

antioxidant potential of wild plant seeds and *in vitro* calli was calculated through dot-blot assay and free radical scavenging by DPPH method activity of various solvent extracts of seed and calli.

### 19.1.2 PLANT DESCRIPTION AND DISTRIBUTION

The plant *Sesbania grandiflora* belongs to Fabaceae family. It is a loosely branching tree (15 m tall), its leaves are pinnately compound (30 cm long), with many pairs of leaflets, and it is oblong to elliptical in shape (12.4 × 5.15 mm dimensions). Its stems are tomentose and unarmed. Its roots normally heavily nodulated with large nodules. Its flowers are large clusters that are white-yellowish, rose-pink or red in colour and calyx-shaped (15.22 mm long). Its standard dimensions are 10.5 × 6 cm, and its pods are long (20 to 60 cm) and thin (6 to 9 mm), wide (15–40 mm), and flat, with pale colour seeds that are elliptical and red brown (Hooker 1978; Orwa et al. 2009). *S. grandiflora* is considered to be native of many Southeast Asian countries, and the use of perennial *Sesbania* species has largely been restricted to South and Southeast Asia (Abbs and Rexin 2013).

### 19.1.3 MEDICINAL USES OF *S. GRANDIFLORA*

The whole plant is traditionally and medicinally very important. Its leaves are acrid, bitter, sweet and cooling, which are used for tonics, aperients and diuretics. Its juice is used as snuff in coryza, and to treat headaches, influenza, coughs, colds, fevers and epilepsy. Made into a paste, it can be externally applied for wounds, ulcers, rheumatic, and inflamed joints, its leaf juice is known for its antihelminthic activity, and it is also used for the treatment of biliousness, fever, gout, itchiness, leprosy, epilepsy, night blindness and antipyretic (Avalaskar et al. 2011). Its bark is astringent, cooling, tonic, bitter, febrifuge, and anthelmintic. Pounded bark can be externally applied for scabies; bark juice can be used for dyspepsia, diarrhoea, gastralgia, abdominal colic and gastrointestinal disorders. Its flowers are cooling, bitter, astringent, acrid and emollient, and can be used for laxatives and antipyretics. Its juices can be applied on the eyes for night blindness, and also be used for leucorrhoea, fevers, periodic fever, small pox, poisoning cases, biliousness and debility. Ripe pods are used for brain tonic and as a memory promoter. The sweet flowering buds can be pickled and eaten, and used as a laxative, alexiteric or flatulent colic and for treating anaemia and emaciation (Prescott et al. 2002; Ramesh et al. 2007). The *S. grandiflora* leaves have bactericidal activity, and its extracts have been used for the treatment of nasal catarrh and fevers, and are also being used for anxiolytic and anticonvulsive effects (Ramesh et al. 2007).

### 19.1.4 SECONDARY METABOLITES OF *S. GRANDIFLORA*

The active metabolites responsible for these activities were proteins, alkaloids, flavonoids, tannins, saponins, keampferol, glycosides, diterpenoids, steroids, triterpenes, gums, phenylalanine, mucilages, valine, linoleic acid, nicotinic acid, β-sitosterol, carbohydrates and anthraquinone (Ghani 1998; Paranjpe 2001; Avalaskar et al. 2011).