Response to the Misuse of Drugs (Medicinal Cannabis) Amendment Bill

By a Consortium of NZ companies comprising:

Hikurangi Group

Ligar Limited Partnership

Plus Group

Anonymous Parties (at this stage)

Collectively named 'Cannabinoid Consortium' for the purposes of this submission.

March 2018

Opening Statement

Background to our Cannabinoid Consortium

Our consortium has formed with the goal of applying world-leading science and community values to the whole hemp and hemp product supply chain in New Zealand. Rather than being a me-too producer of cannabinoid products (and fibre by-products), we believe we have the opportunity to develop high value products which have a significant competitive advantage in both local and international markets.

Hikurangi Group (Hikurangi) is group of social enterprises including charitable entities, joint ventures and private companies, with a focus on biotechnology for medicines and natural health products based in Ruatoria. Hikurangi entities have been leading the development of New Zealand's first vertically integrated medical cannabis company with breeding, growing, processing, manufacturing, marketing and distribution capabilities and infrastructure. Hikurangi is in the process of taking the first medical cannabis product grown, manufactured and tested in New Zealand to clinical trial.

Ligar Limited Partnership (Ligar) specialises in extracting specific molecules from liquids using molecularly imprinted polymers. Ligar has been developing systems to extract CBD and other cannabinoids for the past 2.5 years. This technology is a world-first and significantly more cost effective than existing extraction methods, enabling much larger volumes of material to be processed. Our intent is to offer NZ a significant competitive advantage and to be a catalyst for creating a successful hemp industry. Further details on the company are provided in Ligar's individual submission.

The Plus Group of Companies offers a unique range of specialised fully integrated horticultural solutions both domestically and internationally. Its core passion is the long-term sustainability of horticulture and other food crops delivered through investment, service excellence, experience and innovation.

Anonymous at this stage of submission: a Māori family-owned business based in the South Island exporting a range of food and beverages, an expert plant breeder and an experienced process engineer.

To achieve our goal of creating a successful hemp industry, we require legislation that is both logical and supportive of NZ companies which are looking to compete in global markets on (at least) an even footing. The proposed changes to NZ legislation are a step forwards but we believe that, in their current form, they are unnecessarily restricted. Our submission seeks to offer simple, alternative approaches that meet the stated goals of the amendment to the Act.

Summary of Recommendations

Our full response to the Misuse of Drugs (Medicinal Cannabis) Amendment Bill is detailed in the following sections and included below is a summary of our recommendations. Note that throughout this document the Misuse of Drugs Act will be referred to as 'the MoDA' and the Misuse of Drugs (Medicinal Cannabis) Amendment Bill will be referred to as 'the Amendment Bill'.

Classification of cannabidiol and other medicinal cannabis molecules:

1. Cannabidiol is **not** defined as 'an isomer of tetrahydrocannabinol' under Schedule 2, Part 1, Clause 2 of the MoDA.
2. The Ministry of Health (or other relevant authority) issues guidance to the industry to formally clarify the medicinal cannabis molecules that are covered by Schedule 2, Part 1, Clauses 2-5 of the MoDA.

Definition of CBD product:

3. Therapeutic products derived from medicinal cannabis should have a percentage restriction placed on the THC content, as opposed to the content of 'other cannabinoids'.
4. An objective and scientific approach should be taken to determine this percentage.
5. The proposed definition for 'CBD product' is replaced with an equivalent definition for 'Medicinal Cannabis product', which will reduce market barriers for future medicinal cannabis products.

Definition of Cannabis preparation:

6. The definition of 'Cannabis preparations' is amended to exclude preparations from low THC hemp cultivars which already have a restriction of 0.35% on THC.

Export potential:

7. The MoDA should explicitly permit export of medicinal cannabis products, including isolates and finished products with THC levels under the specified limit, from New Zealand.

Impact on industry employees:

8. Police clearance checks should not be required for staff engaged in the growing and processing of low-THC Hemp.

Patient access to therapeutics:

9. The category of persons excluded from prosecution is widened to include any medicinal cannabis user who has their doctor's explicit professional support in writing for a specific period of time or ongoing if the condition is incurable.

Classification of medicines:

10. The guiding principles for determining the classification of medicinal cannabis products under the Medicines Act should be based on pre-established ratios of active ingredients.
11. Amendments to the MoDA should not introduce any unnecessary barriers to the effective functioning of the Medicines Act and the commercial environment for producing medicinal cannabis products in New Zealand.

We request the opportunity to make a supplementary submission once the draft regulations are released. We wish to be heard on this submission.

Detailed Response to the Amendment Bill

A. Classification of Cannabidiol

1. The Consortium is supportive of the Amendment Bill's position that cannabidiol (CBD) should not be classified as a controlled drug.

2. However, our position is consistent with that of ESR, as outlined in their Classification of Cannabidiol Discussion Document (February 2016), and objects to the proposed amendment to Schedule 2, Part 1, Clause 2 of the MoDA [Clause 9 (2) of the Amendment Bill], which defines cannabidiol as an isomer of tetrahydrocannabinol.

3. Schedule 2, Part 1, Clause 2 covers the following as Class B controlled drugs: '*The isomers of the substances mentioned in clause 1 whenever the existence of such isomers is possible within the specific chemical designation.'*

4. We agree that CBD can be classified as an isomer of THC since it has the same molecular formula as THC ($C_{21}H_{30}O_2$) but a different chemical structure; however, the legislation cited above makes it clear that such an isomer must be 'within the specific chemical designation' of the parent substance listed as a Class B controlled drug (in this case, THC).

5. We do not believe that CBD exists 'within the specific chemical designation' of THC for the following reasons:

    a) Since 'specific chemical designation' is not formally defined in the legislation, we have based our interpretation on that of chemistry experts, who would define it as a group of substances that *share the same chemical properties and functionality*.

    b) CBD and THC are classified as structural isomers, meaning that they share the same molecular formula but have different structures and functional groups. THC has an oxygen atom bound to 2 carbon atoms but lacks the extra hydroxyl group of CBD. This gives the 2 compounds different functionalities, chemical reactivities and physiological effects in the body.

    c) These characteristics clearly place CBD and THC outside of the definition of stereoisomers, which have the same molecular formula and bond structure, and consequently identical behaviour in most chemical reactions.

    d) According to the advice from the Expert Advisory Committee on Drugs to Hon Peter Dunne in 2017[1], the Ministry of Health considers CBD to be an isomer of THC based on 'legal advice specifically on this issue'. As per ESR's position, we do not agree with the legal advice received.

    e) If this legal position was extended to other substances, it could be argued that piperine, an extract from black pepper, is an isomer of morphine and should be therefore be classified as a Class B

[1] Advice from the Expert Advisory Committee on Drugs on the Classification of Cannabidiol to Hon Peter Dunne, Associate Minister of Health; File number: AD62-14-2017

controlled drug due to their same molecular formulae ($C_{17}H_{19}NO_3$). Yet piperine is widely available for commercial use as a food grade flavour and fragrance ingredient. It is also recognised for its health benefits and is used in a number of nutraceutical products, often in combination with tumeric *(pictured below).* Consistent enforcement of the isomer provisions of the MoDA would deem such products unlawful.

f) Similarly, progesterone (like CBD) is a structural isomer of THC, given that it has the molecular formula $C_{21}H_{30}O_2$. Progesterone is recognised as a prescription medicine (1558 of Schedule 1, Part 1 of the Medicines Regulations 1984), with an exception permitted for medicines that are below a specified concentration. Products containing progesterone below this concentration are freely available in New Zealand (e.g. Biovea product pictured)

6. In recognition of the ambiguity that has surrounded the classification of CBD under the MoDA, the Consortium recommends that the Ministry of Health (or other relevant authority) issues guidance to the industry to formally clarify medicinal cannabis molecules that are classified as isomers within the specific chemical designation of THC or which are otherwise covered under Schedule 2, Part 1, Clauses 2-5.

We recommend that:

- Cannabidiol is **not** defined as 'an isomer of tetrahydrocannabinol' under Schedule 2, Part 1, Clause 2 of the MoDA.

- The Ministry of Health (or other relevant authority) issues guidance to the industry to formally clarify the medicinal cannabis molecules that are covered by Schedule 2, Part 1, Clauses 2-5 of the MoDA.

B. Definition of CBD Product

7. Clause 4 of the Amendment Bill proposes a definition for a 'CBD product'. The Consortium objects to part (b) of the definition, which states the following in reference to a CBD product: '*(b) if it contains other cannabinoids usually found in cannabis, contains those cannabinoids in a quantity that, in total, constitutes no more than 2% of the total quantity of cannabinoids in the product.'*

8. We believe that the percentage restriction should be placed on THC, as opposed to all other cannabinoids that fall outside of the provisions of Schedule 2, Part 1, Clauses 2-5 of the MoDA. Our reasoning is as follows:

   a) The intent of the Misuse of Drugs Act 1975 (MoDA) is stated as: '*An Act to consolidate and amend the Narcotics Act 1965 and to make further provision for the prevention of the misuse of drugs.'* As per clause 3A of the MoDA, drugs are classified by their potential for risk of causing harm as a result of misuse.

   b) Based on the given intent of the MoDA, it is reasonable for any amendments to place restrictions on substances that are scheduled as controlled drugs and have the potential to cause harm from misuse.

   c) We do not believe that it is reasonable to extend such restrictions to other cannabinoids that are not covered by Schedule 2, Part 1, Clauses 2-5 of the MoDA. These substances are not scheduled as controlled drugs and, with the exception of THC and CBD, no other cannabinoids are listed as scheduled medicines under the Medicines Regulations 1984. For example, Ligar recently received advice from MedSafe, confirming that the cannabinoid cannabigerol (CBG) is not controlled under the MoDA.

   d) We have not found any other instances in the MoDA where restrictions have been placed on an entire group of molecules that falls outside of its intended scope and purpose.

9. We believe that the thought process for arriving at the 2% restriction on other cannabinoids has not been objectively considered. From the Submissions to the Expert Advisory Committee on Drugs (EACD) prepared by the Ministry of Health and the final advice from the EACD, it appears that the reasoning for the restriction is based on the following:

   a) Acknowledging the difficulty in separating THC from CBD, it was recognised that most CBD extracts may contain small amounts of THC. Since THC will remain scheduled as a Class B controlled drug, any amount of THC in a CBD product would cause it to be captured by the MoDA as a controlled drug. It was suggested that if CBD is not classified as a controlled drug, there may need to be provisions in the MoDA for an allowable amount of THC below a certain threshold[2].

   b) In a letter to Hon Peter Dunne, Associate Minister of Health, in February 2017, the EACD advised that an allowance of 2% of other cannabinoids should apply to CBD products and that the

[2] Cannabidiol: Submission to the Expert Advisory Committee on Drugs; Prepared by the Ministry of Health – 12 April 2016

Committee agreed with the reasoning given for the Australian Therapeutic Goods Administration (TGA) to down-schedule CBD to a prescription-only medicine[3].

c) The 2% threshold for other cannabinoids was proposed to the TGA to ensure that the product Epidolex (under development by GW Pharmaceuticals) would meet the criteria of a prescription medicine rather than a prohibited substance in Australia[4]. This indicates that the adoption of the 2% threshold was based on the characteristics of one product which remains pre-market.

10. It is clear from the background documentation that the original objective of the percentage restriction was to set an allowable threshold for THC content in CBD products. The psychotropic effects of THC are widely cited as the primary reason for its classification as a Class B controlled drug. While the 2% threshold proposed treats 'other cannabinoids' as contaminants, only THC is of concern to regulators within the intended scope and purpose of the MoDA.

11. We believe that the process for deciding on this threshold should be more objective than simply adopting the position of another country based on one pre-market product.

    a. The threshold should focus only on controlled drugs; there is no value to be gained from testing for cannabinoids that are of no concern.

    b. Analytical product compliance testing should focus only on controlled drugs. We note that testing for total cannabinoids is complex given the number of different cannabinoids. Each test comes with a margin of error - 0.2% would not be uncommon. If 10 cannabinoids are tested for, this could provide an analytical certificate showing 2% 'contamination' where there may actually be no other cannabinoids present. A test for only THC would provide data that meets the objective of the percentage restriction as well as simplifying and reducing the cost of the testing process.

    c. The inhibitory (or potentiating) effects of various cannabinoids on the psychotropic effects of THC should be taken into consideration. For example, there is ample scientific evidence to suggest that high concentrations of CBD inhibit the effects of THC.

12. We believe that applying the percentage restriction on THC, as opposed to all other cannabinoids, will:

    a) Demonstrate stronger alignment with the stated intent of the MoDA and the guiding principles of the Amendment Bill, as outlined in the Explanatory Note.

    b) Be in line with the regulatory treatment of other (non-cannabis) pharmaceutical, medicinal, nutraceutical and food products launched onto the NZ market.

[3] Advice from the Expert Advisory Committee on Drugs – Classification for Cannabidiol: Letter to Hon Peter Dunne, 14 February 2017

[4] Cannabidiol 2: Response to the Expert Advisory Committee on Drugs' Queries; Prepared by the Ministry of Health – October 2016

c) Be more practical within the current New Zealand environment, due to the complexity and cost of accurately analysing the content of cannabinoids other than THC.

d) Allow for greater future market access to a wider range of therapeutic alternatives for patients, which would be prohibited under the current structure.

We recommend that:

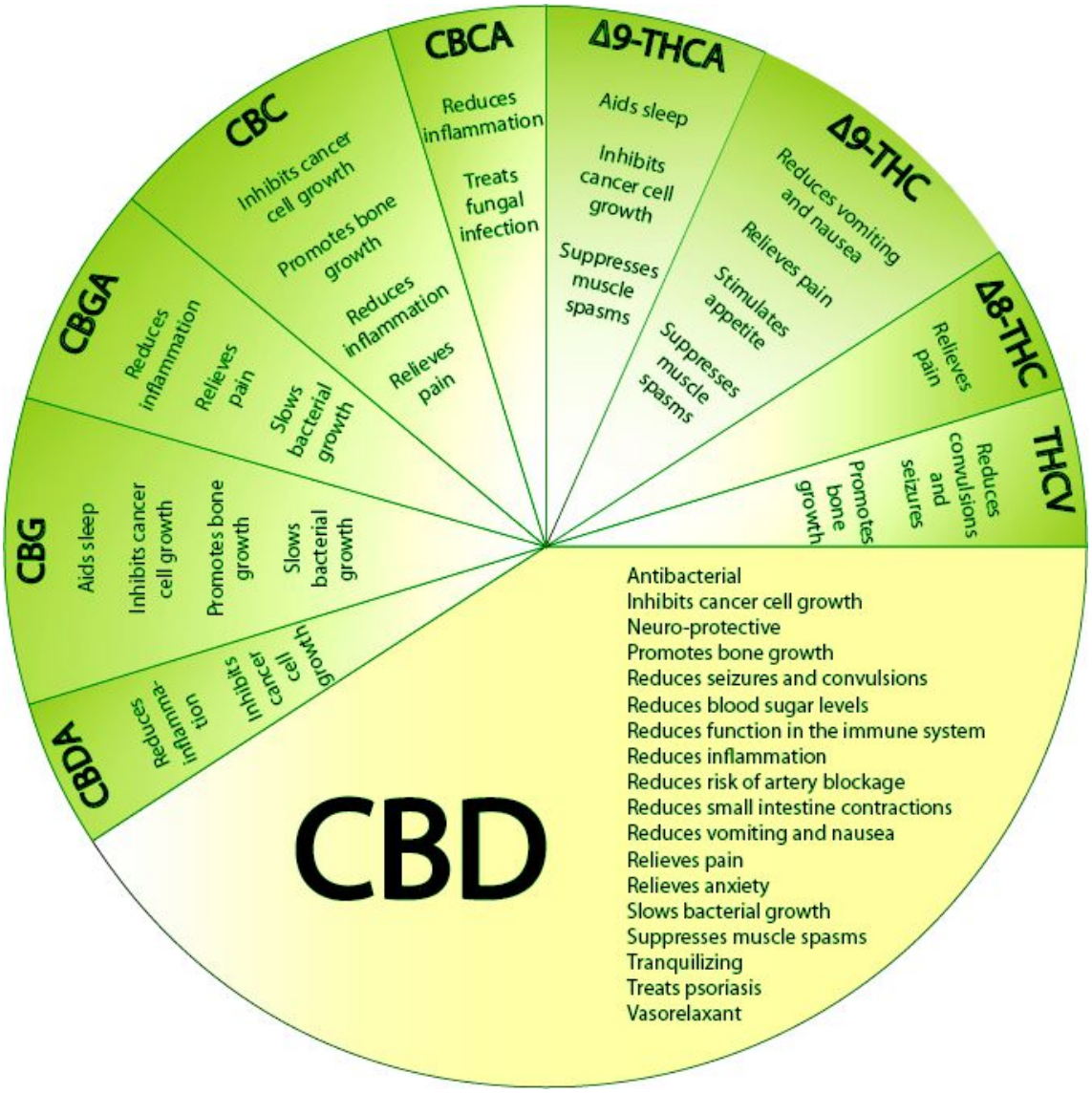
- Therapeutic products derived from medicinal cannabis should have a percentage restriction placed on the THC content, as opposed to the content of 'other cannabinoids'.

- An objective and scientific approach should be taken to determine what this percentage should be.

C. Classification of other medicinal cannabis products:

13. One of the key guiding principles of the Amendment Bill, as stated in the General Policy Statement is to *'improve access to medicinal cannabis'*. Further to the amendments proposed by the Bill, the Consortium believes that future access to medicinal cannabis products would be improved by including provisions for other cannabis products that could offer therapeutic benefits.

14. There is significant scientific and medical research regarding the benefits the following cannabinoids (among others): cannabidiolic acid (CBDA), cannabidivarin (CBDV), cannabigerol (CBG), cannabichromene (CBC) and cannabinol (CBN). The therapeutic benefits of these cannabinoids are indicated in the figure below. To align ourselves with the trends of the global medicinal cannabis market, Ligar intends to develop its technology, and the Consortium intends to commission specific plant breeding programs, to isolate these specific compounds.



15. As examples of future medicinal cannabis products, GW Pharmaceuticals already has a CBDV-based pharmaceutical candidate in Phase 2 clinical trials for epilepsy and autism spectrum disorders, as well as other confidential cannabinoid candidates progressing through their development pipeline *(see image below)*[5]. In addition, highly concentrated extracts of other cannabinoids are also now commercially available – for example, the product pictured on the right is a 92% pure CBG isolate produced by Bluebird Botanicals.

16. New Zealand is in a strong position to capitalise on the opportunity presented by other medicinal cannabis targets. Our emerging industry is rapidly developing cultivation, extraction and formulation expertise. Ligar's technology compliments this by offering the potential to selectively extract individual cannabinoids at scale, which means that concentrated products based on future specific cannabinoid targets is a technically and commercially viable opportunity for New Zealand.

17. Under the current legislation, our understanding is that products based on other specific cannabinoids would automatically be classified as Class B controlled drugs through classification as a

[5] GW Pharmaceuticals – Products & Pipeline

cannabis preparation. This suggests that further amendments to the MoDA would be required before market access to future specific cannabinoids would be possible.

18. We believe that this limitation could be addressed by taking a similar approach to that adopted for the proposed 'CBD products'. The desired outcome could be achieved by replacing the definition for a 'CBD Product' with an equivalent definition for a 'Medicinal Cannabis Product' – suggestion below:

    Medicinal Cannabis Product *means a product that:*

    a) *Contains at least one cannabinoid; and*

    b) *[Percentage restriction on THC, as per the Consortium's position outlined in section B above]; and*

    c) *Does not contain any other controlled drug; and*

    d) *Does not contain a psychotropic substance (as defined in section 9 of the Psychoactive Substances Act 2013).*

19. There is also a degree of ambiguity present through the current definition of 'Cannabis preparations' in Schedule 2, Part 1, Clause 1 of the MoDA. As stated in the Opening Statement, the Consortium's vision is to create a high value medicinal cannabis products using low THC hemp, which is already regulated in New Zealand at maximum THC levels of 0.35%. In reference to the intent of the MoDA, we believe that this restriction inherently manages potential risk of harm from misuse. Therefore, we suggest that the definition of 'Cannabis preparations' should be amended to exclude preparations from low THC hemp varieties, for which there are internationally recognised definitions. This would allow hemp to be processed for extraction of CBD and other cannabinoids. A specified maximum THC level for isolates and finished products would provide a sufficient safeguard from the concentrating of THC during the extraction process.

20. We believe that future-proofing the MoDA to allow access emerging specific cannabinoid therapeutics and cannabinoid extraction from industrial hemp would again demonstrate a greater willingness to remove barriers to market access, as well as allow New Zealand companies to carry out potentially world-leading R&D.

<u>We recommend that:</u>

- <u>The proposed definition for 'CBD product' is replaced with an equivalent definition for 'Medicinal Cannabis Product', which will reduce market barriers for future medicinal products that are derived from emerging specific cannabinoid targets.</u>

- <u>The definition of 'Cannabis preparations' is amended to excluded preparations from low THC hemp cultivars which already have a restriction of 0.35% on THC.</u>

D. Export Potential

21. The Consortium wishes to ensure that NZ product manufacturers have the ability to export medicinal cannabis products and recommends adding a comma and the word 'export' after the word 'import' in Section 14(1A) of the MoDA to make it explicit that medicinal cannabis products may be exported and the Minister can determine the minimum quality standards for those products.

22. New Zealand has a unique, unparalleled opportunity to leapfrog other nations (like Australia which is attempting to pass new regulations allowing for export) and become a leader in the highest quality medicinal cannabis products in the world. We have the science and technology expertise; outstanding growing conditions; and most importantly, a global brand for producing safe primary products of the highest quality.

23. The Medicinal Cannabis regulatory scheme should ensure New Zealanders have access to affordable medicinal cannabis products. One way to do this is to enable New Zealand companies to export to global markets on the condition that they offer products to New Zealanders on a low cost or not-for-profit basis. Alternatively the products could be sold at a price set by regulators on a pro-rata (cost per gram of cannabinoid) basis.

24. If the Amendment Bill explicitly enables export of product manufactured here, New Zealand could have over one billion dollars' worth of medicinal cannabis export orders within 12 months. These would be some of the highest value products exported from New Zealand, with existing conditional orders (already placed) paying up to US$5,000 per kilogram for 75% CBD extract. The filling of these orders will provide unprecedented employment opportunities in rurally isolated parts of the country like Northland and Tairāwhiti, both in terms of the number of people employed and the wages being offered.

25. The Bill should explicitly allow for the export of:

    a) processed medicinal cannabis products, including isolates and finished products, manufactured in accordance with the Code of GMP for Manufacture and Distribution of Therapeutic Goods; and

    b) medicinal cannabis products produced according to GPP regulations, similar to the regulations in Canada.

26. The Medicinal Cannabis regulatory scheme should include the application requirements for obtaining an export permit/licence. A clear process will reduce compliance costs and assist producers to comply with New Zealand's international obligations, including those under the Single Convention on Narcotic Drugs 1961. The Canadian 'Access to Cannabis for Medical Purposes Regulations' includes export permit requirements as will the proposed Australian Medicinal Cannabis export regulations.

27. Parliament may wish to limit the number of Medicinal Cannabis licenses as has been done in other jurisdictions. Alternatively, it may allow the market to determine what is sustainable. We recognise the need for control systems in the market which can be managed through restricting the licences to approved and monitored companies, but highlight the commercial and legal difficulties and

associated costs for producers that have resulted in the US from restricting licences. As such, the process should be developed in consultation with the emerging industry.

28. The ability for domestic manufacturers to export medicinal cannabis products will offer significant economic and social benefits to New Zealand, both through export earnings and improved access of lower cost products to New Zealanders. We believe that the availability of accessible medicinal cannabis will also reduce the likelihood of non-terminally ill patients choosing to the use illicit cannabis, which again aligns strongly with the overarching intent of the MoDA.

We recommend that:

- The Act explicitly permits export of medicinal cannabis products, including isolates and finished products with THC levels under the specified limit, from New Zealand.

E. Impact on Industry Employees

29. Currently a Medical Cannabis license requires Police clearance checks for all individuals working in or residing at the licensed property.

30. While we support the need for full disclosure between licensees, the Ministry of Health, Police and those working in the industry, the Consortium recommends that the growing and processing of low-THC Hemp (as opposed to Marijuana) should not require police clearance checks.

31. Should licences be provided to grow Marijuana for the purposes of manufacturing medicinal cannabinoids, we support the requirement for Police clearance checks. In this case we suggest that the recommendations made by Hikurangi Enterprises in their individual submission should be adopted.

We recommend that:

- Police clearance checks should not be required for staff engaged in the growing and processing of low-THC Hemp.

F. Patient Access to Therapeutics

32. We strongly believe that patients require access to a range of product options and we recognised the need for patients to access the healing properties of the hemp plant in a range of ways.

33. Any user of medicinal cannabis products, who has their doctor's explicit professional support in writing for a specific period of time or ongoing if the condition is incurable, should be free from prosecution under the MoDA.

We recommend that:

- The category of persons excluded from prosecution is widened to include any medicinal cannabis user who has their doctor's explicit professional support in writing for a specific period of time or ongoing if the condition is incurable.

G. Classification of Medicines

34. The Consortium supports the recommendations of Medical Cannabis Awareness New Zealand (MCANZ) regarding the classification of cannabis products under Schedule 1 of the Medicines Act. We agree that there should be allowances for medicinal cannabis products to be manufactured according to Good Production Practices regulations (as per the Licensed Producers provisions in Canada's Access to Cannabis for Medicinal Purposes Regulations) and that scheduling as a prescription or pharmacy-only medicine should be determined according to product specifications.

35. However, we believe that this should be managed under the scope of the Medicines Act. Our view is that, as per the guiding principles of the Amendment Bill, any changes to the MoDA should not introduce unnecessary barriers to the functioning of other regulations, particularly those like the Medicines Act which are responsible for market access.

36. This is the fundamental basis for the suggestions we propose in Parts B and C above. We believe that the inclusion of restrictions within the MoDA on substances that are not classified as controlled drugs (in this case, other non-psychotropic cannabinoids) is a barrier to the effective functioning of the Medicines Act and the commercial market.

We recommend that:

- The guiding principles for determining the classification of medicinal cannabis products under the Medicines Act should be based on pre-established ratios of active ingredients.

- Amendments to the Misuse of Drugs Act should not introduce any unnecessary barriers to the effective functioning of the Medicines Act and the commercial environment for producing medicinal cannabis products in New Zealand.