

STUDIES ON POPLAR BORERS IN NORTHERN AREAS AND CHITRAL, PAKISTAN

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Abstract

Aeolesthes sarta and *Aegeria* species were recorded in Northern Areas and Chitral infesting *Populus nigra*, *P.x-euramericana* and *P.alba*. In Gilgit and the adjoining areas *A.sarta* caused 80 to 100% infestation of *P.x-euramericana*. At Gahcuch, 70 to 90% each at Jaglot and Sherqilla and 60 to 80% each at Singal, Gulmati, Babur and Gulabpur. *P.nigra* was infested by the pest from medium to heavy at Singal (60-80%), Jaglot, Sherqilla and Ghich (50-70%) each, while its damage on *P.alba* ranged from 5 to 30% in these areas.

In Skardu and adjoining areas heavy infestation by *A.sarta* occurred on *P.nigra* ranging from 90 to 100%, 80 to 100%, 50 to 100% and 50 to 90%, respectively, at Phrangbama, Damboodas, Hussainabad and Skardu town. The pest also infested *P.x-euramericana* from 10 to 20% at Skardu town and 5 to 10% in the adjoining villages.

In Chitral valley *A.sarta* severely damaged *P.nigra* at Uchu (90-100%), Snoghur (70-100%), Parabek (50-100%) followed by Garamchishma (70-90%), Mastooj (70-80%) and Chitral town (50-80%). *P.x-euramericana* was infested by the pest from 10 to 40% in these areas.

Aegeria species caused minor to low infestation of the poplars in Gilgit, Skardu and Chitral valleys.

Management control such as removal of the aged and heavily infested poplar trees, harvesting poplars on maturity, propagation of the resistant poplar species, *P.alba* in almost all localities, replacement of poplar species with one another in some localities and growing other plant species as poplar substitute in certain areas were suggested for reducing borer population and subsequent wood losses caused by these borers.

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Introduction

Northern Areas and Chitral are having high mountains where winters are very cold with frequent frosts and snowfall and summers are mild. *Populus alba* and *P.ciliata* are indigenous to this region. *P.nigra* and *P.x-euramericana* are introduced species. Among these *P.nigra* is raised on large scale in many places of Gilgit, Skardu and Chitral. Poles of these poplars are used as timber for construction purposes and remnants as fuelwood.

Unfortunately stem borer, *Aeolesthes sarta* causes heavy damage to poplar trees in these areas. A bark borer *Aegeria* sp., a clear winged moth, also causes minor infestation of poplars in some localities.

Stebbing (1914) reported *A.sarta* as borer of *Platanus orientalis*, *Populus alba*, *Salix alba* and *S.babylonica* in Balochistan. Beeson (1941) recorded it on *Acer cultratum*, *Aesculus indica*, *Corylus colurna*, *Juglans regia*, *Platanus orientalis*, *Populus alba*, *P.euphratica*, *Prunus recemosa*, *P.communis* and *Pyrus malus*. Chaudhry *et al.* (1966) collected it from *Platanus orientalis* and *Populus* and *Ulmus* species in Quetta. Chaudhry *et al.* (1980) reported it as serious pest of *Populus nigra* in Peshawar valley. They also collected it on *P.nigra*, *P.x-euramericana*, *P.alba*, *P.ciliata*, *Malus pumila*, *Prunus amygdalis*, *Prunus armeniaca*, *Pyrus* sp., *Salix* sp., *Juglans regia* and *Platanus orientalis* in Quetta, Peshawar, Dir, Chitral, Swat and Rawalpindi.

Materials and Methods

Northern Areas were visited in June/July, 1991 and July, 1992 while Chitral in June, 1993 to record borers infestation on poplars. The following localities were visited in each zone.

GILGIT: Aliabad, Babur, Gahcuch, Ghich, Gulabpur, Gulmati, Goharabad, Jaglot, Oshikhandas, Rahimabad, Sherqilla, Singal.

SKARDU: Astana, Damboodas, Gamba, Hashupi, Hotto, Hussainabad, Kachura, Phrangbama, Skardu town, Shigar, Triku, Thontonpi, Zongkhor, Yelow.

CHITRAL: Booni, Chapali, Chitral town, Garamchisma, Mastooj, Parabek, Snoghur, Uchu.

Each locality in Northern Areas and Chitral was visited personally and extent of the borer infestation was determined by visual observations on poplar trees almost on farmlands. At each locality 10 trees of poplar species were observed randomly at 10 different places and recorded as infested and uninfested on the basis of presence and absence of the borers infestation on the main trunk of the trees. The data were compiled and the percent infestation was worked out for each poplar species for each locality.

Results

Sapwood borer, *Aeolesthes sarta* and clear winged moth, *Aegeria* sp. were recorded as borers of poplar species in Northern Areas and Chitral.

Table 1. Percent infestation of poplars in Gilgit, Skardu and Chitral Areas.

Locality	P.nigra	P.x-euramericana	P. alba
GILGIT			
<i>Aeolesthes sarta</i>			
Gahkuch	10-30	80-100	10-30
Jaglot	50-70	70-90	-
Sherqilla	50-70	70-90	10-20
Singal	60-80	60-80	10-20
Gulmati	10-30	60-80	05-10
Babur	10-30	60-80	10-30
Gulabpur	10-30	60-80	10-30
Ghich	50-70	50-70	10-20
Goharabad	01-05	40-50	05-10
Oshikhandas	30-40	30-50	10-20
<i>Aegeria</i> sp.			
Aliabad	10-30	02-05	02-05
Rahimabad	10-30	02-05	02-05
SKARDU			
<i>Aeolesthes sarta</i>			
Phrangbama	90-100	0	-

Locality	P. nigra	P. x-euramericana	P. alba
Damboodas	80-100	-	-
Hussainabad	50-100	0	-
Skardu town	50-90	10-20	-
Triku	50-70	-	-
Yelbow	50-70	-	-
Hotto	50-60	05-10	-
Astana	40-60	05-10	-
Gammba	40-60	05-10	-
Zongkhor	40-60	05-10	-
<i>Aegeria</i> sp.			
Shigar	10-30	0	-
Hashupi	10-30	0	-
Thontonpi	10-30	0	-
Kachura	05-10	0	-
CHITRAL			
<i>Aeolesthes sarta</i>			
Uchu	90-100	30-40	0
Snoghur	70-100	10-20	-
Parabek	50-100	15-30	0
Garamchisma	70-90	10-15	0
Mastooj	70-80	20-30	15-20
Chitral town	50-80	10-15	-
Chapali	15-20	0	0
<i>Aegeria</i> sp.			
Booni	05-10	-	-
Chapali	05-10	-	-
Mastooj	05-10	-	-

0 = No borer infestation - = No tree

The table shows that in Gilgit and adjoining areas *Aeolesthes sarta* caused 80 to 100% infestation of *P. x-euramericana* at Gahcuch, 70 to 90% each at Jaglot and Sherqilla, 60 to 80% each at Singal, Gulmati, Babur and Gulabpur, 50 to 70% at Ghich, 40 to 50% at Goharabad and 30 to 50% at Oshikhandas.

P.nigra was heavily infested by the pest at Singal (60-80%), Jaglot, Sherqilla and Ghich (50-70%) each followed by Oshikhandas (30-40%) and Gahkuch, Gulmati, Babur and Gulabpur (10-30%) each. The pest infested *P.alba* from 10 to 30% each at Gahkuch, Babur and Gulabpur and 10 to 20% each at Sherqilla, Singal, Ghich and Oshikhandas.

In Hunza valley *A.sarta* was not found, however, *Aegeria* sp. infested *P.x-euramericana*, *P.nigra* and *P.alba* from 2 to 30% in Aliabad and Rahimabad villages.

In Skardu areas heavy infestation of 90 to 100%, 80 to 100% and 50 to 100% occurred on *P.nigra*, respectively, at Phrangbama, (Shigar valley), Damboodas (Skardu-Gilgit road) and Hussainabad (Skardu) followed by Skardu town (50-90%), Triku and Yelbow (50-70%) each, Hotto (50-60%) and Astana, Gamba and Zongkhor (40-60%) each. *P.x-euramericana* received minor infestation by the pest ranging from 5 to 10% each at Hotto, Astana, Gamba and Zongkhor and 10 to 20% at Skardu town. *Aegeria* sp. was found infesting *P.nigra* from 10 to 30% each at shigar, Hashupi and Thontonpi in Shigar valley and 5 to 10% at Kachura in Skardu. It did not attack *P.x-euramericana* in Skardu and adjoining areas.

In Chitral valley poplars are raised on large scale in Garamchishma, Parabek, Booni, Mastooj and adjoining villages. Heavy infestation by the borer, *Aeolesthes sarta* was recorded on *P.nigra* at Uchu (90-100%), Snoghur (70-100%), Parabek (50-100%), Garamchisma (70-90%), Mastooj (70-80%), and Chitral town (50-80%). In Parabek *P.nigra* trees of 15 to 20 years age were completely damaged, killing many of them due to debarking and extensive tunneling in the sapwood. The pest also damaged *P.x-euramericana* from 10 to 40% in all these localities. *P.alba* was also infested from 10 to 20% at Mastooj. *Aegeria* sp. caused minor infestation of *P.nigra* (5-10%) each at Booni, Chapali and Mastooj.

Recommendations

On the basis of these studies the following management practices were suggested for application by the farmers and AKRSP in different localities of Northern Areas and Chitral for reducing borers infestation and wood losses.

The farmers should be influenced to remove the aged and heavily infested poplar trees to destroy the harboring grubs of the pest for future safety (ii) to

harvest poplars at an early stage of maturity to curtail the breeding sites of the borers (iii) to determine the marketing potential of poplar wood in the local market as well as down country to encourage the farmers to sell their poplars at the right age and (iv) to setup small crate manufacturing industries in Gilgit, Skardu and Chitral to attract the farmers to sell their poplars on maturity.

As far as possible, poplars except *P.alba*, should be replaced by *Ailanthus*, *Pinus alderica*, *Robinia pseud-acacia* and *Elaeagnus* in Gilgit and Skardu while *P.ciliata* and *P.alba* can be grown in Hunza valley with no borer infestation. *P.nigra* being least infested by *Aegeria* sp. can also be raised in these areas. In Skardu Russian olives should also be encouraged to replace *P.nigra*. In Chitral valley *P.alba* should be propagated and *P.nigra* be phased out slowly for reduction of borer infestation.

The suggested measures will ultimately reduce the borer population as well as their infestation in Northern Areas and Chitral resulting in quality wood production of poplars with positive impact on the economy of the farmers.

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