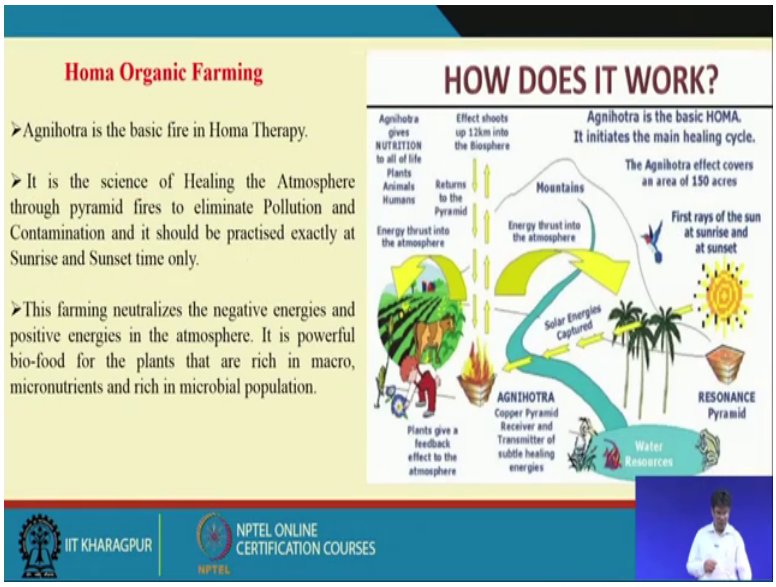

Homa organic farming; so, this you say as a Agnihotra farming or the homa organic farming as you know the home; homa that is a used in every home in occasions the [FL] celebrations we do home.

So, this is has a tremendous effect on crops because this is also this, you can say the concept of Indian origins how the homa, doing a homa in a crop field the practice to be followed like a copper and the pyramid copper plate in this city there science of healing the atmosphere through pyramid fires to eliminate pollution and contamination and it should be practiced exactly at sunrise and sun sunset time only.

This farming neutralizes the negative energies and positive energies in the atmosphere it is powerful bio food for the plants that are rich in macro, micronutrients and rich in microbial population; that means, doing homa. So, what you can do in a copper pyramid type of pots that as you have seen in the figure here we put the dried cow dung cake and

the raw rice small amount of raw rice and ghee putting this you make could the make the fire and chanting the slogan exactly at the time of suns sunrise and the sunset.

So, that makes vibrations in the atmosphere. So, that gives a through this it is a physical phenomenon in the atmosphere. So, that helps in increasing the solar radiation receptive capacity of the plants and keeping the air free from many pests and diseases and say that one homa can cover the area of around 140 acres of land and the effects should up the vertical just an up to 12 kilometers in the atmosphere and it gives a nutrition to all life the plants animals and human beings those in the earth.

So, doing a homa because it has a tremendous effects and some of the research is as been done in India and abroad to German. So, they have seen the effect that doing homa farming it integers the solar radiation absorbance capacity of the farmers sorry of the crops and also that eliminates that reduced the insect pest and infestation that; that means, there is a less use of any pesticides for controlling pest and disease and moreover due to increasing interception of solar radiation by the crop plants due to homa farming as you purified the atmosphere and increases the absorption of the solar radiation by the crops it enhances the crop field.

So, this is also homa farming concept this one of the organic farming where we do not use any chemical pesticides are the two control the pest and diseases and doing. So, homa farming; it can increase the productions and also it can improve the quality of the produce.

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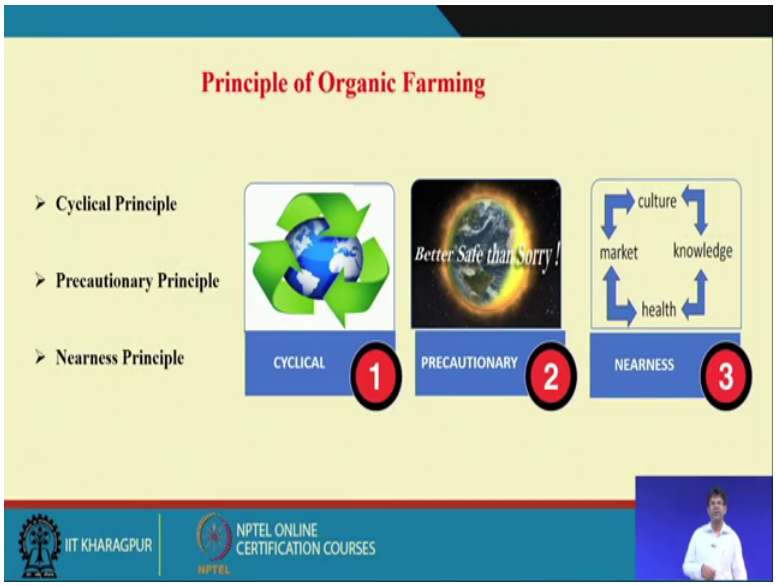

And will go for the principles of organic farming. So, there are three basic principles of organic farming say cyclical principles precautionary principle and nearness principle.

So, cyclical principle number one discuss is a close recycling or the crop cycle. So, we have to grow the one crop after another from the different groups the same crops should not be repeated season after season. So, if so, by changing the crops one crop after another in different seasons we can minimize the pest and disease population in the field at the same time we can maintain this soil fertility and we can improve the soil fertility long term basis.

So, this the cyclical principles as you said the biodiversity. So, changing crops same group of crops should not be rotated in the same field different crops should be taken to maintain the soil fertility.

The second principle is precautionary principles; that means the better safe than sorry; that means, prevention is better than cure. So, we should not use anything any materials that is not allowed in organic farming. So, it precaution better to have a very safe better to avoid the use of any chemical insecticides and pesticides that is the precautionary principles and third one if the nearness principles; that means, is a transparency trust building. So, that is also very important in organic farming.

So, when you say product is organic it should be really organic we should be honest in your approach the farmers they are producing organic that should be clearly organic there is no ambiguity on this so that say health knowledge market culture transparency should be develop.

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So, this three are the main principles; as you discuss the cyclical; that means, collaboration with nature should be promoted through the establishment and buildup of a cyclical principle that ensure versatility, diversity and harmony the recycling and use of renewable resources that comes the cyclical principles.

Precautionary known and well functioning technologies are better than risky technology, it is better to prevent damage than to depend on our ability to cure the damage; that means, we should not use the materials which are not allow in organic farming.

So, not to take the risk, we must we should use only those materials which are allow only organic fertilizers only organic pesticides those things are allowed; those things can be used in organic farming nearness transparency and cooperation in food productions can be improved by nearness; that means, for example, using experience based knowledge and local interest concerning the development of cultural and social value.

So, nearness principle the transparency close association producers and the consumer this should be a close association they are should be the trust building among the

producers and the consumers. So, there is be very transparent if it is a organic that is a organic; if it is not organic that is a non organic. So, this type of the trust building among the producers and the consumers should be develop and there should be in very close low for the successful of this organic farming.

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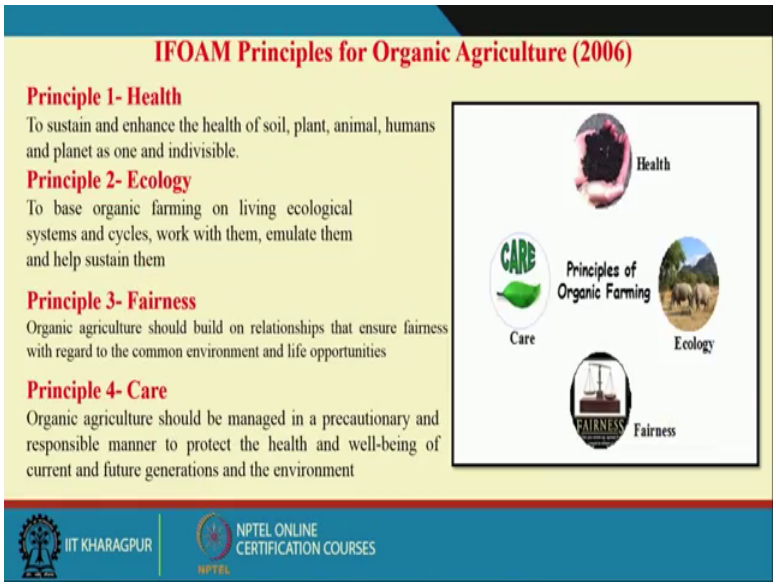

And if you see the other principles that say IFOAM International Federation of Organic Agricultural Movement; so, this started in 1972; February in that add up a seen and German and Germany. So, this their principles of organic agricultures are say principle one health to sustain and enhance the health of soil plant animal humans and planet as one and indivisible.

So, the health means not only soil health we are seeing. So, we will maintain the health of soil and the soil is delivering the plants is giving supplying neutron plants the plant health and the animal health and finally, the human health that is from farm to plate as you said the human being consumes. So, everything the system chain farm to plate should be well defined organic systems that systems and that causes that increase the healthy diet, healthy soil, healthy plants and healthy animal.

Now, you say the even if the animals organic piece and organic bee productions. So, the see you need the organic poultry. So, if was complete organic systems; the poultry feed materials they are produced as organic origin; so, I did the meet can be marketed as a organic poultry.

Similarly, the organic beef the cattle feeding materials of the cattle that is also made up organic and also the management of cattle how do you rear the cattle; the way you cattle has said that is no harm to cattle. So, that it increase has a different physiological activity among the cattle or the cow. So, the beef is also marketed as a organic beef as you see in the blog country they have the organic beef and that say very premium high premium price as compared to the conventional beef.

So, this is the principle one that is a health; then comes ecology to base organic farming on living ecological systems and cycle work with them emulate them and help sustain them; that means, a harmony with nature we are living with nature we are living in harmony with natures. So, no harm to environment, no harm to any living organism the environment that is says ecology.

So, all the as you discussed earlier all the as animals; so, bio microbial organisms plants they all live in harmony in case of the organic farm is ecology. And principle three fairness as you this fairness the transparency; that means, organic agriculture should build an relationship that ensures fairness with regard to the common environment and life opportunity. So, there should be by trust building the producer and this say consumer mark they should be in close loop for developing fairness in organic farming.

Then care organic agriculture should be managed in a precautionary and responsible manner to protect the health and wellbeing of current and future generations and the environment. So, we are all concerned about the health and the environment we need a good food, we need the quality; quality water to drink and the same time we need the quality air to breath to live a good environment sustainable environment.

So, that we will remains the resist free and we can have a better life in a through and this a as organic farming systems as I will discuss also volume the latter classes how it can minimize the global warming potentials and also if the in addition to the better food and providing a better quality water drink and good air to breathe.

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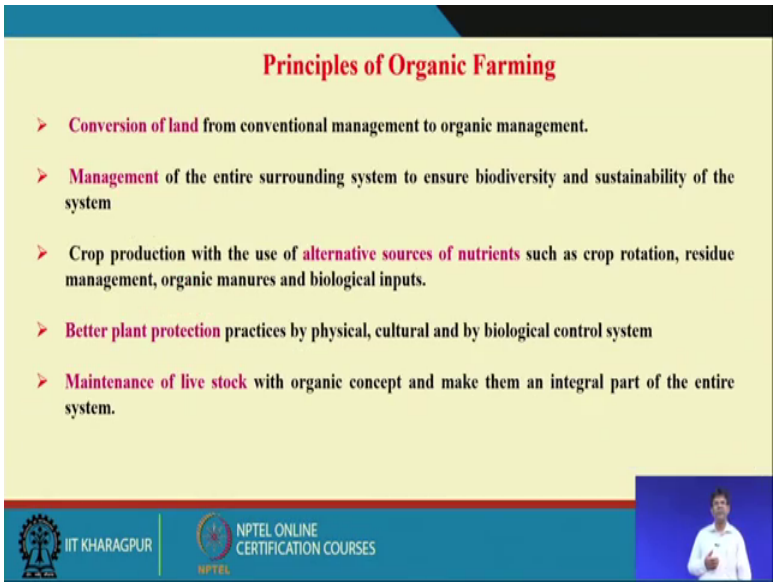

So, this in the principles that is a conversion of land from conventional management to organic management, then management of the entire surrounding systems to ensure biodiversity and sustainability of the system crop production with the use of alternative source of nutrients such as crop rotations residue management organic manures and biological inputs. Better plant protections practice by physical cultural and biological control systems maintenance of live stock with organic concepts and make them an integral part of entire system.

So, once you go for the even if organic farming. So, live stock is must and they are the integral part of the organic farming because they provide the major inputs as a nutrients or the pesticides for the crop protections and the crop growth and development. So, maintenance live stock and harmony with the live stock will living of the live stock that is very very important in case of organic farming.

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So, main issues of organic farming if you go for as a principles. So, uses the standards, inspection certifications, accreditation, inputs, market that is a export domestic market. So, these are the some of the major issues are there. So, we will discuss some of in that process.

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And say brief has in this the standard means globally there are many standards available for their organic farming as from the IFOAM international federation of organic

agriculture moment then European standards, Japanese in India, we have the national program for organ in production.

APEDA; Agricultural and Process Food Products Export Development Authority; so, they have some standards of the organic farming also we have the certification agencies. So, there are many numbers we can say Ecocert and Skal IMO, SGS say Gurgaon, Naturland, Lacon, Indocert, APOF Bangalore, ISCOP Indian Society for Certification of Organic Products; Coimbatore, Bioinspectra cochin, IRFT Mumbai. So, these are the some of the certification agency there involve in certification of the organic products accreditation.

So, this is a national accreditation boards there responsible for this say accreditation of the organic products, then we have some limitations because if the high cost poor inspection performance also there.

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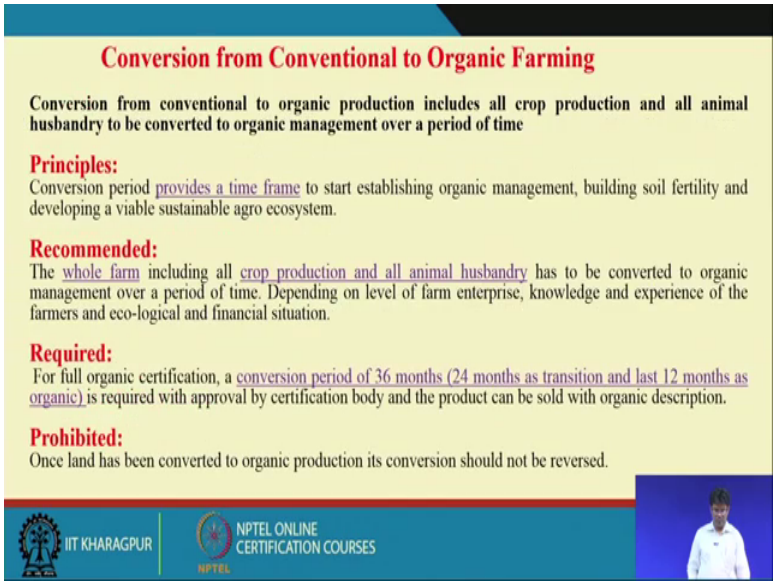

And see the conversion for go for the conversion from conventional to organic farming. So, this conversion from convince organic product include all crop production and all animal husbandry to be converted to organic management over a period of time.

So, we cannot convert the whole land to organic at a stage; so, we must follow the principles; that means, the conversion periods provides a time frame to start establishing organic management building soil fertility and developing a viable sustainable agro

ecosystem; so, when you go for the conversion of land at conventional farming to organic farming.

So, you must follow this one the conversion time period specific time periods when we start on establishing our organic input management, build the soil fertility and developing a viable and the sustainable agro ecosystems.

The recommended is the whole farm including all crop production and all animal husbandry has to be converted to organic management over a period of time. Depending on level of farm enterprise knowledge and expertise of the farmers and ecological and financial situations so, they have converted is.

So, with the time; that means, the required timeframe shape poor for full organic certifications a conversion period of 36 months which 24 months as transition and last 12 months as organic is required with a approval by certification body and the product can be sold with organic description because when you go for the a conversion needs minimum 36 months; that means, the first 2 years were the 2 and 24 months as a transition periods.

Where we do not use any chemical fertilizers or chemical pesticides, but the product cannot be sold as organic the product can be sold as a transition to organic not as organic. So, afirst 24 months you should follow all organics standards for the crop production, managements if you are going for the field crops the seasonal crops or the plantation crops say horticultural crops that case all the cases we need the conversion period of 36 months where 24 months will be as a transition and last 12 months as can be sold as organic.

So, in this case; when you go for the total or the farm conversion to organic, we can divide will destroyed that on the whole farm divided into sub plots and. So, when only one section of the plot can be taken care for the organics and the rest 3 can be continued as a conventional farming and when you go for the organic and the conventional they have should be certain distance should be maintained because minimum distance should be around 8 to 10 meters from organic plot to conventional plot.

So, that there should not be any leaching or any nutrient movement for between the organic and the conventional plots and the slowly every year the plot on the crop the

term can be converted to organic and also there are some principles when you go for the organic conversion the crop selection what type of crop you are choosing.

So, if you are going for the conversion to organic from the conventional farming. So, first year we must choose a crop that required less nutrient less nitrogen less macronutrients those type of crop should be chosen in the initial year of conversion.

So, as we move after first year. then you can choose the high nutrients demanding crops. Specially in case of conversion the initial period first year conversion we should use the crops like a leguminous crops like the pulse crops like your green gram, soybean this should be chosen. So, that they their yields should not be affected if you go for the organic nutrients management because these are the less nitrogen requiring crops and the second as more about these say legumes they do build and soil fertility they do add nutrients.

So, after the first year if you take some other crops the high nitrogen requiring crops then they yield may not be affected, but initial periods when the crop when the crop requires if you take a crops initial are going periods high nutrient requiring crops then the yield may be drastically reduced. So for that reason when you go for the rules are the conversion organic farming so, there will discuss of course, the cropping patterns; what type of crop is choose when you go for conversions.

Especially for a the initial period of the organic farming when the transition phase we must choose a crops that require less nitrogen less nitrogen fertilizer or less nutrient adjust the crops. So, after that towards third year when you go for the adjust layer or the organic products you are certain a organic products in those years though you can use the crops of high nutrients requiring crops.

Then prohibited means a once the land has been converted to organic production its conversion should not be reversed. So, we should go for the organic, it should not be reversed to again conventional.

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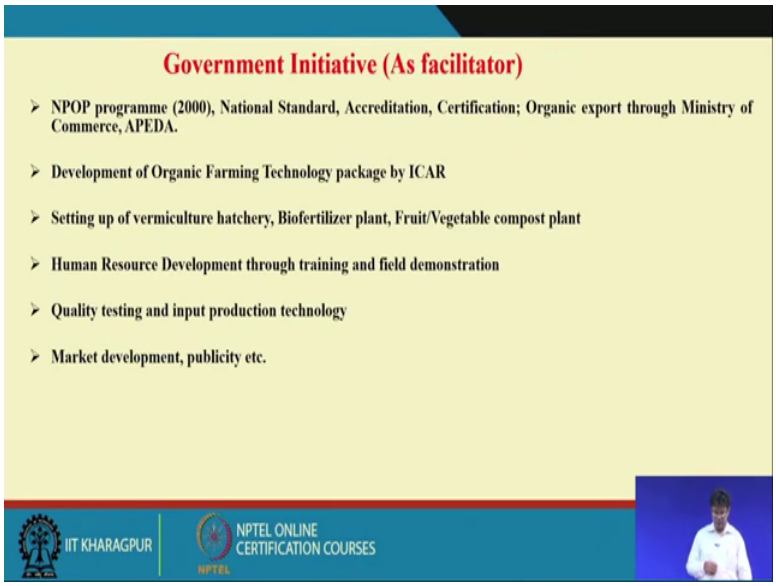

So, the there should be government initiatives as a facilitator for the organic farming. So, there is a national NPOP program then national standards accreditation certifications. So, organic export through ministry of commerce APEDA and some facilitator as a organic farming development of organic farming technology organics already stand organic farming by the Indian council of agricultural research, setting up for vermiculture hatchery biofertilizer plant, fruits, vegetables and compost plants. So, that we can we can provide the regular regularly the organic nutrients and the organic pesticides biopesticides for this a crop productions.

Human resource development through training and field demonstration; so high essential; so, regular training should be given to human resource how to developed by fertilize by fertilizer unit or the vermicomposting if the people can become the entrepreneur also in vermicomposting and in organic farming and developing the organic foods.

Then quality testing and input production technology so that is also a part of the farming; how can go for the irregular quality testing and if how the fertilized organic fertilizers or the organic pesticides can be can be produced for their use then market development and publicity.

So, these are also the part of the organic farming. So, as farmers can be now the farmers are showing interest for conversion of land to organics, but they need profit it should be

profitables they should get the higher human reasons unless inflict they so, profitable so, farmers may not come forward. So, to her to motivate the farmers their produce should be sold in a good price and they should get a good returns in organic farming.

So, as a for this lecture as a organic farming conception and principles. So, this deals with the basic concepts for different type of organic farming and the principles means what are the principles in work in organic farming. So, once you know this then when you move to the future class also one class will be taking about the sustainable agriculture. So, organic farming means that leads to sustainable agricultures and will discuss the indicators of sustainable agriculture.

And based on that we will move to the next class further class is; that means, how we can go for the organic farming technology; that means, the input productions how we can produce the organic fertilizers, organic pesticides and the management in the field; how can apply in the field and these standards and the principles it should be maintained when you go for the organic farming whole.

So, these are the some of the basic understanding before we move for the main subjects as a input productions and input management technology in the organic farming ok.

Thank you all.