

عنوان مقاله:

Coacervation method for encapsulation of Lambda-Cyhalothrin as a household product to control pests

محل انتشار:

چهارمین کنفرانس بین المللی نوآوری های اخیر در شیمی و مهندسی شیمی (سال: 1396)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

In the present study, a new type of a household pesticide was prepared by coacervation method. Lambda-Cyhalothrin was encapsulated due to interaction between two oppositely charged materials, gelatin and gum Arabic in a complex coacervation process at the presence of 10 mol etoxylated nonyl phenol (NPE) which is a kind of a non-ionic emulsifier to enhance the properties of capsules such as size, shape and homogenization. Spherical shape of capsules was scanned by Scanning Electron Microscopy (SEM) and optical microscope. The encapsulation efficiency was achieved 96% by Gas chromatography equipped with FID detector (GC-FID). From the results of release study, 49, 73, 76% of encapsulated materials were released from their shell after 15, 30, 180 min respectively. pH adjustment as a factor to start the encapsulation process, cooling and adding glutaraldehyde during the formation of capsules to make them hardened, are already proved to be significant for preparation of capsules. The present study, applies a convenient method to introduce a new product, which can be exploited as a pesticide in public health field.

کلمات کلیدی:

Lambda-cyhalothrin, coacervation, encapsulation, release study, encapsulation efficiency

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