



TREATMENT OF STANDING TREES TO PROTECT WOOD LOSS IN GMELINA ARBOREA

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ABSTRACT: The present article is describe a method of treatment of damage branches and defects on main stem leading to spoiling of wood. The treatment is based on application of modified Chaubattia paste, which includes both fungicide (ridomil, 0.2%) and insecticide (monocrotophos @ 1.5 ml per liter). The dead or infected branch of tree is removed from the main stem and the cut-ends were treated with modified Chaubattia paste. After 9 months of treatment healing of cut ends is more rapid (28.6% more) as compared to untreated control. The cavities develop on the main stem was treated by filling of soil based paste containing both fungicide and insecticide prevent further decay of wood. The method described here can also be applied on any other tree species in similar ways.

Keywords: Cattle damage, Chaubattia paste, die back, fungicide, insecticide, stems cavities

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Gmelina arborea Roxb. (Verbenaceae) is a rapidly growing tree species which is drought tolerance

and excellent wood properties, ranked second after teak. It emerged an important tree for plantation in central India. To encourage its plantation, Madhya Pradesh Forest Department declared it transport permit (TP) free. The plantation of this tree is damage by insect pests, diseases and animals. Browne (1968) provides a general review of the insect pests of *G. arborea* and other plantation species in his book. Stem insect, *Xyleborus (Euwallacea) fornicatus* has been reported (Dey, 2016; Kumar, 1994; Meshram et al., 2001; Nair and Mathew 1988). The wood boring larvae of *Sahyadrassus malabaricus*, has been described from Kerala (Nair, 1982), and the bee-hole borer, *Xyleutus ceramic* has been reported from Malaysia (Abe, 1983). Termites are known to attack *G. arborea* in some situations; several termite species have been identified damaging to live trees (Bayode 1979). Significant damage by browsing mammals, both wild and domestic to young *G. arborea* has been widely reported in Asia, especially by deer and cattle (Baconguis et al. 1978; Duff et al. 1984; Debarking by elephants was reported from Karnataka, India (Vanaraj 2001). Top dying and mortality in plantations of *Gmelina arborea* in central India was reported (Harsh et al., 1992). Various aspects including health problems are given in a monograph on this trees species (Tewari, 1995).

Standing trees, both mature and young develop cankers (splitting of bark and exposing wood), wounds or dying of main stem or branches from the top. These defects may be due to pathogens (in most cases due to infection of fungi), insects, physical damage during forest operation, by animals or due to high intensity of winds. Injuries were also caused by frost or water stressed conditions. Trees with such injuries are more likely to succumb with die back and ultimately die. Such trees are needed to take care to increase their period of life to get more harvestable wood at the end.

The present article deals procedure of treatment of damage branches and defects on main stem leading to spoilage of wood. The treatment based on application of modified Chaubattia paste, which include both fungicide and insecticide. The method described here can be also applied on any other tree species.

MATERIALS AND METHODS

Symptoms showed by such trees are includes cankers, wounds and die back. Cankers develop on the main stem of the tree or on woody branches showing depression on the bark which increases in size along with the age (Fig. 1). Later on bark start dying with cracking and ultimately the wood of stem exposed to air (Fig. 2). This symptom is known as canker. The canker on main stem increases in size causing decay and deterioration in exposed wood and ultimately makes the wood useless and death of trees at last. Wounds developed due to infection of pathogens/ insects or