

## CHAPTER 6

### CONCLUSIONS

6.1 It was found that all methamphetamine pills in the study were discoid in shape and convex at the surface. The methamphetamine samples obtained were mostly orange in colour. It was also observed that green pills would come with orange pills in a ratio 1: 100 to help with counting or marking. Regarding logos, many logos were found in the studied samples. This study found that the most popular logo was WY (in four variants), followed by R, OK, 888 and w/99. The three most popular WY logos were wY, wy and WY.

6.2 The average diameter, thickness and weight of the pills studied were found to be 6.02 - 6.05 mm., 3.02-3.03 mm. and 0.091-0.093 gm., respectively. The hardness range was 6.8 - 9.2 kg. The pills with WY, wy, wY and R logo showed greater variation in thickness and weight. These indicate greater formulation or processing problems. However, since the weight variation of the studied pills is not high, it could be possible that the pills might have been manufactured by rotary tableting machines.

6.3 Average methamphetamine and caffeine content were 21.76-22.79 mg % and 61.87- 62.42 mg %, respectively. Amphetamine, ephedrine, theophylline and phenacetin were also found in some samples. Within the WY logo group samples, there were no differences between methamphetamine amounts amongst the variant WY logos.

6.4 There is a significant difference between diameters of methamphetamine pills bearing the wY logo compared to those with the wy logo; it is reasonable to infer that the size of punches and dies for the compression of the pills with wY logo and those for the wy logo pills are significantly different. This difference would support a hypothesis that these two logos come from different manufacturers. Since wY logo and wy logo are the most commonly-found pills in this region, an inference can be drawn that there are two separate logo producing groups which constitute the methamphetamine manufacturers distributing methamphetamine pills in these areas.

6.5 In the disintegration study, all methamphetamine pills studied (across all logos), were observed to dissolve slowly, without breaking into fragments. Results in this study suggest that the studied methamphetamine pills are manufactured without a disintegrant. The disintegration and dissolution profiles of methamphetamine pills with wY, wy and WY logo were different, which in fact is a possible indication that these pills came from different manufacturing laboratories.

6.6 The proposed HPLC method is suitable for determination of food dyes in methamphetamine pills. It was found that that only food dyes were used as colouring agents in methamphetamine pills seized in the areas involved in the study. In further research, the impurities present in food dyes in the pills could be studied in comparison with impurities in commercial food dye samples. A more detailed identification of dyes might also help to outline the supply chain for dyes used by illicit drug manufacturers.

6.7 Data obtained and analyzed in this study suggests that the three popular logos (wY, wy and WY) might be manufactured in different clandestine laboratories or by different producing groups. From this result, it could be concluded that each producing group is identifying its product with a specific logo. Each variant of WY logo could be linked to a distinct, separate manufacturer. It is likely from the data developed and information from intelligence sources that the pills produced by UWSA are the most popular in this region, followed by pills produced by SUA and the Kokang Chinese' group, respectively.

6.8 The pictures developed in this study of trafficking routes and distribution patterns for methamphetamine, drawn on the basis of identified physical and chemical properties of the samples, indicates both likely connections and likely absence of connections between the various samples. The discriminant analysis applied helps predict the smuggling sources where methamphetamine pills might come from. GIS can help develop more clearly defined pictures of distribution patterns of methamphetamine pills.

6.9 The study of drug characterization of methamphetamine pills can help establish specific links between two or more methamphetamine samples and help draw pictures of trafficking routes and the distribution patterns of these pills. It can be a

useful tool to help law enforcement authorities to understand the patterns of drug distribution and to control drug trafficking networks.



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