

INQUIRY INTO LAW REFORM ISSUES REGARDING SYNTHETIC DRUGS

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Inquiry into law reform issues regarding synthetic drugs

Submission from ChemCentre

Western Australian Government chemical and forensic science facility

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ChemCentre is the leading analytical chemistry facility in Western Australia. Through excellence in chemistry, we play a key role in supporting our community in matters of public and environmental health, justice, safety and security.

As the WA Government chemical and forensic science facility, ChemCentre leads the field in the identification, analysis and reporting on illicit drugs and emerging synthetic drug hazards. We liaise closely with state, federal and international government agencies responsible for combating the use and manufacture of illicit drugs. Major ChemCentre clients include the WA Police, Australian Customs and Border Protection Service ('Customs') and Office of the State Coroner in Western Australia ('Coroner').

ChemCentre scientists identify and quantify drug seizures made by WA Police and other authorities. This includes 'traditional' illicit drugs, such as cannabis, amphetamines, heroin and cocaine, as well as the emerging synthetic drugs such as synthetic cannabinoids, cathinones ('bath salts') and other amphetamine-type drugs.

In recent times ChemCentre's Forensic Science Laboratory has been increasingly involved in the issue of new synthetic drugs in Western Australia on a number of fronts.

The Illicit Drugs section at ChemCentre analyses drug containing materials submitted for testing. Whilst the majority of samples comes from the WA Police from seizures 'on the street', other work for Customs, involving seizures of materials through the airports, ports and international mail, can often give early indications of what is likely to become the next drug of interest to appear more widely. ChemCentre received samples of synthetic cannabinoid products from WA Police in January 2011; however, we received samples from Customs three months earlier that were found to contain synthetic cannabinoid JWH018.

Several synthetic cannabinoid related challenges have arisen over the past 12 months, particularly in dealing with the large influx of synthetic cannabinoid samples. Firstly, identifying unknown new drugs can be time consuming, particularly where there are several structurally similar analogues.

Secondly, obtaining certified reference material to unambiguously confirm these new drugs has involved much time and effort as well as a significant financial commitment, with each reference standard costing several hundred dollars for a few milligrams. Our current expenditure on these materials alone is approximately \$100,000. The number of companies able to supply these reference materials is limited and with the rapid release of new synthetic drugs onto the market there is an inevitable time lag before the reference standard is available. This can lead to delays in analysis being completed and subsequent delays in the courts. These delays also impact on the timely provision of information to guide public health response.

The Toxicology section of the Forensic Science Laboratory undertakes analytical work for the Office of the State Coroner in Western Australia, which typically involves samples from unexplained or sudden deaths in the community. Through this work, ChemCentre has been involved in several cases in the past year in which synthetic drugs, including synthetic cannabinoids, have been identified and implicated in recent deaths in WA.

Workplace drug and alcohol testing is another major function of the Toxicology section, with a large number of workplaces throughout Western Australia requiring their staff to undertake random drug tests. Attempts by some members of the workforce to undermine this testing regime through the use of synthetic drugs, and synthetic cannabinoids in particular, has created significant workplace occupational health and safety (OHS) issues. ChemCentre led the development of new screening procedures for these workplaces, and was the first laboratory in Australia able to offer synthetic cannabinoid testing services for employers. This involved using new technology to investigate both the parent drugs and their previously unidentified metabolites.

Changes in legislation, both in the *Poisons Act 1964 (WA)* and through the Poisons Standard (Standard for the Uniform Scheduling of Medicines and Poisons, or SUSMP), which have seen a number of specific chemical compounds scheduled, have led to a decrease in both the number of drug samples submitted for analysis and in the compounds detected in workplace testing samples.

Western Australia has the advantage that both its *Poisons Act* and *Misuse of Drugs Act 1981 (WA)* schedules are the same and also refer to the SUSMP so any changes to the SUSMP are automatically included in the WA legislation. Although all State Health Ministers are committed to using the SUSMP for scheduling in the states' own poisons legislation, this is not the case in all other jurisdictions for the relevant misuse of drugs-related legislation.

The pending changes to the SUSMP on 1st May this year will go some way to staying ahead of the release of new synthetic drugs, as the class of chemical will be scheduled rather than each compound individually by name. However, this will put some responsibility back onto the forensic chemists to determine if an individual drug belongs to a scheduled class. Some consistency in the application of these determinations could be achieved through training and information provided through professional bodies such as the National Institute of Forensic Science (NIFS).

The issue of whether a new synthetic drug is a derivative or analogue of an existing drug (and is therefore covered by current legislation) is an issue that repeatedly causes discussion both amongst forensic chemists and in the courts. The SUSMP definition - '*Classification of a substance as a derivative of a Scheduled poison relies on a balanced consideration of factors to decide if a substance has a similar nature (e.g. structurally, pharmacologically, toxicologically) to a Scheduled poison or is readily converted (either physically or chemically) to a Scheduled poison*' - is purposely wide ranging in its scope and relies upon an expert determination of the chemical composition as well as toxicology and pharmacology which can lead to inconsistencies. Measures to standardise this definition of derivative or analogue may be helpful.

It has also been seen that the chemical composition of various brands of synthetic cannabinoids have been changing, suggesting the manufacturers of these products substitute different chemicals under the same brand name and packaging. The same 'brand' has been found to contain different synthetic cannabinoids in seizures made over a period of time. This means that all samples submitted have to be comprehensively analysed as the packaging is not a reliable indication of the contents.

These changing product compositions also have implications for workplace OHS and community health. The toxicology and pharmacology of synthetic cannabinoids is not well studied but they are known to have varying potency. Some of these synthetic compounds have potencies orders of magnitude higher than tetrahydrocannabinol (THC) found in cannabis itself.

Whilst this submission has primarily focussed on synthetic cannabinoids the comments above are equally applicable to the other groups of new synthetic drugs that are increasingly being seen, such as MDPV and other cathinones, appearing overseas and now in Australia as 'bath salts'.

In order to address the impact of new synthetic drugs on the community in Western Australia, a governmental interagency working group has been formed consisting of ChemCentre, WA Health Department (including Poisons Branch and Drug and Alcohol Office), WA Police (including WA Police Legal Department and Licensing Branch), Department of Consumer Affairs and others. This working group is preparing its own submission to the Legal Affairs Committee.

I have enclosed a copy of the Illicit Drugs section newsletter which details further information relating to synthetic cannabinoid samples received up to the end of 2011, and I am happy to forward the next edition which will contain updated information when it is released in the next few weeks.

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ILLICIT DRUGS SECTION

3 April 2012

NEWSLETTER - ISSUE #1 FEBRUARY 2012

INTRODUCTION

Welcome to the first issue of ChemCentre's Illicit Drugs Quarterly Newsletter. This newsletter is intended for both law enforcement and our colleagues in the forensic science arena to provide more information on drug trends, drug emergence and other changes that have been seen in Western Australia. We hope you find the information presented in this newsletter interesting and informative, and we welcome any comments or feedback you may have. If you would like to be on our mailing list to receive further correspondence from us including this newsletter, or would like any further information please contact the Illicit Drugs team via email on illicitdrugsstaff@chemcentre.wa.gov.au. We hope you enjoy the read!

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ILLCIT DRUG PURITIES

The average purities of the four major drugs of interest, methylamphetamine (MA), 3,4-methylenedioxy-N,alpha-dimethylphenylethylamine (MDMA), cocaine and heroin, are summarised in Table 1. The number of samples that have been quantitated are shown in brackets. Please note that samples are only routinely quantitated if they weigh more than 2 grams or are submitted for "WalkThru" analysis, and samples with drug purities less than 1% are not included when calculating the average.

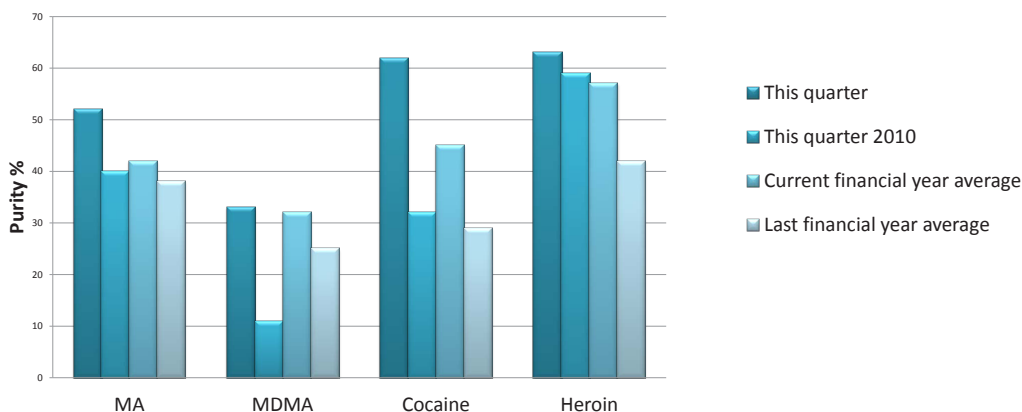
Table 1: Summary of average purities for common illicit drug seizures analysed at ChemCentre.

	MA	MDMA	Cocaine	Heroin
This quarter (Oct 2011 – Dec 2011)	52% (80)	33% (2)	62% (1)	63% (13)
This quarter last year (Oct 2010 – Dec 2010)	40% (126)	11% (6)	32% (3)	59% (5)
Current year average (Jul 2011 – Dec 2011)	42% (300)	32% (5)	45% (12)	57% (40)
Last financial year average (Jul 2010 - Jun 2011)	38% (469)	25% (28)	29% (35)	42% (32)

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ILLICIT DRUG PURITIES (CONT.)

Average Drug Purities for Illicit Drug Seizures



From the summary we can see that the average purities of all four drugs have increased this quarter in relation to this quarter last year and the last financial year. The purity of the cocaine sample for this quarter is nearly double the average purity for cocaine this quarter last year, and approximately 70% higher than last financial year's average. It will be interesting to see if this is an ongoing trend or an unusually pure sample. Average MDMA and heroin purities are consistently high for both this quarter and this financial year to date.

Methylamphetamine is the most prevalent illicit drug seized in Western Australia (behind cannabis) and this is reflected in the number of samples that were quantitated. The number of samples that were quantitated for MA, MDMA and cocaine this quarter have decreased compared to this quarter last year, however there was a significant increase in the number of heroin samples that purity was determined for. The number of samples in which MDMA was detected has decreased significantly.

SCHEDULING UPDATES

In Western Australia, the Schedules of the Misuse of Drugs Act and the Poisons Act refer to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP), as well as any other compounds added directly by the WA government. 2011 was a year for change regarding drug scheduling in WA, in particular the latter part of the year. The emergence of synthetic cannabinoids and their significance in terms of work safety incidents and drug testing in the mining sector posed a major challenge to both the Illicit Drug and the Toxicology teams at ChemCentre. On the 17th June 2011, seven synthetic cannabinoids were included into Schedule 9 of the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) and consequently the WA Poisons Act and Misuse of Drugs Act. The WA Health Minister introduced a further 14 substances into the schedules of the Poisons Act and the Misuse of Drugs Act on the 5th August 2011, meaning that a total of 21 synthetic cannabinoids are banned for sale, supply or possession in Western Australia. The national scheduling committee is currently considering broader restrictions to encompass other synthetic cannabinoids which will be implemented in May 2012.

Other novel compounds that were recently included into Schedule 9 are listed below:

- 1-(8-BROMOBENZO[1,2-B;4,5-B]DIFURAN-4-YL)-2-AMINOPROPANE *(Bromo-Dragonfly).
- 4-FLUORO-N-METHYLAMPHETAMINE
- 4-METHYLMETHCATHINONE *(MEPHEDRONE).
- N-PHENETHYL-4-PIPERIDONE

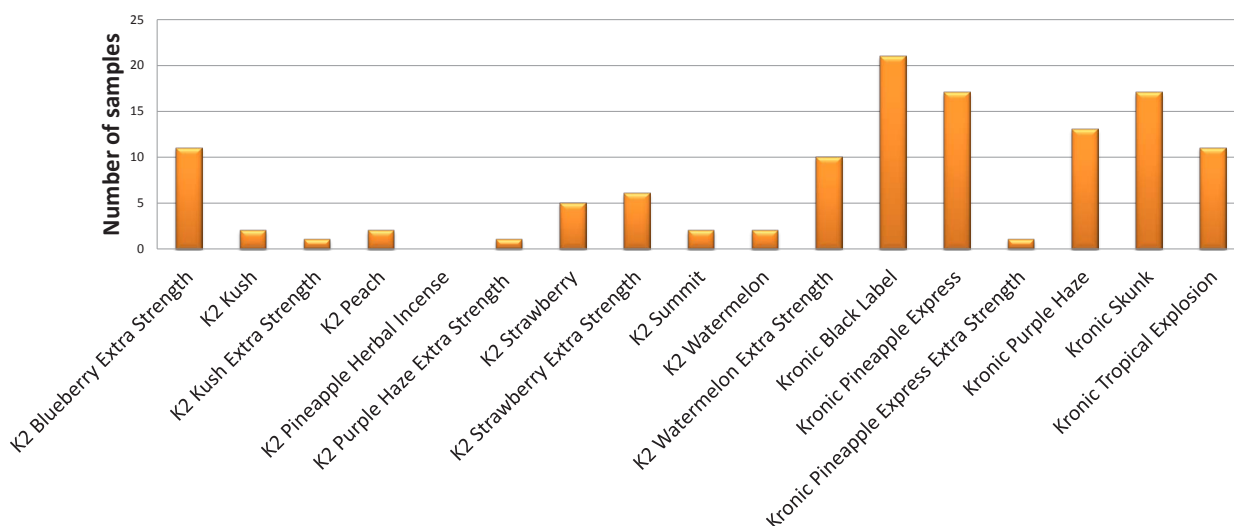
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SYNTHETIC CANNABINOIDS

The first synthetic cannabinoids were identified in plant material submitted for analysis in January 2011. To date, a total of 210 exhibits have been found to contain one or more synthetic cannabinoids. 48 different products have been analysed as well as a host of unmarked, unidentified plant materials.

“Kronic” was the most abundant brand submitted for analysis with 80 samples analysed to date from six different products, followed by “K2” with 43 samples from 11 different products. A summary of the “K2” and “Kronic” products is provided below.

K2 & Kronic products submitted for analysis (June - Dec 2011)



JWH-018 was the most prevalent synthetic cannabinoid detected followed by AM-2201 and RCS-4 in all the samples analysed at ChemCentre. The majority of samples contain more than one different synthetic cannabinoid.

Interestingly, a number of other novel drugs have been detected in these samples including phenazepam, 5-methoxy-N,N-diallyltryptamine (5-MeO-DALT) and 3,4-methylenedioxymethcathinone (Methylone), in addition to the synthetic cannabinoids.

New products claiming to be “Legal Highs”, “100% Cannabinoid Free” or claiming to “not contain JWH-18, JWH-73, CP47, CP497, HU-210 or any other chemical and/or plant ingredients prohibited by state or federal law” are being submitted to the laboratory weekly, as well as the more common products however their compositions can not be predicted as new synthetic cannabinoids emerge on the market and suppliers attempt to evade legislation. Synthetic cannabinoids are an ongoing challenge to ChemCentre as we try to keep up with the changing market.

ALERTS

ChemCentre has initiated an "Alert – Seizure and Analysis" approach to new or novel drugs and unusual drug trends. Two Alerts have been issued thus far and are summarised below.

Alert – Seizure and Analysis (23/11/2011)

Topic: Dimethyltryptamine (DMT)

Summary: The alert was raised because a large seizure of beige powder submitted to the laboratory was found to contain DMT in approximately 22%. This was the largest DMT seizure received in WA to date. The alert provided some common physiological and physical effects as well as laboratory trends and statistics.

Alert – Seizure and Analysis (9/01/2012)

Topic: 3,4-Methylenedioxypyrovalerone (MDPV)

Summary: The alert was raised because of the recent media attention regarding recent drug induced casualties in Melbourne and Adelaide due to MDPV use. The alert provided laboratory trends and statistics associated with MDPV. MDPV will be listed in Schedule 9 of the SUSMP on 1st May this year.

UNUSUAL SEIZURES

1-(8-BROMOBENZO[1,2-B;4,5-B]DIFURAN-4-YL)-2-AMINOPROPANE (Bromo-Dragonfly) was identified on two paper tabs submitted for analysis in the last financial year. (Figure 1)

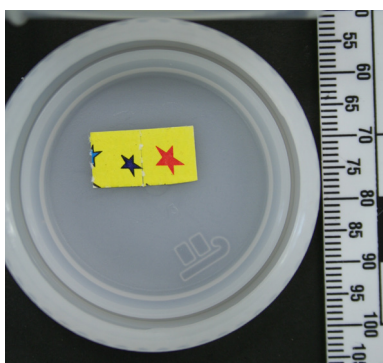


Figure 1



Figure 2

4-METHYL-N-ETHYLCATHINONE (4-MEC) was identified as a component of three samples analysed in the last financial year. These samples were submitted by Australian Customs and all comprised white powders. 4-MEC was identified as a component of one sample submitted by WA Police this current financial year (to December 2011) comprising 4.24 grams of white powder. (Figure 2)

2,5-DIMETHOXY-4-ETHYLPHENYLETHYLAMINE (2C-E) was identified as a component of two samples analysed in the last financial year. The first sample was 1.50 grams of beige powder contained in 32 clear, colourless capsules (Figure 3); the second sample was 0.03 grams of yellow powder (Figure 4).



Figure 3

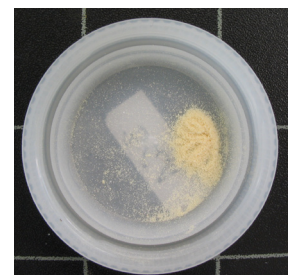
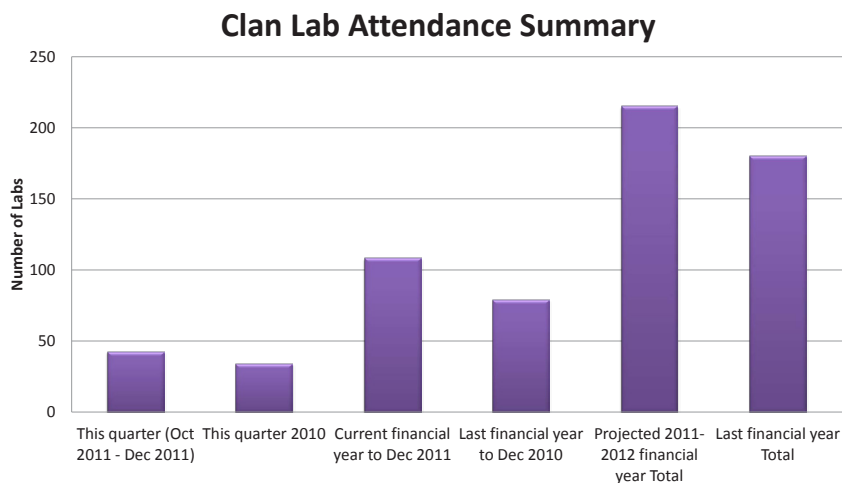


Figure 4

3,4-METHYLENEDIOXYMETHCATHINONE (Methylone) and AM-2201 were identified as components of 39 plant material samples from the brand "K2" in 10 different products. Four of these products had one or two additional synthetic cannabinoids present, and one sample contained MDPV as well.

CLANDESTINE DRUG LABORATORY (CLAN LAB) NEWS

A total of 180 clan lab call outs were attended by ChemCentre chemists in the 2010 – 2011 financial year. We are well on track to increase that number for this financial year, having attended 108 clan labs this financial year to the end of December 2011.



Summary of 2010 financial year

Nearly all of the clan labs attended during this period were Nazi labs and the majority of these saw the cooks producing their own ammonia from caustic soda and ammonium sulphate fertiliser. The continued use of liquid LPG to condense the ammonia gas resulted in at least eight lab-related house fires and/or explosions for the 2010-2011 financial year. While most labs attended were relatively small scale, many scenes indicated that multiple small scale cooks were being carried out in place of a single larger scale cook.

The largest scale Nazi lab located during this period was in Beverley where over 40 grams of high purity methylamphetamine was seized. Only two non-Nazi method labs were attended by ChemCentre during this period; one was a home-bake heroin lab and the other was the beginning of a Red P laboratory.

Summary of current financial year

Methylamphetamine continues to be the most commonly manufactured drug in Western Australia. Of the 108 labs attended thus far, only two were found to be unrelated to methylamphetamine manufacture. One was a home-bake heroin lab and the other was a dimethyltryptamine (DMT) extraction lab.

A Red P/Iodine lab was attended late in December 2011, however the Nazi method is the most popular choice for WA cooks. The largest scale Nazi lab located during this period was in Highgate where approximately 30 ammonia gas generators were located in the roof space of the property, along with unknown liquids and bulk wastes. Logistically, the location of the lab proved challenging as entry and exit was via a very small man hole, ammonia levels were very high in a small, confined area, and the roof space comprised long, narrow beams and exposed electrical wires. FESA attended the scene and assisted by ripping open the roof space to provide ventilation, and provided safety back up. The extent of the set-up in the roof space was not fully realised until the items were brought down a ladder through the man hole one by one. It took two teams of two at least 10 hours to render the site safe enough for processing to begin.

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CLANDESTINE DRUG LABORATORY (CLAN LAB) REMEDIATION

The Illicit Drugs section is involved in the clan lab remediation arena on a number of fronts. Firstly as a member of an inter-agency committee, along with the WA Police, Health Department and Department of Environment and Conservation, we are trying to implement the Federal guidelines as a standard procedure to deal with the aftermath of a clandestine laboratory site. This work includes the drafting of a localised 'how to' guide for local environmental health officers (EHOs) and property owners as well as building a database of affected locations.

Secondly we produce a contamination report at every scene we attend, for both private and state-owned housing. This report is then made available through the EHOs or HomesWest to assist in the clean up process, and records any observations made, identifies what chemicals were present at the property as well as suggested advice for their removal and decontamination of the property. These reports have been well received by our colleagues in other government agencies.

Finally we are developing a capability to conduct post-clean up swabbing and analysis of the site to validate the remediation process. This is a cross-ChemCentre project that draws on the expertise of the Emergency Response section in statistical-based sampling as well as the trace analysis of illicit drugs and their precursors within the Illicit Drugs section.

This statistical-based approach allows for a scientific approach to be taken when judging how many samples to take and from what locations and provides for defensible results rather than the inferior ad-hoc sampling as is commonly used.

