SUMMARY

This work comprises of three chapters

1- In the first chapter, a literature survey of the pervious studies on warfarin, coumarin rodenticides and their complexes with different reagent is given. The survey includes spectrophotometric, and chromatographic studies on warfarin and coumarin rodenticides and their complexes.

2- The experimental part (chapter II), includes the preparation of different concentration of compounds under investigation (warfarin) as a drug and (bromadiolone) as a coumarin rodenticide. It incomprises also information about the instrument used for spectrophotometric analysis.

3- Chapter III, includes the results and discussion, includes the studies in solution of complexes formed between both warfarin and bromadiolone with reagents bromophenol blue, bromocrysol green, bromocrysol purple, bromothymol blue and fast blue. The stoichiometry and stability constants of ion-pair complexes are also evaluated from spectrophotometric methods namely the molar ratio and continuous variation methods. The optimum conditions for the complex formation were investigated. The suitable wavelength, effect of time and temperature as well as the sequence of addition were also studied.

The results obtained indicated that a satisfactory agreement is observed between stability constant values evaluated using two different methods. The determination of compounds under investigation was done by using Beer's method. For more accurate determination, Ringbom method was used. Good results are obtained by calculating Sandell sensitivity, molar absorptivity, error % and the standard deviation. The study of the accuracy of the proposed methods was done by using F-value and t-test

method. The proposed methods show high accuracy compared with the HPLC method developed by **Guan.**