

Investigations on chemical composition of willow bark (*Salix Alba L.*)

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Abstract: Willow tree is often used for in parks, gardens and landscape designs over 300 around the world in Turkey is a species of the 22 taxon. Willow tree is a forest tree that chooses wetlands and riversides. Industrial-size willow wood is a kind of soft tissue which is preferred in paper, fibreboard and flake board making. However, the crust of this tree species is considered waste and is not evaluated in any usage area. Nevertheless, it is known that the crust of willow tree has significant chemical content. Salicin, the active ingredient of aspirin used especially as a pain reliever and fever reducer, is produced from this tree species. Willow tree are spread over a wide area a significant amount in Göller Bölgesi (Region of Lakes) in this regard it is preferred as working material. Samples has taken from the Burdur region and cut as a shape of discs from the bottom billet (0,50 m), the middle section (1,30 m) and the top section by 5 cm and this samples will be provided to represent the entire tree. In the next step, the wood and bark parts will be separated from one another and shredded to smaller sizes and the bark parts will be evaluated in this study. The crust samples will be shrunk with the help of sharp garden scissors, knife and hammer and dried in a freeze-dryer. Subsequently, the specimens will be milled in a laboratory-type Willey mill with a particle size of 1 mm. After this step, crushed bark samples will be extracted with hexane in a Soxhlet device to dissolve oily (lipophilic) extractive substances and the structure and amount of these chemical groups will be determined by means of chromatographic devices. The quantity of fatty acids present in the willow barks will be determined by Supelco's 37 fatty acid mixture in the GC-MS device available at SDU Central Laboratory. For this purpose, bark samples will be derivatized after hexane extraction and injected into GC-MS under appropriate conditions. Then, the fatty acids in the willow barks will be compared with the fatty acid standard mixture of 37, and the structure and amount of the fatty acids in the samples will be compared. Suggestions will be made on methods of utilizing willow bark in different industries especially pharmacy, chemistry, etc.

Keywords: Willow, Bark, Fatty acid, Extraction