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Short Communication

# Leafy Mistletoes: A Threat to Wild Apricot Plantations in Arid Temperate Zone of Himachal Pradesh

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Wild apricot (*Prunus armeniaca* L.) family rosaseae, locally known as 'Chuli' is an important deciduous tree of arid temperate zone of Himachal Pradesh. This tree has ecological as well as economic importance in the region especially in Kinnaur District of the state. It is considered as nature's gift to the people of the region. Every part of the tree is useful. Fruits are consumed as fresh and after solar drying and are sold at premium price as dry fruits. Fruits are also used for making wine by the local people. Kernels are used for extraction of oil which is of medicinal value and add to the income of the farmers. Wood and hull are used as fuel and leaves serve as good fodder for cattle. The tree is native to this region and grows naturally. For last five to six years, the productivity of this species has declined to a great extent, which has adversely affected the natural regeneration process. To find out the reasons behind the decline in productivity of wild apricot, a survey of different localities in Kinnaur District of Himachal Pradesh was conducted during last three years.

During survey a large number of wild apricot trees were found parasitized by leafy mistletoes, which are parasitic plants (Table 1). The overall incidence was found to be 36%. The incidence ranged between 18.3 to 49.0%. In the localities like, Nichar, Kothi, Telangi, Nugalsari, Khowangi, Chaura and Kilba the incidence was more than 40%. Girdling of the branches was also noticed at the point of infection. In some cases die back of the shoots as a result of mistletoe infection was also observed. At various localities girdling was observed to be 0.1 to 10.3% (av. 5.1%) and shoot die back was observed to be 0 to 1.5% (av. 0.6%). However, complete death of tree was not observed due to mistletoe infection, but the parasitized branches did not bear flowers and fruits.

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Observations on the parasitizing plant species revealed that these were evergreen, parasitic, their aerial stems and shoots were yellowish green to green. The plants measured from few centimeters to one meter in length. The leaves were yellowish green to green, ovate and opposite. During dormant season, when infected trees had leaf fall, the parasitic mistletoes were conspicuous as distinct clusters of green shoots on the host trees. Mistletoe plants were dioecious. Their fruits were globose, whitish berry, 3 to 6 mm in diameter. Each berry contained single seed that was coated with a sweet, sticky, gelatinous pulp. Observations on the embedded portion of the mistletoe revealed

*Table 1. Incidence of mistletoes on wild apricot in arid temperate zone of Himachal Pradesh*

| Locality | Incidence of mistletoe (%) | Girdling of branches (%) | Twig die-back (%) |
|---|---|---|---|
| Chaura | 43.6 | 7.3 | 1.0 |
| Kalpa | 34.4 | 8.1 | 0.1 |
| Karchham | 30.3 | 2.9 | 0.5 |
| Khowangi | 44.1 | 8.4 | 1.0 |
| Kilba | 40.8 | 5.0 | 0.5 |
| Kothi | 48.0 | 10.3 | 1.5 |
| Nichar | 49.0 | 6.4 | 1.0 |
| Nugalsari | 45.1 | 9.1 | 1.0 |
| Pangi | 40.9 | 8.5 | 0.1 |
| Pooh | 18.3 | 0.1 | 0.0 |
| Powari | 30.7 | 3.3 | 1.5 |
| Purbani | 20.7 | 0.2 | 0.0 |
| Rarang | 37.0 | 5.1 | 0.1 |
| Ribba | 35.1 | 4.3 | 0.1 |
| Sangla | 32.2 | 2.2 | 1.0 |
| Sharbo | 24.0 | 0.8 | 0.5 |
| Spillo | 27.1 | 2.6 | 0.0 |
| Tapri | 36.4 | 7.1 | 0.6 |
| Telangi | 47.2 | 5.4 | 0.8 |
| Mean | 36.0 | 5.1 | 0.6 |

formation of cortical haustoria and sinkers extending up to the phloem and xylem tissues and were lacking chlorophyll. On the basis of the morphological characters of the mistletoe plants and their analogy with Hawksworth (1974) and Kuijt (1969), these were identified to be *Viscum album* L., family: Viscaceae.

Parasitization of wild apricot trees with leafy mistletoes was found to be the major reason behind the low productivity of these trees. Leafy mistletoes are therefore a threat to the natural plantations of wild apricot which is ecologically and economically important tree species of arid temperate zone of Himachal Pradesh.

## References

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Kuijt, J. 1969. *The Biology of Parasitic Plants*. University of California Press, Berkley and Los Angeles, 246 p.