



Drug consumption facilities Zurich

Field report Drug Checking

Lisbon Addictions, 24 November 2022
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Pilot project 2018 - 2019; drug checking in drug consumption facilities Basel and Zurich

Impact evaluation through social design on behalf of the Federal Office of Public Health: Key results

- Counselling promotes safer-use behaviour
- Counselling can have an impact on buying behavior
- Drug Checking is an offer in demand

Conclusion: Drug checking should be offered in drug consumption rooms

Source: socialdesign (2019)

https://www.infodrog.ch/files/content/nightlife/de/20190917_Schlussbericht_BAG_DrugCheckings_final_mit-Anhang.pdf

Drug Checking as a permanent offer in DCR Zurich since 2020

Methodical approach (5 times per year - maximum 100 analyses):

- Drug checking staff was in the facility for 5 hours at a time
- motivated clientele to participate
- Took substance samples
- held a mandatory counselling interview
- sent the substance to the external laboratory
- after 5 days the laboratory informed us about the result
- the result was discussed with the clientele
- Warnings were sent out depending on the case

Effects of drug checking in DCR Zurich

- 7 Drug Checking Events from 2020-2022
- 5 Substances per Drug Checking Event / Capacity was 20 samples
- Heroin (average purity 25%) / Cocain (average purity 90%)
- Very small number of consumers (approx. 5)

Reasons given:

1. Loss of substance
2. Do not trust the results

Conclusion

- Clients often do not trust the results
- we reach only a few people
- they usually do not wait with consumption until the result is known
- only a few people are willing to give substances for analysis
- we temporarily stopped the service

Drug checking in DCRs in Switzerland

Part 2

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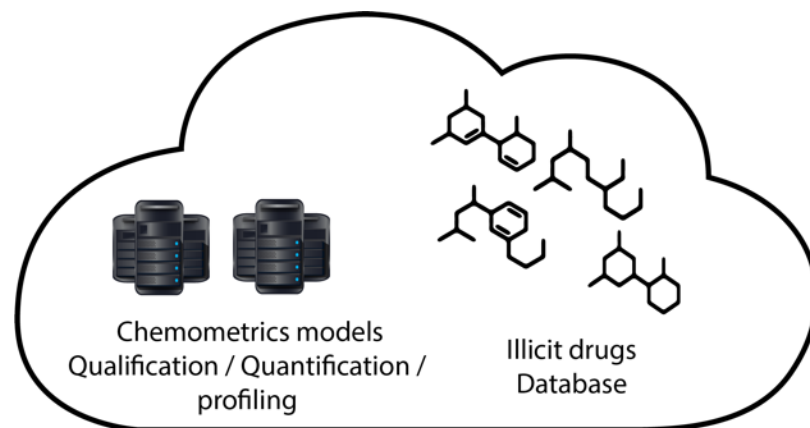
A new approach

- > Near Infrared Spectrometer: MicroNIR
 - > 950 – 1650 nm
 - > Signal to Noise 25000:1
- > Portable
 - > On-time response
 - > No sample preparation
 - > No specific knowledge



N I R L A B

NIRLab - Concept



NIRLAB Cloud

- Data storage
- Data treatment using chemometrics model



MicroNIR



NIRLAB Mobile App

- Interface for receiving the results
- Interface for sending the data to the cloud
- Display of the results



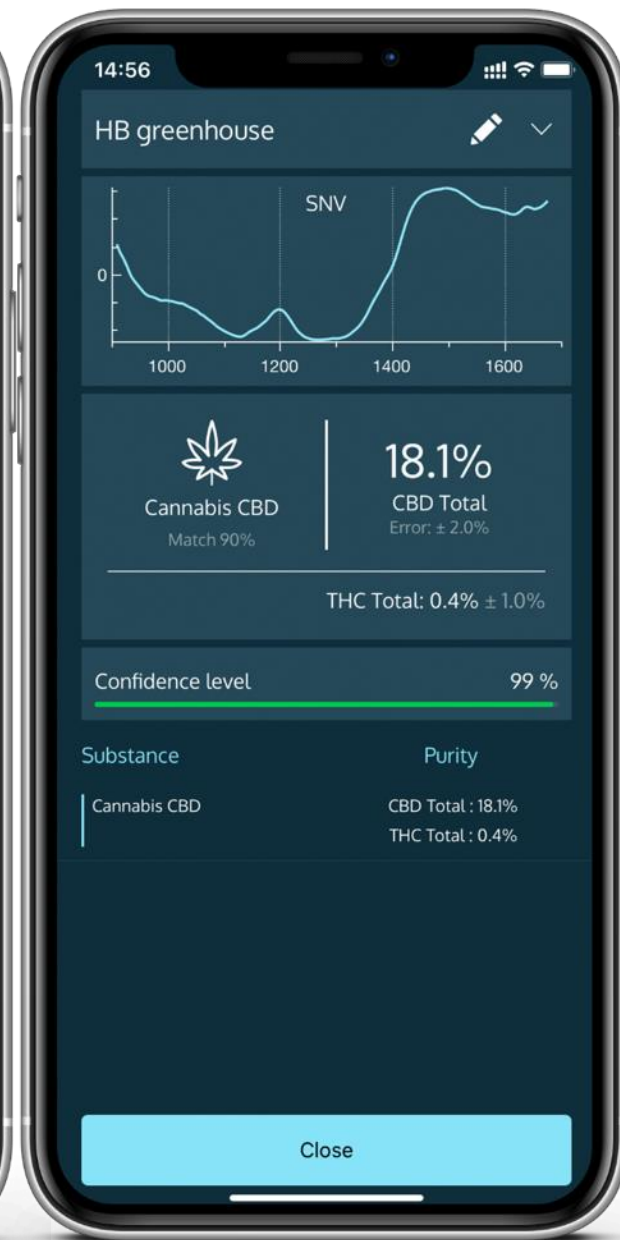
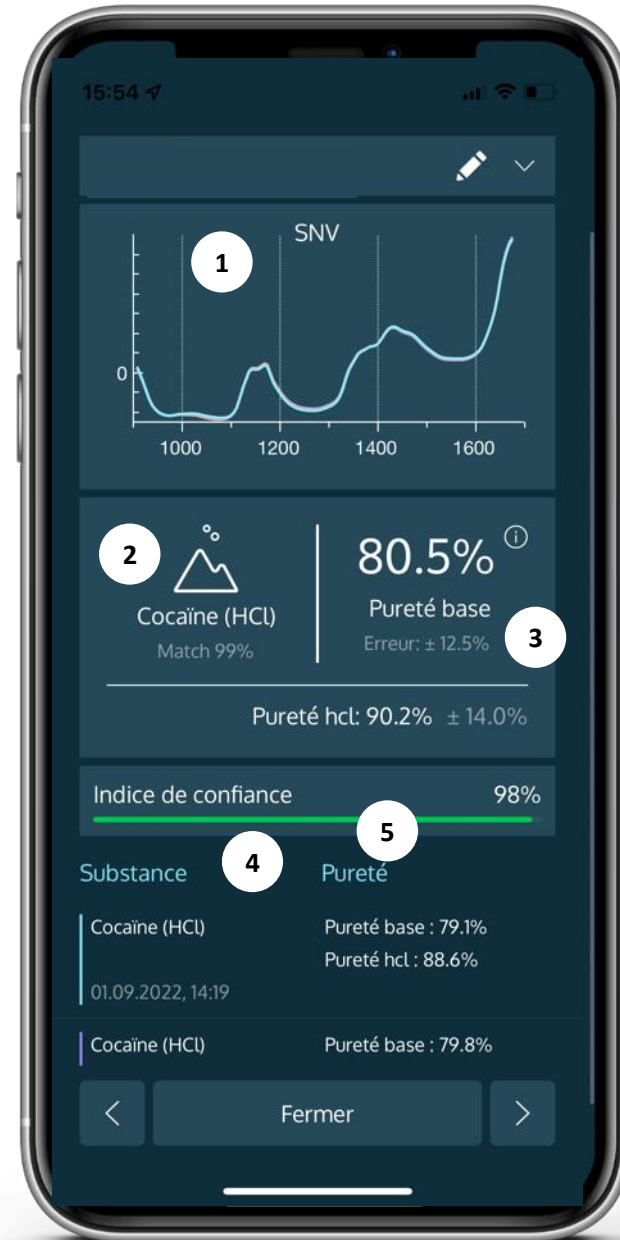
NIRLAB Desktop App

- Display and monitoring of the database
- Spatial and temporal analysis
- Hotspot detection
- Detection of new trends

NIRApp

Mobile app shows:

1. NIR spectra
2. Identification of the substance
3. Quantification information
4. Cutting agent (if available)
5. Confidence level



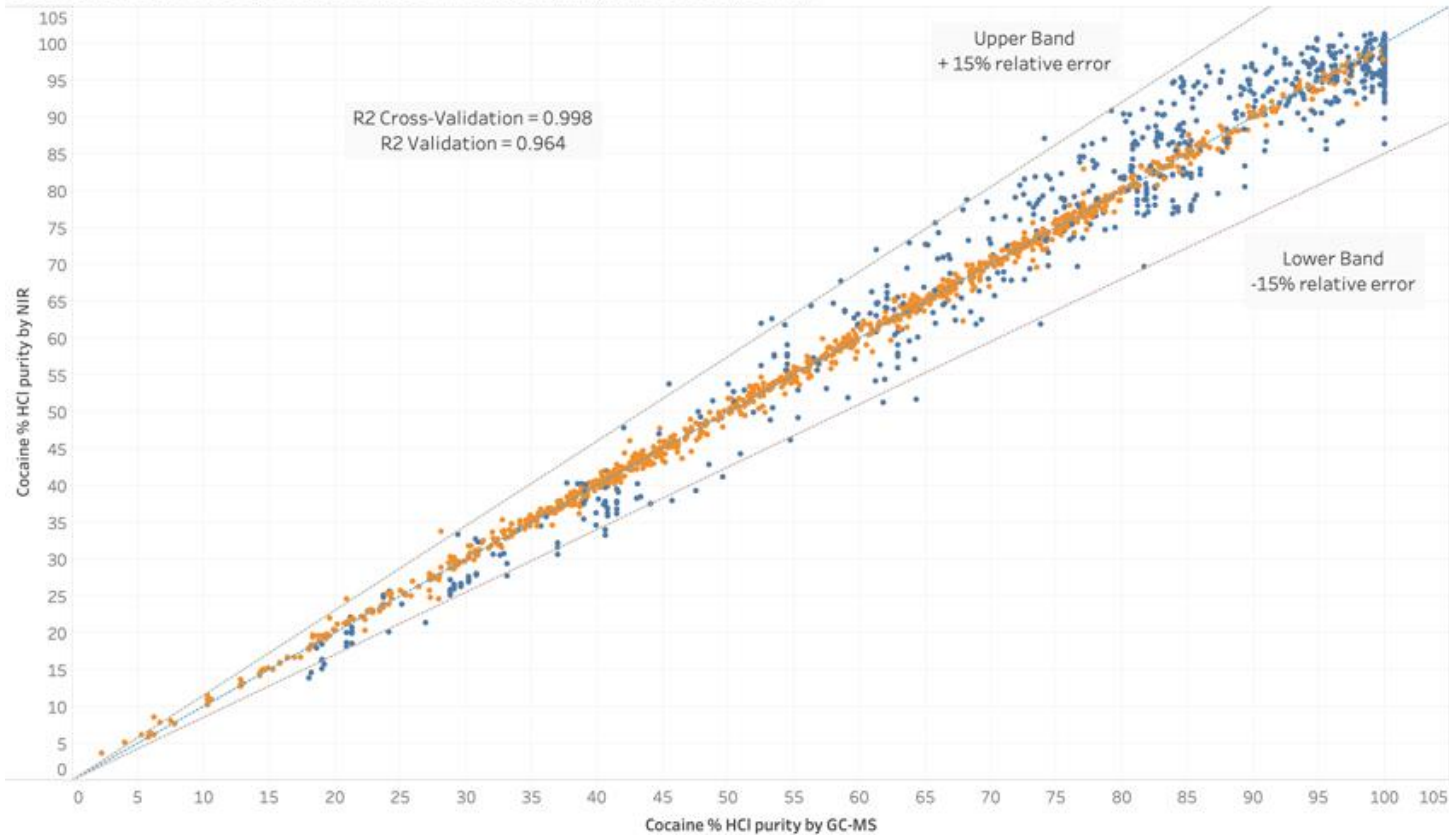
Substances

Illicit drugs	Qualification	Quantification
Cannabis	CBD-type vs THC-Type vs Mixte	Yes
Haschisch	Yes	Yes
Marijuana	Yes	Yes
Cocaine	Yes	Yes
Heroin	Yes	Yes
MDMA / XTC	Yes	Yes
Methamphetamine	Yes	Yes
Amphetamine	Yes	Yes – in improvement
Ketamine	Yes	Yes
NPS – a selection	Yes	No

Identification of more than 60 substances used as cutting agents or precursors

Quantification model for cocaine specimens

Cocaine Validation Set - Quantitative model - Predicted (NIR) vs Reference (GC-MS)

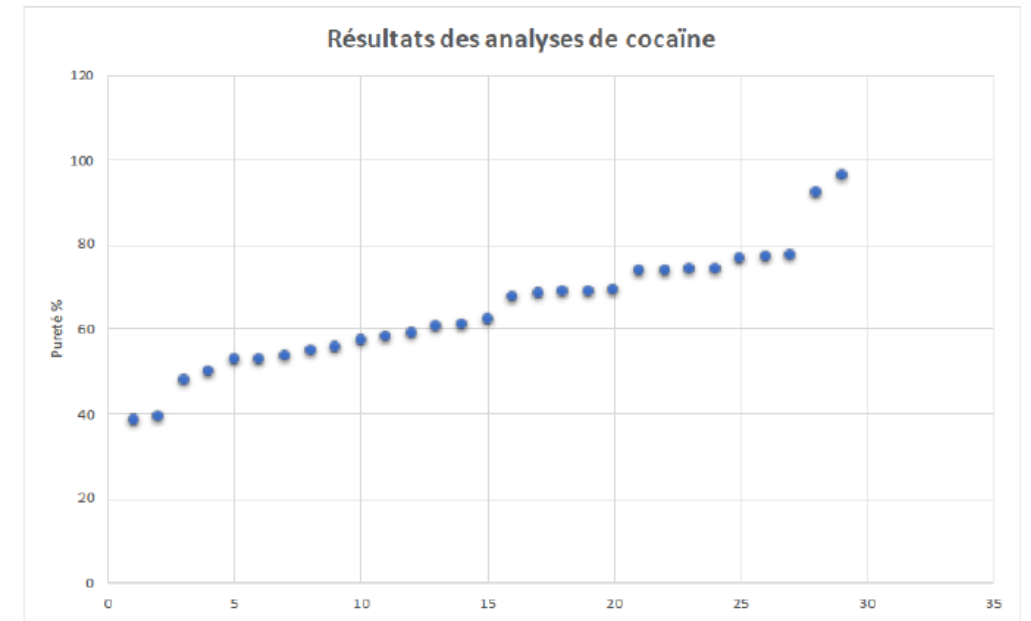
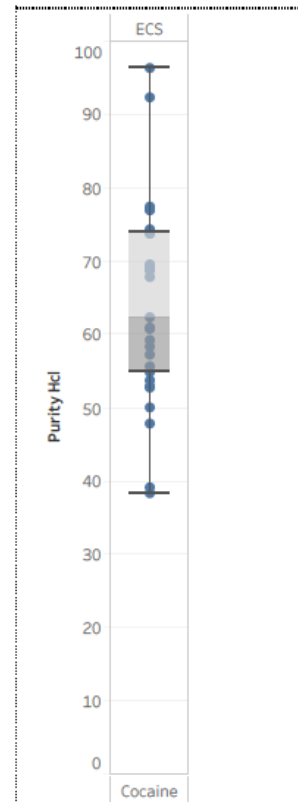
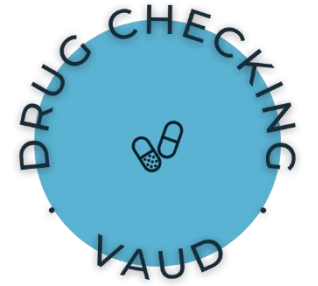


Method NIR certified
under ISO 17025
in the forensic laboratory



Cocaine MicroNIR method (ISO 17025)		Cocaine ISO 17025 validated GC-MS method	
Concentration (%)	Relative Expanded Uncertainty (%)	Concentration (%)	Relative Expanded Uncertainty (%)
21.2 ≤ C < 40.5	15.5	1.15 ≤ C < 5.5	17.0
40.5 ≤ C < 81.6	12.5	5.5 ≤ C < 69.8	10.0
81.6 ≤ C ≤ 98.5	7.7	69.8 ≤ C < 87.3	13.0

DRUG CONSUMPTION ROOM



Nombre de spécimens : 29
Pureté moyenne : 64.4 %
Minimum : 38.4 %
Maximum : 96.4 %

DRUG CONSUMPTION ROOM (first intervention)

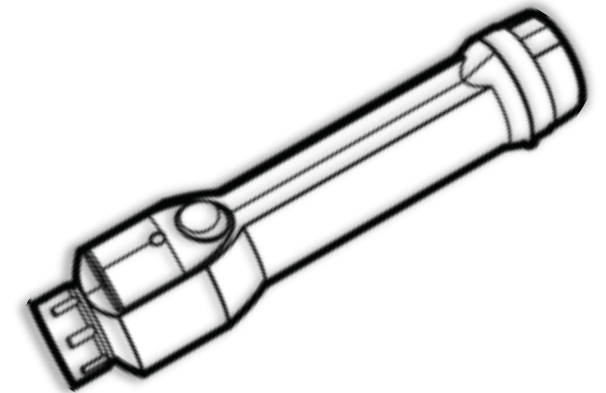
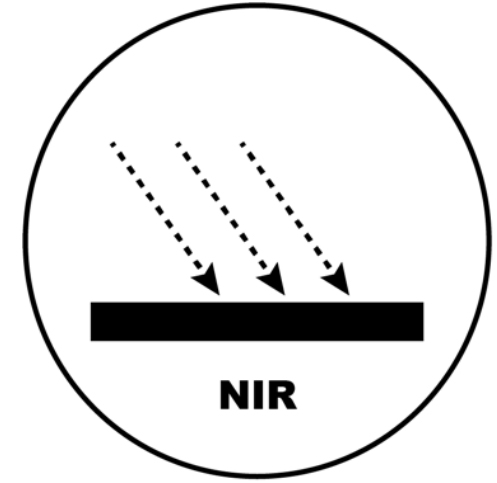


- 4 persons (4 men), 6 analyses
- 1 x heroin (14%), 5 X cocaine HCL (58-84%), 1 x crack (82%)
- Talks: 20 - 40 minutes !
- Many topics : (consumption habits, quantities, places of consumption, form of consumption, mixtures, eating, drinking, sleeping, etc.)
- NIRLab attracts a lot of interest...



NIRLAB advantages

- No sample preparation, no chemicals
- Real time response
- Portable, quick set up
- Affordable price
- No need of technical formation
- Database easily updated



NIRLAB drawbacks

- Complex mixture could be problematic
- Detection limit making analysis of certain powerful products difficult (fentanyl, LSD)

