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HEALTH AND CONTROL COSTS OF BLACKFLIES IN A PEST HOTSPOT AT SPAIN

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Abstract The massive presence of blackflies, mainly the anthropophilic *Simulium erythrocephalum* species in the surroundings of the city of Zaragoza, represents a problem of Public and Animal Health. This pest is responsible for the considerable increase of medical consultations in Primary Care due to insect bites in Zaragoza after the first outbreak of blackflies occurred in 2011. The objective of this work was to assess the economic impact of this pest in the Public Health and to compare it with the estimated cost of larval control in the Ebro River during the 2009-2018 period in Zaragoza. It has been observed that in the years with the highest incidence of the pest (2011 and 2012), the blackfly bites came to account for 55-66% of the total of medical consultations due to insect bites with a health expense that ranged between 415,000 and 891,000 Euros per year. While the expense of control was estimated below 50,000 Euros per year. The implementation of an adequate larval control strategy in Zaragoza would reduce the health cost of the blackfly pest in the city. In addition, it has been observed that the cost of blackfly larvae control is lower during the years of greater incidence of the pest since the populations of blackfly larvae develop massively with a lower flow in the river Ebro, which finally means a fewer volume of *Bacillus thuringiensis* var. *israelensis* for control. An effective control would not only reduce the impact on Public and Animal Health but would substantially improve the well-being of citizens during the summer season.

Key words Blackfly, pest control, public health, insect bites, health cost, *Simulium erythrocephalum*, *Bacillus*