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Note

Isolation of 3β-hydroxyolean-12-ene and related triterpenoids from the leaves of *Terminalia arjuna*

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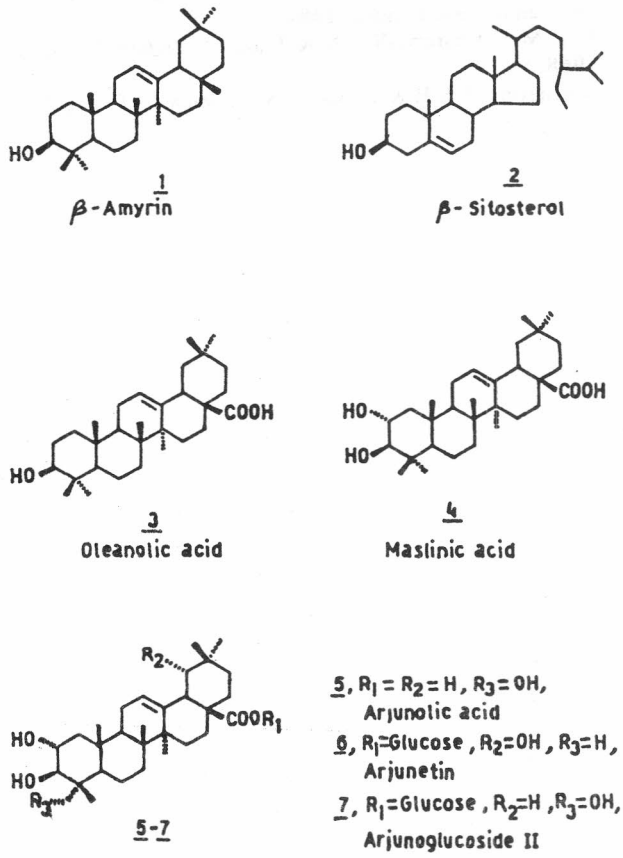
Pet. ether extract of the dry leaves of *Terminalia arjuna* contains β-amyrin, β-sitosterol and oleanolic acid whereas the methanol extract contains maslinic acid, arjunolic acid, arjunetin and arjunoglucoside II.

The plant interacts with herbivore and produces new chemical deterrent and attractants, whereas the herbivore evolves new sensory capacity to discriminate and produce new digestive enzymes for detoxification and utilization of plant secondary metabolites[1].

Terminalia arjuna is one of the primary food plants of polyphagous tasar silkworm *Antherea mylitta*[2]. Different triterpenoids have been isolated from root[3], bark[4] and heartwood[5] of *T. arjuna*, but a detailed chemical investigation of the leaves of this plant has not been reported. We report here for the first time the isolation of triterpenoids from the leaves of *T. arjuna* in an attempt to understand the role of triterpenoids in the host plant-insect herbivory interactions.

The dry leaf powder of *T. arjuna* was extracted with pet. ether and the extract chromatographed on silica gel. The elution of the column with petrol-benzene (80:20) gave β-amyrin **1** (50 mg), the identity of which was confirmed by m.p., mixed m.p., ^{1}H NMR, mass spectrum and preparation of its acetate[6]. Further elution of the column with petrol-benzene (50:50) gave β-sitosterol **2** (1 g); m.p. and mixed m.p. 135°. Further elution with benzene gave oleanolic acid **3** (50 mg). The structure of **3** was confirmed by m.p., mixed m.p., IR and mass spectra, and formation of methyl oleanate[7].

After extraction with pet. ether, the leaf powder was extracted with hot methanol for 50 hr and methanol extract column chromatographed over silica gel. Elution of the column with benzene-ethyl acetate (90:10) gave maslinic acid **4** (80 mg). Its structure was confirmed by conversion into methyl maslinate, m.p. 222-24°, IR and ^{1}H NMR spectra. Further elution of the column with benzene-ethyl acetate (80:20) gave arjunolic acid **5** (60 mg). Its structure was confirmed by m.p., IR and mass spectra and preparation of methyl arjunolate[8]. Further elution with benzene-ethyl acetate (60:40) gave arjunetin **6** (200 mg) which gave Molish test for sugars. The structure of arjunetin[8] was confirmed by m.p., IR and FAB-MS(m/z): 650, 488, 477, 264, 246, 231 and 201 (base peak).



Further elution with benzene-ethyl acetate (50:50) gave arjunoglucoside II (**7**) (250 mg) which gave Lieberman-Burchard reaction and Molish test for sugars. The structure of **7** was confirmed by mixed m.p., IR, FAB-MS(m/z): 650, 488, 470, 452, 248(BP), 246, 203, 189 and hydrolysis products[8].

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