



POPLAR RESEARCH INSTITUTE



Poplar Development in TURKEY

Presentation
Ferit TOPLU
Forest Engineer



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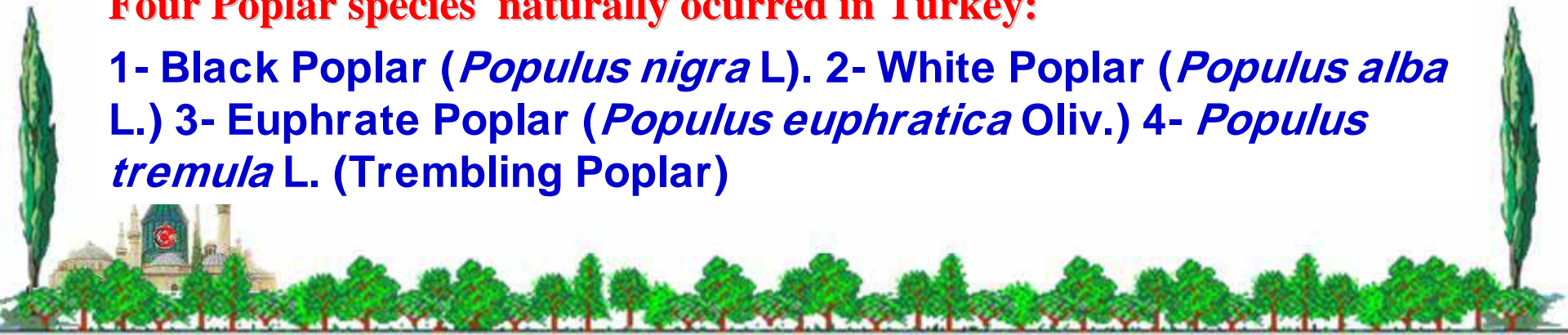
Izmit – Kocaeli / TURKEY





Four Poplar species naturally occurred in Turkey:

1- Black Poplar (*Populus nigra* L). 2- White Poplar (*Populus alba* L.) 3- Euphrate Poplar (*Populus euphratica* Oliv.) 4- *Populus tremula* L. (Trembling Poplar)



Black Poplar var. *italica*



Black Poplar var. *usbekistanica*



Black Poplar var. *caudina*



The most widely cultivated varieties of black poplar *italica*, *usbekistanica*, *afghanica*, and *caudina* distributed throughout Anatolia.



White poplar is naturally occurred along watercourses and in areas with heavy soil conditions (drainage, saltiness, marshiness, heavy soil etc.) throughout Anatolia.





Populus euphratica is found along the Euphrate, Goksu and Botan rivers in south and southeast Turkey. Natural trembling poplar stands can be seen in mountaineous areas throughout Anatolia.



□ Black Poplar (*Populus nigra* L.) has a wide distribution mostly along rivers and streams. Black Poplar has considerable contributions in both rural and national economies in Turkey. Native populations of Black Poplar are threatened by urban extension and mismanagement of natural resources in rural areas. In recent years, effective efforts have been made on breeding and conservation of Black Poplar genetic resources on the basis of determined strategy. In the framework of this strategy, various clone banks (with selected germplasms) and clone trials (both in the nurseries and fields) have been established in different climatic regions of Turkey. Domestic black poplars are mostly used in the breeding programs because of its adaptability to continental conditions. *Populus nigra* is a very important species for inter-specific crossings with *Populus deltoides* to create superior hybrid clones.



Natural occurrence of Black Poplar



Gene conservation area of Black Poplar



Black Poplar clone trial : Ankara



Selected germplasm



Hyb.Pop.clone trial

Ex-situ and in-situ conservation programmes have been in progress in Turkey. Under these programmes, around 700 Black Poplar individuals have been selected from their natural range. Apart from this, 550 Hybrid poplar germplasm introduced from the other countries. Six clone banks and many clone trials were established by using these germplasms in different ecologic regions of Turkey.



Gene Conservation Area



Also, classic intra and inter specific crossing works were carried out in our institute. During these works mostly Black Poplar and *Populus deltoides* were used. At the end of these works many Black poplar and hybrid poplar clones were created .

Some of them are:

Kocabey, Geyve, Behiçbey (Black Poplar), Samsun (*Populus deltoides*), Izmit (*Populus deltoides*)



Different phases of artificial hybridization activity

Poplar clones used in plantations in Turkey:

P. deltoides clones:

SAMSUN (ex. I-77/51);

Hybrid clones:

I-214 and **I-45/51**;

(Italian selections)

Black poplar clones:

KOCABEY (ex. Tr. 77/10),

GAZI (ex. Tr. 56/52),

ANADOLU (ex. Tr.56/75).



Black Pop.clone:
ANADOLU



P. deltoides clone
SAMSUN



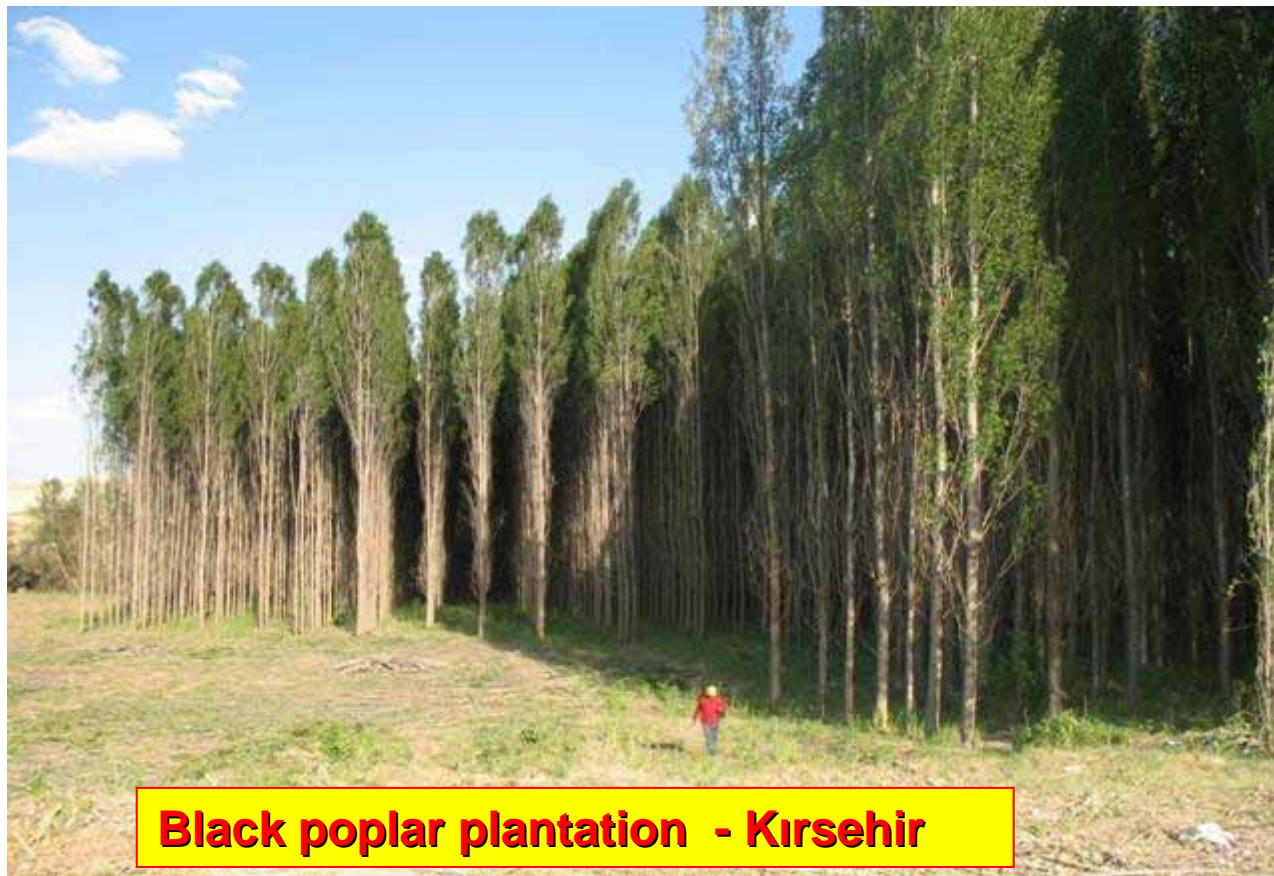
Black Pop. clone: **KOCABEY**



Hybrid clone: **I - 45/51**



Hybrid clone: **I-214**



Black poplar plantation - Kirsehir



Hybrid poplar plantation

Turkey has approximately 138 500 ha of poplars in plantations and natural areas, of which 69 000 ha are black poplar , 7 000 ha are aspen, 950 ha are white poplar, 550 ha are Euphrates poplar and 61 000 ha consist of various clones of hybrid poplar. Annual wood removals from poplar plantations in Turkey are 3.87 million m³.



Euphrate poplar



Poplar wood is consumed by different sectors as rural uses (costructional round wood-fuel wood) and industrial uses (construction-furniture-packing-fibreboard-particle board-pulp and paper and others). In Turkey.



Poplar wood processing workshop



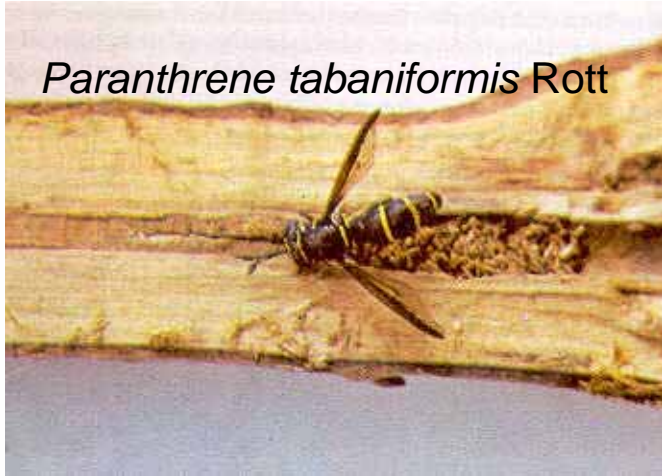
Packing boxes made from poplar wood



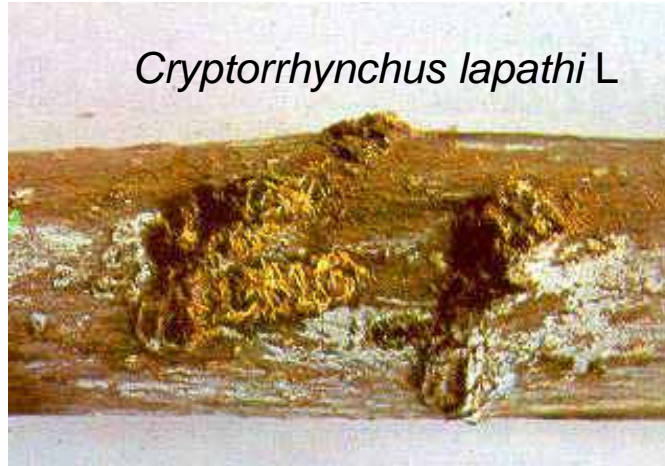
Processed poplar wood



Important insects damages broadly observed in the Poplar nurseries and plantations are belong to the species of *Paranthrene tabaniformis* Rott., *Cryptorrhynchus lapathi* L., *Pygaera anastomosis* L.,



Paranthrene tabaniformis Rott



Cryptorrhynchus lapathi L

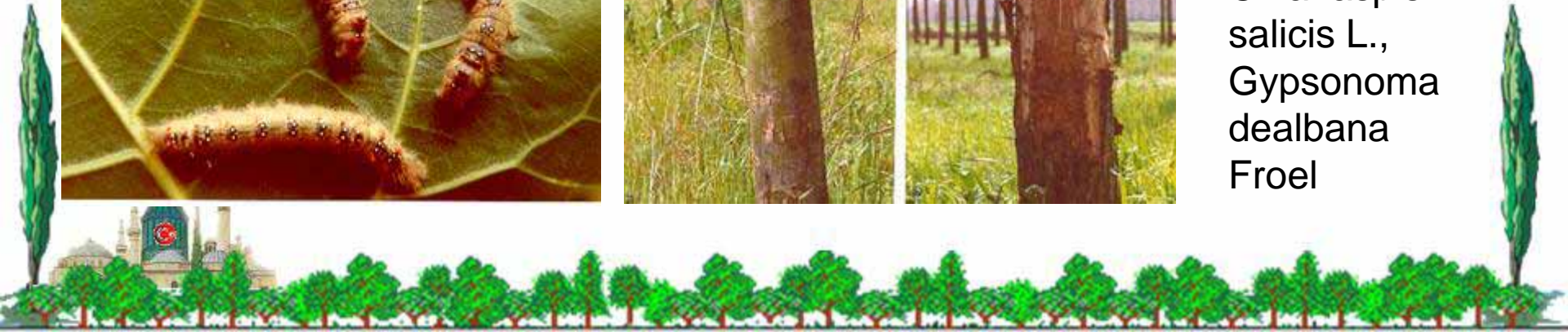


Pygaera anastomosis L.

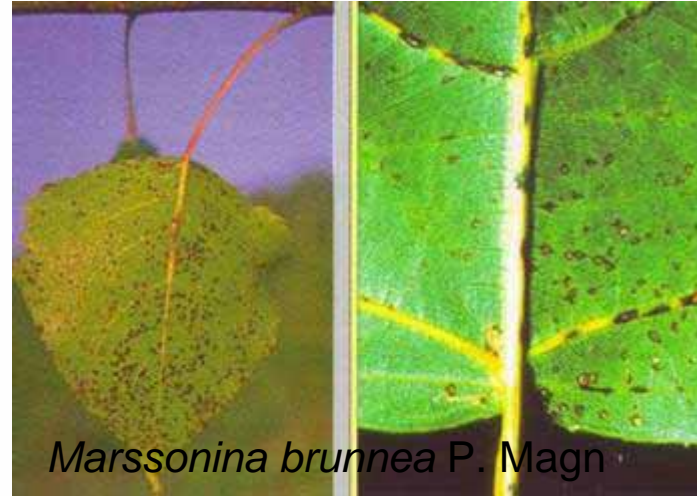


Agrilus ater L.

Melanophila picta Pall.,
Saperda Populnea L.,
Capnodis miliaris Klug.,
Melolontha melolontha L.,
Aegeria apiformis L.,
Hyphantria cunea Drury,
Chianaspis salicis L.,
Gypsonoma dealbana
Froel



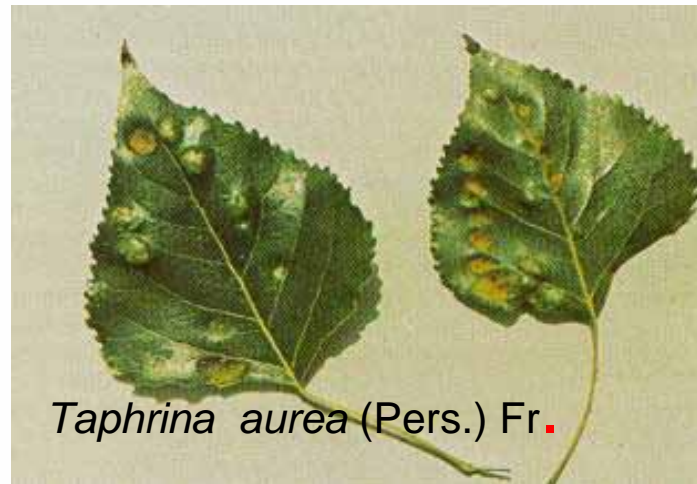
Because of unfavourable environmental conditions , Poplar plantations of Turkey can be affected mostly by the maladies of *Melampsora allii-populina* Klep., *Marssonina brunnea* P.Magn., *Septoria populi* Desm., and *Taphrina aurea* (Pers) Fr.



Marssonina brunnea P. Magn



Septoria populi Desm



Taphrina aurea (Pers.) Fr.

The other maladies can be seen in Poplar plantations and Nurseries are : *Venturia populina* (Vuill.) Fabric., *Armillaria mellea* (Vahl) Quel., *Cytospora chrysosperma* (Pers) Fr., *Septoria musiva* Peck., *Heterobasidion annosum* Fr. Bref





In agroforestry activities, maize, melon, beans, hazel nuts, sugar beet and tomatoes are used.

Agroforestry: (Poplar+Maize+Hazel Nut)



Row Plantations of Black poplar around agric



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THANKS

Presented By

Ferit TOPLU

Forest Engineer.



ISP - Bisoffi

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