

**Title: An account on certain annihilating properties in Leavitt path algebras**

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Abstract: We present that for any graph  $E$  and for a commutative unital ring  $R$ , the nil ideals of the Leavitt path algebra  $LR(E)$  depend solely on the nil ideals of the ring  $R$ . A connection between the Jacobson radical of  $LR(E)$  and the Jacobson radical of  $R$  is obtained. Further we show that for a nil ideal  $I$  of a Leavitt path algebra  $LR(E)$  the ideal  $M_2(I)$  is also nil. Thus obtaining that Leavitt path algebras over arbitrary graphs satisfy the Köthe's conjecture.