

## **Abstract**

The objective of the research is to propose and apply activated carbon from plum pit (*Spondias Purpurea*), using the adsorption method for the reduction of arsenic in the groundwater of Jayanca in 2023, was assessed the arsenic levels of 10 groundwater points in the Jayanca district in the province of Lambayeque, department of Lambayeque (2 at the entrance to the district, belonging to the hamlets of Señor Cautivo and La Soledad), a higher point was taken concentration of arsenic, (M1, 0.075 mg/l), the activation of the activated carbon was done with 85% H<sub>3</sub>PO<sub>4</sub>, executing in 5 phases, carrying out 54 tests, for the tests we worked with concentrations of (0.1 g, 0.8 g, 1.5 g) in 100 ml, under constant agitation (magnetic stirrer, 300 rpm) with a contact time of 5 min, 30 min and 55 min.

The reduction capacities to a synthetic sample of at 100 mg/l were satisfactory, an efficiency level of 100%, (Suitable for human consumption, using *Spondias Purpurea* plum seed activated), with a maximum contact time of 55 min, so this treatment with *Spondias Purpurea* is a viable option for reducing arsenic in groundwater while remaining below the maximum permissible limits, described by Peruvian laws Decreto Supremo N.° 031-2010-SA (MINSA 2010).

**Keywords:** arsenic, activated carbon, *Spondias Purpurea*, sanitation, unitary process, reduction.