

CHAPTER 4

CONCLUSION

4.1 Conclusion

The procedure for determination of vitamin C based on the stopped-flow injection technique was investigated. The proposed method neutralized molybdenum blue reaction. The parameters of operation time and reagent concentrations for system were studied. The suitable stopped time for increasing reaction time was 5 minute. The reagent concentration; sodium molybdate, potassium dihydrogen phosphate and sulfuric acid were 2.20×10^{-1} , 0.15×10^{-1} and 0.74×10^{-1} M, respectively. The molybdenum blue product was monitored at 680 nm. The optimum conditions of the stopped-flow system are shown in Table 3.13 and 3.14. A linear calibration graph in the range of 10-100 mg/L ascorbic acid ($y = 2.3919x + 3.1144$; $r^2 = 0.9919$) was obtained. This method showed good precision with RSD of 4 % (for 40 ppm ascorbic acid; n= 14).

The proposed method has been applied to the determination of vitamin C in fruit samples. The results obtained are not significantly different from those obtained by the standard titrimetric method.

The stopped-flow injection system with increasing of sensitivity for vitamin C determination was developed. The proposed method consumed much less amounts of reagents is compared to titrimetric method and low cost instrument.