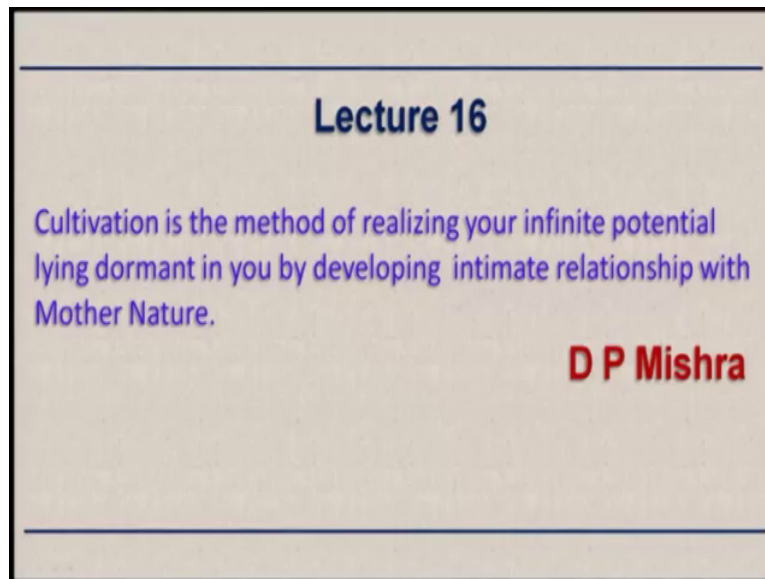


Course on Ancient Indian Technology
By Professor D.P. Mishra
Department of Aerospace Engineering
Indian Institute of Technology, Kanpur
Lecture 16
Module 4

Let us start this lecture with a thought process.

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Cultivation is the method of realizing your infinite potential lying dormant in you by developing intimate relationship with Mother Nature. If you look at this thought, I had also mentioned earlier that if you want to be a Rishi, a sage, you will have to do Krishi. “Rishi banne ke liye krishi karna zaroori hai”.

So let us recall that what we are learnt in the last lecture. We basically looked at sowing methods and then we looked at transplantations, how to do that and what are the ways and why we will do. And we also discussed about the mulching, which is basically covering the soil. And why we will do and how we will do, what are the types? All those things we learnt.

And today we will be looking at basically pesticides.

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Pesticide

- In reference to plants, pest signifies *any insect, fungus, etc* which destroys plants.
- *Pesticide means pest-killer*
- The major calamities were traditionally enumerated as being six: *excessive rain/cyclone, drought, insects (locust (grasshopper), snapper, Ho tarda, etc), rats, birds (parrots) and foreign invasions.*
- *Agnipurana (202 verses 13-14) prescribes few treatments to promote the growth of flowers, fruits and overcome infertility*

After plastering the plants with mixture of Vidanga, and Ghee, they are to be sprinkled with cold water mixed with *Kulatha, Masa, Mudga, Barley and sesamum.*

- It recommends sprinkling with cow ghee and cold water as a general remedy.
- The powder of the *offal matter* of sheep and goats, barley powder, sesamum, beef, and powder are to be kept buried for seven days and then are to be sprinkled on plants.
- The plants are to be irrigated with the washing of fish.
- A worm-eaten plant is to be irrigated with a solution of oil-cake in water

Agricultural technology in ancient India

Pesticide you will be knowing that you know the pest which will be affecting the crop and basically insects, fungus and other things, destroy the plants. And therefore pesticide is basically pest killer. And it was a problem which was been identified earlier also in our text or the literature that people say that major calamities if you look at one of them of course the insects but other calamities what our ancestors had identified is the rain, cyclone, drought and rats, you know rats were you know also this thing. Today also we face problem.

And so also birds and parrots and foreign invasions, of course for the birds and parrots and other things we are having a way to give them something. So that they will be also there. Because the birds are important for, it is important for the like taking this stigma to other places, right?

And also the another thing is foreign invasion. And today if you look at we are facing the problem of cultural invasion, okay. Because our culture is being getting spoiled at very rapid rate. And according to the Agni Puranas, that is it prescribes the few treatment to the promote the growth of flower, fruits and overcome the infertility, right?

And after actually they use in this process they use lot of local materials. And the organic materials which is available like weed dung which I had shown you, cow means desi ghee and they should use this mixture and they should mixed with the cold water along with the Kulatha, Masha and Mudgha. These are the kinds of grains what is being you know being

cultivated in our country and barley and sesame this is basically Til. And this has to be sprinkled for the as a pesticides.

And not only that like I remember that in our place we used to have used the neem, right? As a part of pesticides, like. And there will be several others like Dhaatura and other plants were used as a pesticide for so that you know it can prevent.

And those are local knowledge are you know are being lost now is being lost already and we need to revive it and so that people will be not depending on upon too much on the chemical pesticides. The natural pesticide can be used.

It recommends sprinkle with sprinkle the plants with cow ghee and cold water as a general remedy. Now one to test of course cow ghee is very costly now who will use that? We will have to find it out, what is the better cheaper way of doing that. And powder of the ofal matter of the sheep, goats and other animals also. Ofal matter means you know internal matters place which you people cannot consume and the barley powders and again til, til is very much used and beef and this powder are kept buried for 7days underground like you know.

And that might be for the fermentation or some other thing, why it is so that question has to be asked. Then that we sprinkle on the plants and this for the as a which can act as a pesticide. Plants are to be irrigated with washing of fish, of course this I know because when I was a kid my mother used to put this you know ofal matters of the fish which cannot be taken as a food, nearby what you call lemon tree, which was not giving the fruit. But that tree had started giving I at least I can vouch for that because I have seen in my childhood.

So that was which was being used and it is there in the text also I worm eaten plant is to be irrigated with solution of oil, cake and water. Earlier day's oil cake being used because oil being produced in the village itself by the person you know. Each year during the harvest season we produce our own oil and keep it and use it, not buy from the market. So that is the things which we do not have today and this is the weed dung I thought I will show you.


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Pesticide

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Agricultural technology in ancient India

Vidanga (powerful anti-parasitic herbs of Ayurveda)

And it is a weed dung this thing an powerful anti-parasitic herbs of Ayurveda which is being used profusely. Not only for the plants for also the human beings.



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Pesticide

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Agricultural technology in ancient India


Vidanga (powerful anti-parasitic herbs of Ayurveda)

And this is the til or the sesame which is being used. Also for that you know if we will use this oil on your hair, you can grow good hair and then you will not having problem of itching and other things, you know, right?

(Refer Slide Time: 6:05)

Pesticide

- *Kandarka* and other insects (*krmī*) are to be taken out from the roots of the tree which is then to be sprinkled with cold water for seven days.
- For destroying insects the text recommends administering of water containing milk, carcass water (*kunapa*), *Bhillota*, *Vaca* and cowdung.
- By plastering of *Siddhartha*, *Abda*, *Vaca*, *Kustha* and *Ativisa*
- Fumigation with fumes of *Siddhartha*, *Ramatha*, *Vidanga* and *Usana* and washings of beef, horn of buffaloes and flesh of pegoon, along with the powder of *Bhillota*.
- Another recommendation is plaster with *Vidanga* mixed with ghee, irrigate with alkaline water for seven days and poultice of beef, *Siddhartha* and sesamum.
- A worm-eaten plant is to be irrigated with a solution of oil-cake in water
- Insects on leaves are destroyed by dusting them with ashes and brick-dust.
- Injury caused by insects are healed by plastering of *Jantughna*, sesamum, cow's urine, ghee and *Siddhartha* and by watering with milk.



Agricultural technology in ancient India

So there is a Kanda Karaand, other insects this I have shown you some of the insects what you know affect our plants. And have to be taken out from the roots. Ok? Of the tree which then sprinkled with cold water for 7 days, I don't know why cold water, how it will affect, these are question are coming to my mind and it might be coming to your mind for that you need to do research and find it out.

And for destroying the insect, text recommended administering the water containing milk and carcass water-Kunapa is basically call again the flees and other things it will be fermented and it will be put it will be having lot of smell also, right? Kunapa and Bhillota dry and Vaca, Bhacha, called basically bacha kind of things we call in and then cow dungs. So this has to be basically used for the destroying the insects.

And by plastering of *Siddhartha* is another plant, of the ant *Vaca* and *Kustha*, *Ativisa*, these are all plants which you people may not be knowing even is a local in a Sanskrit names and this can be used also for the as a act as a pesticide. And you can fumigate, fumigate is burnt it and then the gas will be going out with the fume of *Siddhartha*, *Ramatha*, *Vidanga* I have shown you, *Usana* and washing of beefs and horn of buffaloes and flesh of pigeons along with the powder of *Bhillota*.

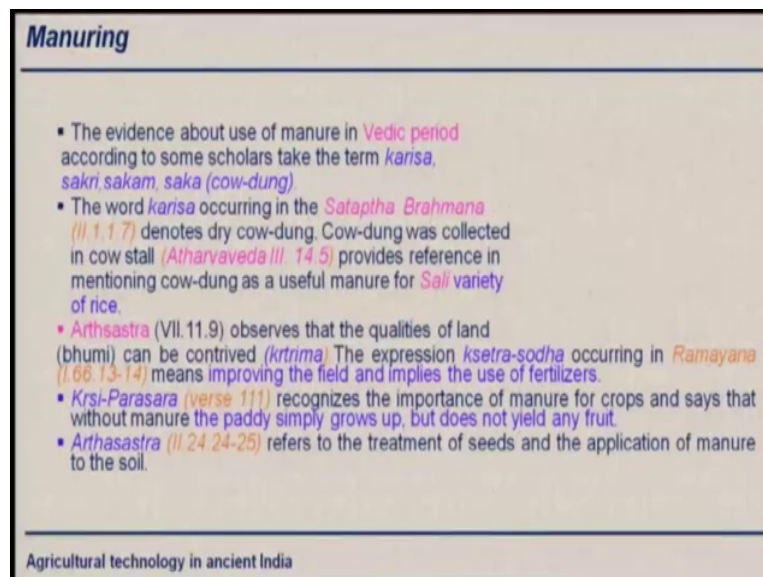
See there is a lot of things are there but one has to see which one is use where that also part is part of the text but I am not mentioning here because of paucity of time. And another

recommendation plaster Vidanga with mix the ghee irrigate with the alkaline water for 7days. That is also they were aware that this can be done and poultice of the beef, Siddhartha and sesamum like this is again kind of these things which has to be used.

And worm eaten plant is to be irrigated with a solution of oil cake in the water, right? This is being used in earlier days and insects on leaves are destroyed by dusting them with ashes brick dust and this I have used recently in my plants in the kitchen garden which is quite useful, right? Particularly with ashes from the wood and some people use from the cow dung ashes, right?

And injury caused by insects, right? To the plant can be healed by plastering Jantughna and then sesame or cow's urine, ghee and of course Siddhartha and watering with the milk, right? And these are things are there which is available locally and it can be used. If you look at we use basically cow's and then milk and then urine and then other things. So therefore, this is the thing which is being used as a manure also, you know cow dung and other thing.

(Refer Slide Time: 9:18)



Manuring

- The evidence about use of manure in **Vedic period** according to some scholars take the term **karisa**, **sakri**, **sakam**, **saka** (cow-dung)
- The word **karisa** occurring in the **Satapatha Brahmana (II.1.1.7)** denotes dry cow-dung. Cow-dung was collected in cow stall (**Atharvaveda III. 14.5**) provides reference in mentioning cow-dung as a useful manure for **Sali** variety of rice.
- **Arthashastra** (VII.11.9) observes that the qualities of land (bhumi) can be contrived (**krtrima**) The expression **ksetra-sodha** occurring in **Ramayana (1.66.13-14)** means improving the field and implies the use of fertilizers.
- **Krsi-Parasara (verse 111)** recognizes the importance of manure for crops and says that without manure the paddy simply grows up, but does not yield any fruit.
- **Arthashastra (II.24.24-25)** refers to the treatment of seeds and the application of manure to the soil.


Agricultural technology in ancient India

So manuring is very important because evidence about is for manure goes back to the Vedic period and because they used the term karisa and sakri, sakam, saka basically it is nothing but cow dung, you know.

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Agricultural technology in ancient India

And cow dung is important that is why cow is considered as a very important for our cultivation culture, right? What we have inherited from our ancestors.

The word karisa continues the Sataptha Brahmana, they know it is dried cow dung and cow dung was collected in a cow stall according to Atharav Veda provide reference in mention of cow dung as a useful manure of sally variety of rice. It is a very you know sort after rice and even during Vedic period.


And Arthashastra observed that the qualities of land is very important like and which is has to be Krutham, Krutham means basically is to be done, it is not that you will get, okay. You will have to contrive it, you will have to make it, prepare it for that. And ksetra-sodha which is you know is important being mentioned in the Ramayana, that means improving the field and use of basically fertilizers or the manures.

Of course now a day's people are using chemical fertilizer, but there is a organic fertilizer what we, our ancestors were using. And Krsi-Parasara you might be aware, I had mentioned earlier that recognizes importance of manure for crops and about the you know which is important for getting a good yield, right?

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Manuring

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Agricultural technology in ancient India

And if you look at I have shown you like a here a pit and which is containing cow dung and this is known as basically pit composting like is having pit and you put that and it will ferment and then you will get the compost. Arthashastra refers to treatment of seeds and application of manure to the soil and if you look at most of all the scriptures are talking about the manuring or the use of manure for the enhancing the fertility of the soil.

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Manuring

- In **Kasyapiyakrsisukti** says that after duly ploughing the field, the cultivator place it in cow-dung, goat-dung or composite (**valaga**) in order to increase its fertility (verses 263-64).
- It advises that paddy seedings are to be transplanted in a rice field softened by ploughing and carefully manured with **goat-dung and cow-dung with lata and vratati (creeper)** (verse 431).
- Exhorting the cultivator to do cultivation twice a year, it says that "It is desirable that the second cultivation is to be done after having raised the fertility of the soil by manuring with **goat-dung or cow-dung or composites**" (verse 513).
- According to the text, **Cirabhathi, Lambu, Kakaru, Trapasu** and other belonging to the category or Saka (pot-herbs) are to be fumigated with bone and ordure of a hog on a Sunday (verse 155). **Alabu** (gourd) creeper to be sprinkled with the **scum of rice kept overnight** (verse 155), and potato to be burnt by straw fire in the month of Phalguna and sprinkled with of oil-cake mixed with spirituous liquor (verse 57).

Kāśyapīyakṛṣisūkti
A Sanskrit Work on Agriculture
Edited with an introductory study
by Gyula Wojtilla

And Kasyapiyakrsisukti if you look at this is the text which is basically edited with an introduction by study by Guyala Wojtilla. A Sanskrit word, this is the largest work on the agriculture. This is a very thick book and unfortunately it is not available now, what I was

told, but it is being done by the edited by the you know Guyala Wojtilla, you can see and which says that this is a very adjustive you know book describing about various aspects of agriculture in India, Ancient India.

And cultivator basically you know you will have to use cow dung, goat dung and composites with you know to increase the fertility of soil, that means you will have to use that. And it advises that paddy seedling had to be transplanted in rice field softened by ploughing, that means first you do the ploughing and then you put this what you call seedling. Of course it should be manure with the goat dung, cow dung with of course lata, lata you know basically is a creeper and vratati, right? Which will be going up this things has to be done. That means it is basically who can look at it acts as a mulching also, right?

And according to this verse 513 it says that it is desirable that second cultivation is to be done after having raised the fertility of soil by manuring with goat dung or cow dung or composites of the mix of that because earlier days goats were being reared, that is why Gandhiji was very fond of goat milk, right? If you remember that this is because if you want to have a second you know cultivation then you will have to enhance this fertility, and once you do that with the growing population particularly.


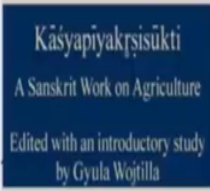
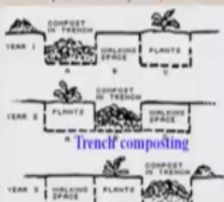
According to the text by the Cirabhati, Lambu, Kakaru and Trapasu other belonged category of Saka, Saka means basically pot-herbs you can develop the herbs in a pot had to be fumigated with a bone, ordure and hog on Sunday, I do not know why on Sunday why not other days and to be burned by the straw fire in the month of Phalguna. See they are very particular about the month and then of course maybe with the seasonal thing.

Sprinkle that with oil-cake mixed with the spirituous liquor, you know liquor can be used maybe for fermentation of this and then that will be something organic, something will be coming up which will be important to enhance the fertility of the soil.

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Manuring

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Basket composting

And there are various kinds of fertility of course now it has been improved little bit. That is a trench composting and if you look at you can out this material, organic matter particularly cow dung, goat dung, even like your vegetables, creepers, some other thing material which is can be made compost organic matter.

And then it will take time so that you can have here, you can feel here and then you can this maybe working place you can joined here and then once it is fill ad then prepared for it, you can put this plant. And this is known as trench composting and there are some other varieties that is a anaerobic in nature this is, but whereas aerobic nature where air will pass through this a compost, basket kind of thing you put those organic matter for the decompose. But in this case some of the gas will be coming out which will be may be polluting that atmosphere. But here the gas will not be because air is going through. So therefore, this is being also you know is used not only now a days but in earlier times also, even some villages people do that. They may not be aware it aerobic and anaerobic but they know that this is the thing you know to be done.

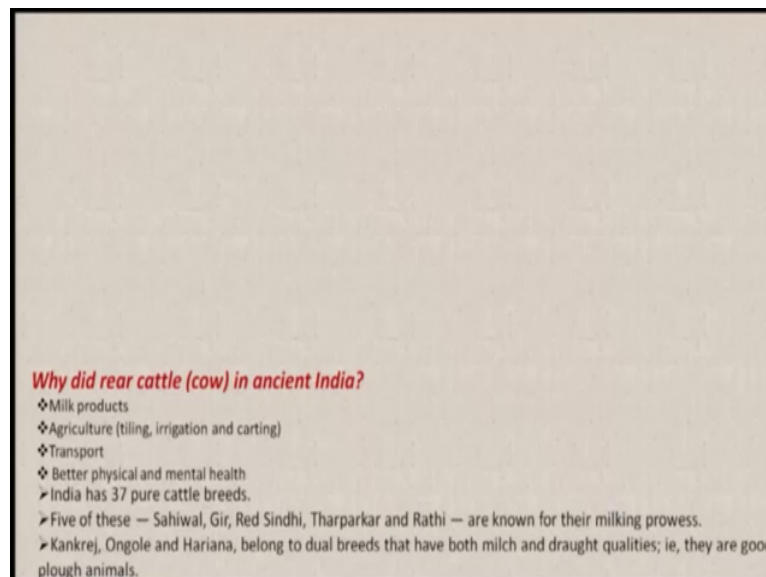
So and as I told that cow is a part of our you know agriculture, particularly in village areas people do rear and even cities. Why will rear cow you know is the question and why our ancestor did it in ancient time? There are several regions and of course most of them you will be knowing one is the of course we use milk products profusely and other thing is agriculture,

tilling, irrigation, carting and other. And transport, for the transport earlier days mostly it is done by the ox, or Oxen.

And there is another important aspect which is for a better physical and mental health. Physical because you will get the food and you will be taking care of the cow and you know do some physical work and also the take a nutritious food like their milk products. And mental health means you know like you will have relationship with them and that is the reason why know people are talking about animal therapy in western countries and earlier it was a part of our life.

And I have seen that you know people wherever they are in a trouble they will go and have a chat with the cow as if you know there is can listen and can understand the thing. And that gives us all us because if you go and tell your problem to some another person that fellow may spread and you may encounter problem, but if you go and tell talk with a cow or some other animal which you are having this thing then you would not. So that will give things, you know therefore this is the important part what our ancestors were doing and we need to do that if possible at this moment also.

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So India today has around 37 pure cattle breeds lot of breeds are being what you call extinct because we are not taking care of them and then and 5 of them, 5 of these are more maybe Sahiwal, Gir, Red Sindhi and Tharparkar, Rathi are well known for milking powers, it is more

than the Jersey or the Holstein the western breeds, right? Which is known for the milk production.

And there is another varieties like Kankrej, Ongole, Hariana or belong to dual breeds that have milch power like milk they can produce milk more. Also the draught qualities that means they are good for plough animals also.

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There are several, these are the some of the, you know figures I am showing I will not go into that, this is a Panwara, Nagori they are having each having their own name you know. That means that we are so attached to them started giving the name you know. And it belongs to various parts of the country because India is not a country, it is a sub-continent I call it you know. So there are various regions are having. So cow was very important and we should preserve it for our life and so also cultivation and the local cow or the native cow is very important.

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Indigenous vs Foreign Cattle Breeds	
Indigenous cattle breeds	Exotic (foreign) cattle breeds
They can tolerate heat as sweat glands are bigger in size and more in number. Sticky secretion smooths the skin. Short hair avoid insect pests.	Developed in cold temperate conditions, sweat glands are small and less in number, so can not tolerate high temperature of our tropical climate.
Indian breeds are very active. Disease resistance and adjustability is excellent. Most of them are specially developed for hard work from centuries	More prone to disease. Cross breed bulls are lazy in nature and are not suitable for hard work.
Small and closely situated hard hooves is good for ploughing. Hoof decay is less and it can run on hard rocky surface	Hoof is soft and the gap between the hooves is wide, results in slow walking and hoof diseases. It can not run on rocky surface
Certain breeds produce good amount of milk. Majority of the breeds produce less amount of milk	The Y chromosome of the <i>Bos taurus</i> is damaged during the process of evolution, leads to decrease in milk yield potential and high fertility
Teat and pores remain tightly closed decreasing the chance of mastitis	Teats and pores are big hence milking is easy but this is the reason for more chances of mastitis
Uterus opening remains closed which minimizes the infection.	Entry to the uterus inside the body remains open always, increasing the chance of infection.
Vitamin A and iodine content is more in milk. Bad cholesterol is less.	Milk has more amount of bad cholesterol and vitamin A is less.

I will talking about little bit why, what are the difference between indigenous and the foreign cattle breeds. If you look at this our indigenous breed, they can tolerate the heat as the sweat glands are bigger in size and more in number. These are technical thing you can see yourself. And sticky secretion, smooth skin and short hairs avoid insect pests. And that is you will see that because they are being grown here for ages together. Whereas, the exotic foreign cattles breeds like your Holstein or the Jersey or some other breeds develop in the cold temperate conditions and sweat glands are small and less in number so cannot tolerate high temperature in our tropical climate.

And you can see even today that in the summer the cow will be you know making a vibration moving here and there like that and they are feeling pain because this is not the place for them because the body is not designed for that, okay. It is as were like a foreigner will come and stay in the 45°C may be it sometimes goes to 48-49 you will feel like fish out of water, right? Similarly, the cows are in pain also the western cows what we are taking because of getting more milk.

And Indians one is very active and disease resistance, adjustability is quite excellent and most of them are specially developed for hard work from centuries together you know. It is not that they are being used for ploughing other things and they are prone you know acclimatized with this thing. And more this exotic cattle breeds are prone to disease, cross breed bulls are lazy in nature and not suitable for hard work, right?

And if you look at the indigenous one, is small closed is the hard hooves, hooves means you know in their leg or the palm is good for the ploughing, but whereas hove decays is less here because when they will there will be friction and then it will be decaying. It cannot, it can run on the hard rock, rocky surface particularly Himalayan cows can go also steep, they can climb the mountain you know Himalayan cow if you look at. I have seen myself and which is very uncalled for we cannot as a human being climb but the cow can climb you know like.

And hooves is soft in case of exotic or the cattle breeds and gap between the hooves is wide, as a result it is you know cannot walk properly it will be very slow and they get also hove diseases. It cannot run on the rocky surfaces, cannot even walk forget about running, okay.

And certain breeds produce good amount of milk, of course some of them breeds produce less amount of milk, but we should also look at the quality of the milk what we get and which I am not discussing but you can look at technicalities. In case of exotic or cattle or the foreign cattle breeds, in case of foreign cattle breeds the Y chromosome of the bos taurus is damaged during the process of evolution leads to the decrease of milk yield potential and high fertility with the time, right?

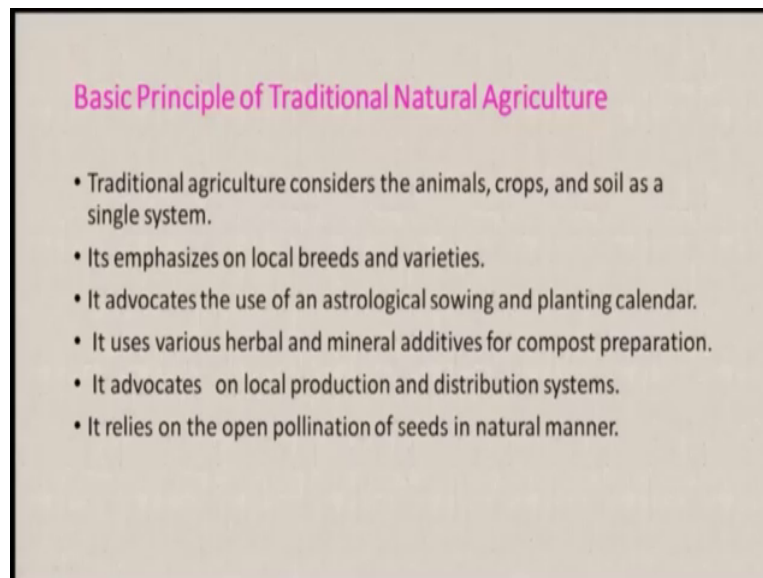
And the teats and pores remains tightly close decreasing the chances of mastitis, but in contrast if you look at the teats and pores are big hence milking is easy, in case of foreign cattle breeds, but this is the reason for more chances of mastitis. That means, mastitis will be getting they will be getting lot of pain, it because those pores will be blocked, right? In case of exotic breeds, but in case of indigenous cattle breeds it would not because they are designed that way.

And uterus opening in case of indigenous cattle remains closed, which minimizes the infection. In contrast the foreign breeds that is the entry to the uterus inside the body remains open, so therefore it is subjected to the you know maybe a infection very easily, right?

And vitamin A and iodine content in case of indigenous cattle breed is more in milk, and bad cholesterol is less, right? The good cholesterol maybe more I mean like that one has to see. But it is, but in case of the foreign cattle breed milk has more amount of bad cholesterol, therefore you will get more heart problems and other things, vitamin A is less.

So therefore we need to look at that you know indigenous cow is should be used for our application, of course the (exo) the foreign cattle can be good for them, but for us it may not be because it is not acquainted with our not evolved in this part of the country. So basic principles of tradition natural agriculture, let me just talk about little bit about that.

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Traditional agriculture considered the animals, crops and soil as a single system, it is not different, okay. They are integrated and holistic approach what we think and it emphasizes on a local breeds and varieties, that is why I have already talked about why we will go for local or the native cow breeds. And it advocates use of astrological sowing and planting calendar of course I am having little reservation about this astrological sowing.

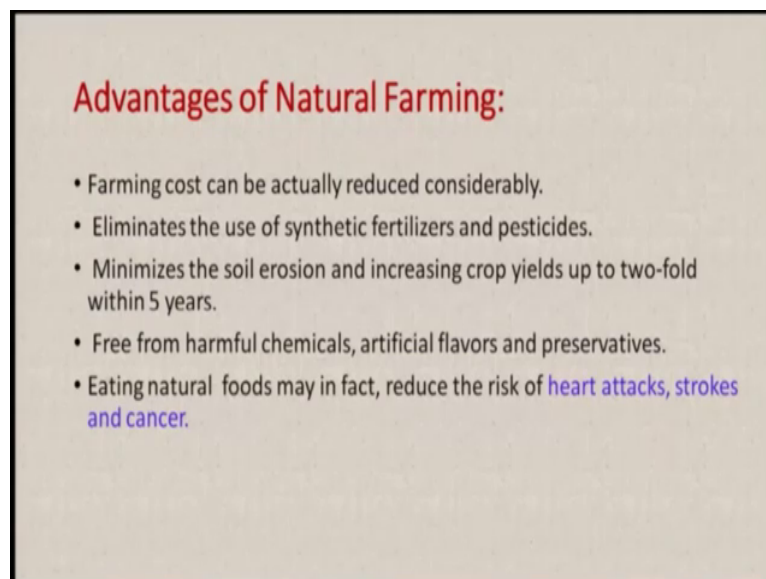
Although it may be used as a predictive tool according to one of my student who happens to be engineer but he takes a lot of interest in this astrological, but I do not have it. But that does not mean that you should not check it, you can check it and find it out whether it is true or not that has to be done, okay.

And it uses various herbal mineral additives for compost preparation, which is you know natural and it advocates from the local production and distribution system, that is very important because we will have to produce locally and distribute so that transportation costs and also the pollution due to the transportation can be minimized.

And people in one locality should not, you know remain hungry because food is not there. But now a days what is happening is good varieties of let us apple will go away from Kashmir and you know other people good varieties of the rice, Saal suppose it is in Bihar, now Bihari people will not get that you know. So therefore that things goes because of this market system and then we advocate on that, the natural farming.

It relies on the open pollination seeds in the natural manner you know pollination is very important, therefore birds and other things they do and insects you know like your butterflies and other insects, they help in pollination. So that is a very important thing which we need to take care because now a days people are thinking to use artificial pollination because pollination is being reduced now a days because of the air pollution and water pollution lot of insects are dying and which is very important. Therefore, it is very important to look at that.

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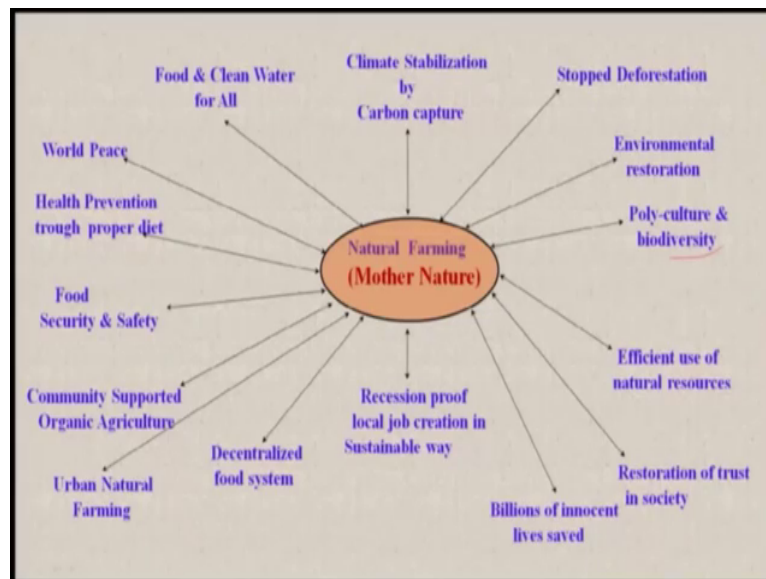


And advantages of natural farming? The farming cost can be reduced considerably, right? We are talking about a zero budget farming, that means you need not to pay any money you can do, you can integrate it in such a way that one can have zero budget farming. So that you know the farmer would not die because of indebt because they have taken lot of loans and then they could not repay because of you know calamities. So that has to be looked at in ancient days it was all integrated, right?

And the eliminate we will have to by this natural farming we can eliminate use of synthetic or the chemical fertilizers and pesticide which is not only you know bad for our health but for the mankind. And it minimizes soil erosion as I had explained earlier increasing the crops yield up to two-fold within 5 years because the soil is already being you know spoiled by the use of chemical fertilizer, it will take time to come up so and then free from harmful chemicals, artificial flavour and preservatives, right?

And we do all these things for our you know what you call food industries, that is another big problem, challenge for the people to have a good health. And eating natural foods may in fact reduce the risk of heart attacks, strokes and cancers as I had mentioned earlier and if we use the native things and then you know it will be really you can overcome lot of problems to a larger extent.

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So if you look at the natural farming is basically for the Mother Nature it is the related and you can think of there will be environment restoration, right? Because if we use it there will be environmental restoration means environment can become better if you would not pollute their water, air and other things, also soil and poly-culture and bio-diversity is important for the nature to work, right? And we as I told that inter-cropping is nothing but way of poly-culture, right? Together you are doing symbiotic relationship developed.

Efficient use of natural resources we are talking about because if we use local you need not to really spoil it and restores trust in society, because today because of food and because of business, the trust among the people are you now being reducing at alarming rate, trust is important. So therefore we can restore the trust in the society, trust is important for any relationship.

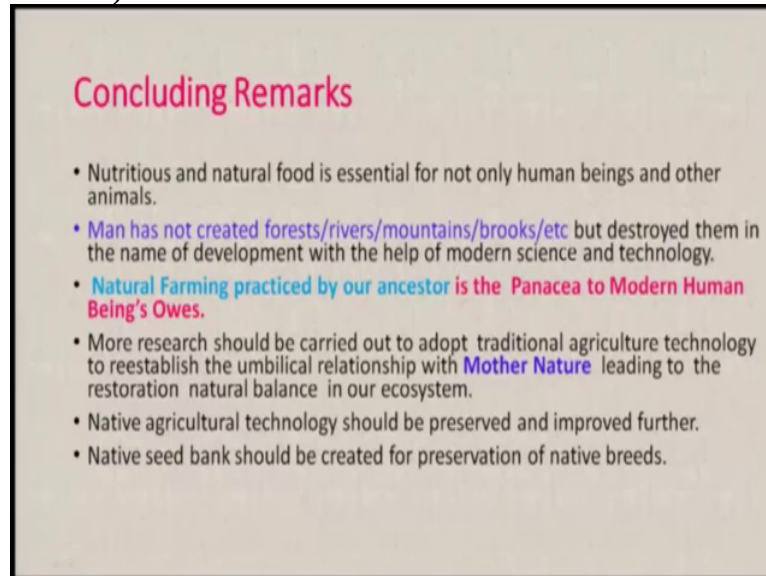
And billion of innocent people are dying because of food and that culture has to be that nobody should die without food and that humanity has to come up when you go for the natural path. And recession of proof of local job creation sustainable manner, you are going for job but agriculture will give a lot of job security, right? Food is important, anyway you are working hard to get the food and the food is what you are getting is junk or is not of good quality. So you can do means you will get the good food, right?

And decentralized food system what I had already discussed, urban natural way see earlier days people say that the villagers will you know make the, cultivate the and feed the urban people, I say no you should convert the urban areas to the you know the village, urban areas in ancient India nothing but a larger village, right? And they should cultivate their own food.

And community supported organic agriculture or the natural agriculture is important community together will be doing not individual, food security and safety. And health prevention through proper diet as I told and as I told earlier that health we need to spend that much of money.

And if you look at there is a climate stabilize by carbon captures it can be done. And food and clean water for all because what happen the water you are not contaminating because of adding chemicals and then using the urban waste and outing into rivers lot of problem can be solved and if you do all those things natural farming can give you the world peace, according to me, because the peace is being hampered because of you know you are greedy and you are trying to encroaching into others areas.

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Concluding Remarks

- Nutritious and natural food is essential for not only human beings and other animals.
- Man has not created forests/rivers/mountains/brooks/etc but destroyed them in the name of development with the help of modern science and technology.
- Natural Farming practiced by our ancestor is the Panacea to Modern Human Being's Owe.
- More research should be carried out to adopt traditional agriculture technology to reestablish the umbilical relationship with Mother Nature leading to the restoration natural balance in our ecosystem.
- Native agricultural technology should be preserved and improved further.
- Native seed bank should be created for preservation of native breeds.

So concluding remark let me tell you, nutritious and natural food is essential for not only human beings for other animals also, right? That is important keep in mind. Man has not created forests, rivers, mountains, brooks etc. but destroyed them in the name of development with the help of modern science and technology. And natural farming practiced by ancestors is the panacea to the modern human being owes as I told in the last you know as I told earlier.

And more research should be carried out to adopt the traditional agriculture technology to re-establish the umbilical relationship with Mother Nature. You know when you are in a womb there is a pipeline which comes to you for feeding from the mother, okay. So that umbilical relationship is required leading to the restoration natural balance in our ecosystem which is at stake which is in trouble today.

And native agriculture technology should be preserved and improved further not that you know you through it out as being done today and native seed banks should be created for preservation of native breeds not that you will have to depend on the multinational companies or companies to have your own seed, we should have seed varieties and then we should have a you know of our own. So this is very important point you should keep in mind that will affect because that is affecting entire life food is important. So therefore, I will with this I will stop over and I hope that and wish that you should learn something from it and apply in your life. Thank you very much.