Introduction on Intellectual Property to Engineers and Technologists

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Lecture – 36
Plant Variety Protection

So, this module, we will discuss now, only one remaining forms of IP, that is, plant variety projection. We will give an overview of another important area, that is, biodiversity and its interrelationship with the IP. We will discuss about the comparative aspects of different forms of IP's; their correlation, interrelations and conflict. We will discuss about the IP management aspects.

Now, you have knowledge about all the forms of IP. Now, how can you manage? We will discuss about little bit on valuation and commercialization aspects of IP. So, that will be the content of this module. So, understood? So, that this is the last module. So, the comparative part will help you to get an attribute or of the different features of IP and the interrelationship or the differences part. And, the IP management part will help you to how will you manage IP for one IP to another IP or how will you identify the IP all sorts of things. So, let us start with the form of IP that we call a plant variety.

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So, that class one or in module one is plant variety protection. In this regard, if I ask you that, whether plant or plant cell or let us say chlorophyll can be patented in India? Answer will be no, plant and animal as a whole or part is not patentable in India. So, now, let us say consider the situation; we have now food security act; there is a population expression, but our land area is limited. And, say somehow people are trying to occupy cultivated area for residential or business purposes. So, then what is the problem? We have to face maybe that, there may be chances of say less food; food means agriculture-based food and definitely government may not able to provide the food security. So, now, with how can you say provide solution to that type of problem and again consider a situation now a days that, natural the weather has been changing over the year; natural calamity or some aspects the agricultural crops ultimately not able to provide the output or return what aspect is supposed to provide.

Then, third aspect let us say some cases due to some insect attacked or some chemical attack, the agricultural resources get destroyed. So, what is happening? All the things somehow impacting the production of plant based product. So, now, how can you produce plant produced; let some time you call plant produced with minimum plant resources. So, there we generally, we are coming out an area called; or, say for genetic engineering, sometimes cross pollination, cross fertilization all those aspects; asexual reproduction of plants; by virtue of which we may grow a higher (Refer Time: 05:59) get a plant, which will able to produce higher yield. Just like say we have somehow limited resource sets of plant with the limited resource of plant; how we can make plant produce more; there you have that way the genetic engineering may help you to generate higher yield from a plant. So, on that context, another form of IP, the plant variety protection has evolved.

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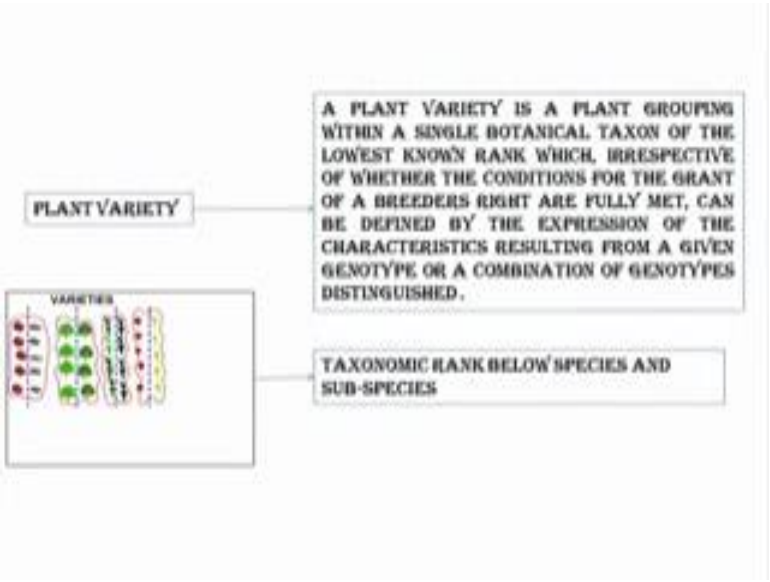

Let us see, what is the thing inside it? so, if I ask you as a biotechnologist or as a genetic engineer, what do you mean by plant variety; I am telling you the use of word variety. What it is? So, sometime we call just like I have shown you the different varieties here; let us say particular pea, not pea this one; but, different varieties. In a particular market also, if you go have a potato, this variety of potato, these are the seeds ultimately produced from that plant produce; that has generated from the particular plant variety definitely. So, what that plant variety ultimately? Producing that plant produced, the nature of the plant in different, you are getting the nature of the plants also different.

Why it is different? What is plant variety? So, plant variety is a plant grouping within a single botanical taxon. Do you know taxonomy? A botanist also taxonomic; sometime we call genotype phenotype characteristics of a plant. How the genotype characteristic changes? How phenotype characteristics changes? So, just like say some because of the agro climatic or soil condition, some phenotype characteristic changes; whether that lead to the genotype characteristic changes, which is permanent phenotype change or genotype change; you know that. So, a plant variety is a plant grouping. In a plant group is a plant grouping. Within a single botanical taxon of the lowest known rank, which irrespective of whether the condition for the grant of a breeders right are fully met, can be defined by the expression of the characteristic resulting from a given genotype; understood? Or, a combination of genotypes distinguished.

So, why I told you genotype, phenotypes? I (Refer Time: 09:00) that phenotype variety will be distinguished based on genotype specifically, because by virtue of that, ultimately, you can able to reproduce that plant. If you are not able to reproduce that plant; whether I can consider that as a plant variety? I will say no. So, genotype means by means of gene sequence or other, maybe that the variety you are producing. So, again they are telling that taxonomic rank below species and sub-species. In taxonomic rank varieties, taxonomic rank; within the taxonomy, you are trying to taxonomic rank below species and sub-species; variety remains below species and sub-species. So, what is plant variety you understood? And, if you will you be able to correlate the plant variety with reference to the issues I raised including the food security, food crisis, natural, effect of nature on plants. So, now, the variety part you understood.

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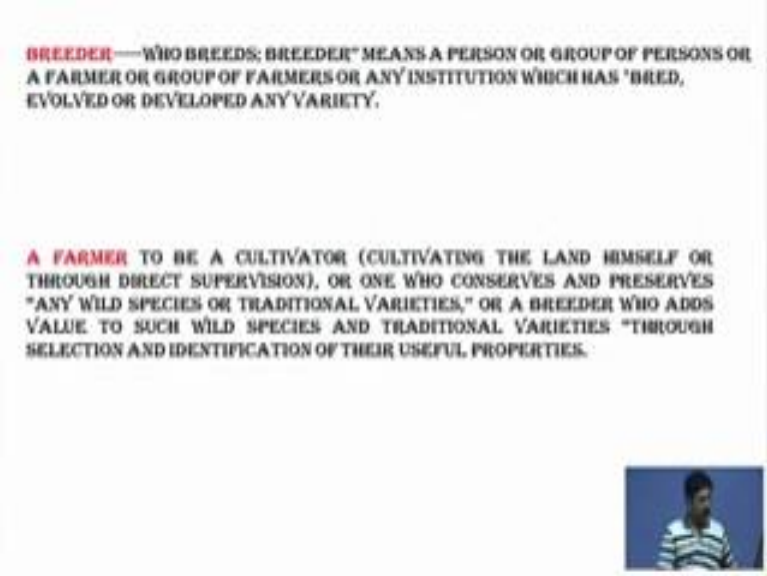

Now, whether somebody creates a new variety of a plant, I will whether I will consider that as his intellectual contribution or not? So, yes, definitely if I try to put the theories behind IP, I can definitely link that, that yes, this is also a creation of mind; here also investment; here also utility; here also labor; all the things involved. So, why not give some sorts of exclusive right to the persons, who developed particular plant varieties. Benefit for the person; he will get maybe in the IP in the form of exclusive right, if it is protected by means of IP. Benefit for society they will get varieties of plants; maybe that is giving higher yield. So, considering that context, that plant variety protection has come up as another form of intellectual property. But, there problem lies that, say whether our

farmer has to procure the material or agricultural produce by means of seed from those person, who will ultimately develop that; using genetic engineering, that produce higher yield. So, whether this will affect the rights of the farmer? So, there is the question. So, for that reason, in India, we will consider the two aspects: one is breeder; another is farmer. And, we try to our statute has tried to make a balance between these two persons or two classes of people: breeders and farmer. So, breeders' rights and farmers' rights we may refer within the purview of plant variety protection legislation in India

So, now, understood, who can be considered as breeder and who can be considered as farmer. You understood plant variety. And, I was questioning the breeders is producing the variety. So, the breeder means who breeds. So, let us say, in normal sense, you may consider breeder means who breeds; creator means who creates; similarly, breeder means that breeds. Now, breeder means a person or group of person or a farmer; even farmer can breed, there is no problem; or, a group of farmer or an institution, which has bred evolved or developed any variety.

So, if a person developed; I am putting a person developed a new variety developed a any variety; which variety? Plant variety; I will consider that is a breeder for that plant variety. So, that way even farmer can also breeder [FL]. The farmers who is farmer then? A farmer to be a cultivators, cultivating the land himself or through direct supervision or one who conserve and preserve any wild species or traditional varieties or a breeder, who adds value to such wild species and traditional varieties; so, selection and identification of their useful properties. You are getting some aspect of superimposition between the farmers and breeders. So, breeder is the person who breeds; farmer is the person who cultivates either directly or through supervision, so understood that part say which is farmer, who is breeder.

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So, now, you understood that, why need protection? The breeders variety and let us say farmer variety. I will suggest say to make a balance, we require protection. So, what are the varieties we are getting?

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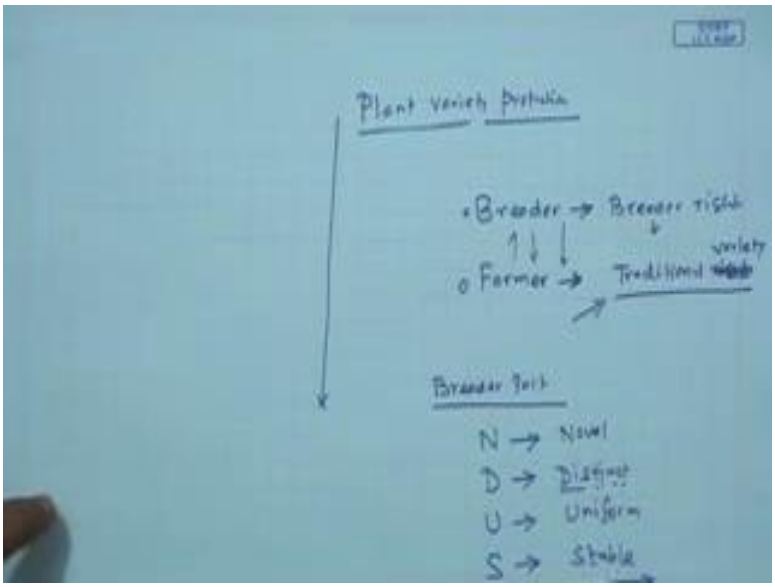

Now, let us say breeder; two classes we are getting: breeder and farmer. So, breeders and farmer; so, breeder who the breeders and farmer; so, who will breed? Breeders; who will cultivate? Farmers; and also, there may be a cross like this. Now, why breeders will breed? Why the farmers whether the breeders things will influence the farmers things or

vice versa? So, mostly the breeders' things may involve the farmers' things. So, we may have to make some balance between the breeders and farmers. So, now, the breeders' rights breeders should have rights over the breed. And, let us say farmers should have rights over the variety. I am putting that a traditional variety. Maybe farmers are cultivating; they do not have any genetic engineering sense. And, they are cultivating over the year, a particular variety, traditional variety breeders' right traditional right; or, let us say traditional variety I am putting out here variety. So, they have the rights.

Farmer rights exist in traditional variety; breeders' right exists in breeding variety. Let us say breeders' right and farmers' right; two rights we are getting: breeders' right and farmers' right. So, breeders' part will come within the purview of plant variety; even farmer if breeds, then that also come up within the purview of plant varieties. So, why you need plant variety protection? If I ask, then let us say which can be we can summarize to increase the productivity and to produce a variety that are resistant to paste; to stimulate in research and development. Three points you may put to increase the productivity. Yes, let us say genetic engineering; by virtue of that, you are producing a plant variety, which produce plant, which will produce better yield; that will resist some paste. And definitely, if you give protection, research and development in that field will be – will be ultimately further progressed.

Now, Indian plant variety protection act; they protect different varieties. Just like a novel variety, you understood novel naming itself; extant variety, which are getting into extant; farmer variety and essentially derived variety. The four varieties that will come within the purview of these legislations, farmer variety will also get protected and breeder varieties also get protected. So, now, the issue that, whether they require some characters? Whether the farmer varieties or breeder variety just like say when we try to frame a particular form of IP; then, we try to create some character; that just like a patent, we call novel. Again I am repeating same thing the distinct (Refer Time: 18:40) and others; we are going to (Refer Time: 18:42) whether similarly, what character the breeder variety or farmer variety should meet to get it protected within the purview of this legislation? So, they put for breeder variety, they created the characteristic. So, breeder part, they put up the characteristics. Sometime we call N D U S. What do you mean by that? New means new or novel, distinct, uniform stable N D U S that characteristic.

And, farmer the traditional variety I have already mentioned; traditional means they are practicing over the year a particular variety. So, what do you mean by new? N means novel means that variety should be new. What do you mean by new? That not existence. So, not existence; then, distinct it should be distinguishable from the other variety specifically; just like say when I have shown you in the photographs that, this will be distinguished with reference to the one variety of distinct from the others. So, it should be distinct. Uniform what do you mean by uniform? That is not like this; you are cultivating in a particular area; only particular plant having that attributes, not whole the area. So, if you are thinking of all the plant having the different varieties. So, that way that, this is not uniform; that variety is not in uniform situation uniform part, should be uniform.

And, stable means because of some conditional changes, or subsequently the seed will able to produce that variety. So, if we do not able to produce that variety subsequently, what is the utility of giving that right? Just like say let us say a particular tree (Refer Time: 21:22). So, that lasts for a particular maybe consider like that is another part. And, particular other varieties just like paddy, wheat and others. It grows; then, you have ultimately you have to take it out. So, that way the character part for breeder variety, we are telling new, distinct, uniform, stable these four things that variety should meet. Then, it will be registrable under the plant varieties protection act. Here I forgot to mention the US tried to protect it in the purview of plant patent. They have also called plant patent for asexual reproduced plant. So, now, the breeders part and farmers part; farmer means all these characteristic is not required in traditional variety; they are getting rights over the traditional varieties.

So, now, we have to make a balance between the farmers' rights and breeders' rights. Let us say whether if the farmers want to procure some seeds from breeders; now breeder is charging heavily. So, if you in our act, we have given provisions; or, some sorts of privileges have been provided for the farmers with reference to the breeders and seed. So, they can just like say get some seeds from the breeder like this. And so that way that farmer variety and breeders' variety both can be protected under the plant variety protection act. The character breeder variety should meet; that is novel, distinct, uniform, and stable. And, there will be a period of protection; or, for tree and vines, it is 25 years. That period of protection is 25 years. And, farmer variety you are telling that traditional

varieties. So, what is the thing you have to remember here? That what the there is another form of IP in the form of a plant variety protection; plant variety protection means the breeder variety requires some character that is new, distinct, uniform, stable.

So, there is a procedural requirement for registration of breeder varieties and also farmer varieties. And, for this say definitely that, in India that, again these forms of IP will come; just like say I referred that is a plant variety will come. Department of biotechnology that is say DBT – department of biotechnology within that part; it is coming plant variety protection. So, that way, also another ministry; when we have discussed about IC layout, we told MIT – ministry of information technology; here department of biotechnology – DBT is involved in respect of governance and registration of the plant varieties.

So, the procedure also there is particular form is there; with that form, you have to apply for registration of that varieties; then, the examination and subsequent steps are there for registration of your plant varieties; and, similar way that you will be able to enforce your rights. But, definitely, some sorts of privileges have been provided for the farmers with reference to the sow, re-sow and storing of seeds. So, that way our legislation has tried to make a balance between the rights of the farmers and rights of the breeders. So, that way that I am not going in detail about the legislations; only you have to remember the basic things with reference to the plant variety specifically. What are the different variety is getting protected get protection in India; who will be considered as a farmer; who will be considered as breeders; what are the rights have been provided just like sow, re-sow, cultivate all those rights have been provided to the breeders sale, selling; all sorts of rights have been provided to the breeders. Similarly, right have been provided to the farmers; along with that, farmer has some sorts of privileges; so, privileges with storing all the things.

And, what are the different varieties getting protected in India just like say novel variety, extant variety, farmer variety, essentially derived variety, is getting protection in India although no properly defined for essentially derived varieties are there. So, that part you remember; that is sufficient. But, how you can create the rights over plant varieties; that how, what you analyzed the character required for say novel varieties; just like a new, distinct, uniform, stable that criteria, there lies the role of technology specifically.

Whether that technology by means of say genotype, you are able to produce variety having these sorts of characteristics as new, distinct, uniform or stable.

So, there lies the role of knowledge in the form of biotechnology and in the form of genetic engineering. So, using that knowledge, you may create different plant varieties and get it protected. Just like say you know the incident about the Bt brinjals – not within the purview of plant varieties, with reference to the patenting of that, so that there are other issues with reference to that plant varieties just like a toxicological issues, environmental issues all those things are also there; that are different areas with reference to not within the purview of IP, but other areas.

So, let us stop it here with the limited knowledge of plant variety specifically in the forms of IP. Next part, I will discuss about another important area biodiversity.

Thank you.