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RESUMEN.

La sensibilización social creciente acerca de todas aquellas actividades humanas que puedan perjudicar nuestro entorno medioambiental, tiene la consecuencia lógica de que la sociedad moderna se plantee como una verdadera necesidad la investigación y desarrollo de medidas correctoras y de alternativas menos agresivas con la naturaleza que nos rodea.

Esta realidad afecta, indiscutiblemente, a tareas tan necesarias, y en apariencia tan simples, como la fertilización y el riego, destacando en particular aquellos aspectos derivados de la fertilización nitrogenada y de la salinidad del agua de riego.

La baja eficacia de los fertilizantes nitrogenados convencionales, que suele oscilar entre el 33 y 50 %, unido a la escasa calidad de las aguas destinadas al riego, a causa de su creciente demanda y lo limitado de nuestros recursos hídricos, puede desencadenar consecuencias nada deseables sobre la producción agrícola y, en último extremo, sobre la población.

La manifiesta importancia de estos aspectos hace indiscutible la necesidad de profundizar en su conocimiento, desarrollando compuestos nitrogenados que liberen sus nutrientes de forma lenta y controlada, y determinando la influencia que la calidad del riego aportado ejerce sobre esta liberación.

El presente trabajo constituye la materialización experimental de esta necesidad, y su finalidad es la de aportar nuevas perspectivas que contribuyan a resolver definitivamente esta problemática.

Para su consecución se eligieron dos fertilizantes nitrogenados comerciales solubles: Nitrofoska (N) y urea (U), a los que se distribuyó en superficie dos compuestos orgánicos distintos: ácidos húmicos (AH) y ácido algínico (AA), obteniendo de esta forma los fertilizantes: Nitrofoska con

ácidos húmicos (NAH), Nitrofoska con ácido algínico (NAA), urea con ácidos húmicos (UAH) y urea con ácido algínico (UAA), cuyos comportamientos se comparan con el que presente el fertilizante de liberación lenta Nitrofoska Permanent.

Inicialmente se evalúa la eficacia de los nuevos fertilizantes desarrollados mediante el empleo del sistema de Electroultrafiltración (E.U.F.), y bajo las directrices del método descrito por Díez et al. (1991).

Las conclusiones a que se llega son muy alentadoras ya que, efectivamente, la liberación de nitrógeno por el fertilizante experimenta, en todos los casos, un retardo como consecuencia del aporte superficial de ácidos húmicos y de ácido algínico a que se han sometido.

A continuación se estudia su comportamiento en el suelo y bajo la influencia de riegos constituidos por disoluciones de NaCl de distinta conductividad: Agua destilada, 2500, 3500, 4500 y 7500 μS/cm.

El estudio estadístico de los resultados obtenidos en esta etapa revela que la conductividad de los riegos es determinante en el comportamiento de los fertilizantes en el suelo, y los clasifica en tres categorías: Agua destilada, salinidad moderada: 2500 y 3500 μS/cm y alta salinidad: 4500 y 7500 μS/cm. La salinidad moderada favorece la mineralización del nitrógeno, los riegos de alta salinidad perjudican notablemente a la estructura del suelo y, en general, los cuatro riegos salinos favorecen la pérdida de nitrógeno del medio.

En definitiva, las conclusiones alcanzadas satisfacen el doble objetivo perseguido al plantear esta investigación; permiten concretar aún más la influencia y consecuencias de la salinidad del riego sobre los procesos que constituyen el ciclo del nitrógeno y, lo que es más importante, establecen la base de nuevas perspectivas en el desarrollo de fertilizantes nitrogenados de liberación lenta.