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First record of *Pascalia glauca* (Ortega ,1797) (*Helianthea ,Asteraceae*) plant population as a cause of livestock mortality in Al- Diwanyia province –Iraq

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Abstract

Pascalia glauca is an invasive and toxic perineal plant native to southern South America. A small populations of plant were recorded for first time in Al-Diwanyia province / Iraq and they was responsible for mortality in grazing cattle. The authors recommend an urgent action by the authorities to control growing this toxic plant before it spreads uncontrollably, as well as a warning notification should be mentioned for the breeder to prevent livestock's mortality.

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Keywords: *Pascalia glauca*, mortality , toxic plant, Al- Diwanyia province –Iraq.

Introduction

Pascalia glauca Gómez-Ortega is a perennial herb considered globally as very dangerous invasive and toxic plant (Burrows and Tyrl , 2001). Its native to tropical part of South America, while, the plant distributed widely in all South America countries. Additionally, it is recorded as invasive weed in North America, Australia, New Zealand, India, and Southwestern Europe (Manuel and Pena-Martin, 2014). The plant reported as very toxic to grazing livestock, which responsible of many cases of lethal hepatotoxicity in ruminant (Collazo and Riet-Correa, 1996). The preferred habitats of plant include banks of rivers, depressions, swamplands, channels and edges of crop farms (Domino and Mazzola, 2022). Review of literature revealed no previous publications that reported presence of *Pascalia glauca* and its toxicity in Iraq. Consequently, the present study intends to record the presence of wild population of *Pascalia glauca* invading many dried farms in Al-Hamza district / Diwanyia province in mid-Euphrates region of Iraq and responsible for many mortality in cattle.

Materials and Methods

The infested area were situated in southern rural farms of Alhamza district / Al-Diwanyia province –Iraq (Figure.1). One of the breeders reported a case of poisoning in many cows that were released for free grazing after the drought as a result of the impact of global climate change and shortage of food. A field survey of the area and its surroundings was conducted at 14 September 2022. A clusters containing dozens of strange plants were identified, the farmers said that plant started appearing two years ago in the nearby areas from the dry channels. Seven cows were died after short course of shivering of hind limbs; the owner buried the carcasses, therefore no postmortem was done. Many samples of entire plant were collected. The plant was initially identified by plant expert Ali Haloob (personal communication), who confirmed the plant according to morphologically appearance (Wilson, 2015).

Results and discussion

The suspected plant was found in rural area in separate dense agglomerations occupy about 2 acres of uncultivated lands on clay soil, particularly along of dried channels and banks of river. The clusters of plant were, dense, bloomed, monospecific and high dispersal capability, all these features indicate high invasive capacities (Figure.2). The available information indicates that this plant was not previously recorded in Iraq.
The case history revealed high mortality rate with short course of shivering and paralysis of hind quarters then recumbency and death. Medina *et al.,* (2022) described many outbreaks of intoxication with *P. glauca* from diverse sources which affecting cattle and small ruminant, while Liboreiro *et al.,* (2021) revealed other signs in sheep included abdominal breathing , coughing and nasal discharge with morbidity rate reached 20%. The main cause of death hepatotoxicity manifested by multifocal liver necrosis (Giannitti *et al* ., 2013).

Figure. 1: Shows the infested area (red star) *by Pascalia glauca*

Figure.2: Shows one cluster of Pascalia glauca plant appeared like dense mat

In conclusion, this study approved presence toxic *Pascalia glauca* plant in one area in AL hamza district / Al-Diwanyia province –Iraq. The plant was related with mortality in cows grazed in this area. The authors recommend that authorities plan and designing a rapid effective strategy to eradicate this plant before it spreads in a free manner with monitoring the invasive area to ensure that the seeds do not spreads. A manual extraction and appropriate herbicidal are preferred to insure terminating all these toxic plant.

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