



RURAL INDUSTRIES RESEARCH
& DEVELOPMENT CORPORATION

Chemicals for Export Herbs/Spices

**A report for the Rural Industries Research
and Development Corporation**

By Jane C. Parker

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Foreword

The Australian Herb Industry is fragmented and can be broadly described as being divided into 'lifestyle' and 'mainstream' enterprises.

There has, however, been a considerable amount of production and supply chain expertise developed, which has enabled several companies to enter the export market. The surety of their continued growth is being hampered by a lack of available agricultural chemicals suitable for use on product intended for export.

This publication reviews the agricultural chemicals available to Australian herb growers under Australian regulations, and compares these with the importing residue tolerances of 35 overseas destination countries. A core list is compiled and recommendations made.

This project was funded from RIRDC Core Funds who are provided by the Federal Government and from industry revenue.

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Simon Hearn

Managing Director

Rural Industries Research and Development Corporation

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CDH Pty Ltd, Biloela, Queensland and Glenelg River Rosemary, Balmoral, Victoria

Abbreviations

| | |
|-----------|--|
| Mrl's | Maximum Residue Limits |
| Codex | Codex Alimentarius |
| FSANZ | Australian and New Zealand Food Standards |
| mg/kg | milligrams per kilogram |
| USDA | United States Department of Agriculture |
| AU | Australia |
| EU | European Union |
| US | United States |
| APVMA/NRA | Australian Pesticide and Veterinary Medicine Authority |
| WHO | World Health Organisation |
| TDMI | Total Maximum Dietary Intake |

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Executive Summary

The Australian Herb and Spice Export Industry is set to grow at an estimated 100% per annum over the next five years.

To facilitate more competent and flexible production management and more sustainable production systems this project has identified chemicals suitable for application to commercial herbs and spices, and their mrl's, to previously nominated export destinations. It has then identified the similarity/discrepancies between each target destination and brought these together to form a core list. Discussion has been held with key stakeholders, and from this a final list of agricultural chemicals suitable for use on herbs and spices has been compiled. This final list will help focus the Australian industry on a list of chemicals that can then undergo exhaustive testing.

However, the development of a core list has not, at this point in time, increased Australian herb and spice producer's ability to become more export ready. It has in fact highlighted the fact that the blossoming culinary herb and spice export industry is at major risk, should growers decide to use existing Australian Permits on product destined for overseas.

Several issues for concern have been noted:

- Herb and spices are in fact several varied species with differing habits, therefore differing reactions to agricultural chemicals. These reactions are not yet fully understood.
- The agricultural chemical permits available for minor off-label use for herbs & spices in Australia are mainly of a temporary status.
- These permits are due for renewal in 2004 and a lot of information pertinent to their renewal has not been pursued, therefore in their present capacity these permits have not got the rigour to affect entry into destination countries
- The compiled list includes several chemicals that are used in destination countries, but on differing crops. It also includes some not registered on similar food crops in Australia.
- Industry discussion has indicated that it will take several years for minor crops such as herbs and spices to have international guidelines in place.
- The fragmented nature of the Herb and Spice Industry has made it difficult for Government agencies to see a need to invest time and money in the industry
- The APVMA have limited understanding of the potential of the Herb & Spice Export Industry, mainly due to the industry's fragmented approach to its services.

Given these issues the project makes the following recommendations:

1. Using the list of chemicals generated by this report, growers and processors work together, in conjunction with APMVA, to establish a list of permits for the Australian Herb/Spice Industry.
2. Using the Australian Herb Association as an industry body, growers and processors then apply to potential destination countries for import tolerance permits.
3. Growers and processors take a more cohesive approach to the industry.

1. Introduction

The total Australian market, fresh, dried, frozen and frozen paste is worth in excess of \$40,000,000. Australian capacity to produce premium product via broad acre production can multiply this figure dramatically, as the future production capacity of broad acre herbs and spices is large.

Product must be exported, however, to obtain the required market expansion.

Presently three Queensland companies alone are exporting in excess of 2000 tonnes of herbs and spices. (This figure is tonnage in a raw format. As the exported products are processed and value-added, therefore the monetary value is in excess of \$100,000,000).

Botanical Food Company, with their innovative 'gourmet garden' cold capture technology product, have found that their export venture to the UK, Ireland, New Zealand and Iceland has produced the same per capita uptake of the product as in Australia. This infers that a venture into, for example, the US would require a tenfold increase in Australian production.

The Australian Herb and Spice Export Industry is set to grow at an estimated 100% per annum for a period of years.

By participating in the development of the Gourmet Garden product range and a new Austchilli range CDH Pty Ltd, Central Queensland and Glenelg River Rosemary, Balmoral, Victoria have launched themselves onto the world market. These grower companies are using this economic base to develop other export markets

These companies have noted three major concerns:

- There are no international guidelines in place to assist them when it comes to agricultural chemicals suitable for application on a variety of herbs/spices.
- There are small companies already exporting some herb/spices. Not all of these are organic, and if they are adhering to Australian Temporary Registrations for minor off-label use of an agricultural chemical and their mrl's, and not those of the destination countries, they are in effect putting the whole Australian herb industry at risk
- Recent concerns have been raised by Botanical Food Company, Queensland Department of Primary Industries and individual growers that there are increasing incidences of detection of residue limits above the recommended maximums in correctly applied chemicals.

This project was designed to define a list of pesticides and their Maximum Residue Limits (mrl's) suitable for use on a range of herb and spice crops which will allow Australia herb growers to become export ready to 35 countries within Asia, Europe, North America, Middle East and the Pacific. (The countries are identified in Table 1 and have been chosen from previous private market studies as suitable targets for frozen paste, fresh, dried, freeze dried and aseptic herbs.)

It will identify chemicals suitable for application to commercial herbs and spices, and their mrl's, in each country. It will then identify the similarity/discrepancies between each target country and bring these together to form a core group, which will assist the Australian industry to produce under world's best quality practices and help promote overseas the safe, non contaminated image of Australian herbs & spices. It will facilitate more competent and flexible production management and more sustainable production systems and allow Australian herb producers to competently expand their overseas markets.

Finally this core list will help focus the Australian industry on a list of chemicals which can then undergo exhaustive testing.

2. Methodology

2.1 A list of destination country contacts was compiled (Table 1) and contact made with the named individuals.

2.2 Note was made of all chemicals currently registered for Australian use and their destination country status. (Table 2) Where there were no destination country mrl's available, an extrapolated use is noted. These extrapolated uses were compiled from lettuce, leafy vegetables, brassicas and fruit eg grapes. These are described in Table 2 as 'other'.

2.3 Discussion was held with key stakeholders and from this a final list of chemicals has been compiled. (Note: not all chemicals are approved for use on herbs in Australia, so the table indicates the crop status of the chemical in Australia and two major destination markets. A blank indicates no registration for compatible food crops.)

3. Results

| Final List of Chemicals which Require Definite mrl's to be Established and their Current Crop Approvals in AU, EU and US | | | | | | | |
|---|-------------|---------|-----------|---------|---------|---------|-----------|
| Chemical | Use | Country | Crop | Country | Crop | Country | Crop |
| Azoxystrobin | Fungicide | AU | Fruits | EU | Herbs | US | Leafy veg |
| Bifenthrin | Insecticide | AU | Herbs T | EU | Herbs | US | Lettuce |
| Chlorothalonil | Fungicide | AU | Herbs T | EU | Herbs | US | Parsley |
| Fluazifop | Herbicide | AU | Herbs T | EU | | US | |
| Glyphosate | Herbicide | AU | Leafy veg | EU | Herbs | US | Herbs |
| Iprodione | Fungicide | AU | Herbs T | EU | Herbs | US | Lettuce |
| Lambda-cyhalothrin | Insecticide | AU | Tomatoes | EU | Herbs | US | Lettuce |
| Linuron | Herbicide | AU | Herbs T | EU | | US | Parsley |
| Methomyl | Insecticide | AU | Herbs T | EU | Herbs | US | Lettuce |
| Pirimicarb | Insecticide | AU | Herbs T | EU | Parsley | US | Parsley |
| Propyzamide | Herbicide | AU | | EU | Herbs | US | Lettuce |
| Spinosad | Insecticide | AU | Herbs T | EU | | US | Lettuce |

Note** Herbs T - T indicates Temporary Permit until 2004

4. Discussion of Results

4.1 Establishment of Tables 1 and 2

4.1.1 Table 1

4.1.1.1 A contact list was established via the Internet, Austrade and the relevant country embassies within Australia. This has been outlined in Table 1.

4.1.2 Table 2

4.1.2.1 As illustrated in Table 2 there was little correlation between overseas mrl requirements and Australian temporary permits.

4.1.2.2 For example, in Table 2/Column 2 /Bifenthrin which has a mrl range of 0.05-10.00 mg/kg.

4.1.2.3 Table 2 indicates few countries with legislation in place to cover any herbs/spices, (note: there are two Codex mrl's for parsley, which cover all destination countries)

4.1.2.4 There was some cohesion however:

- All destination countries were members of Codex
- If the destination country is a Codex member, but not an EU member, then Codex recommendations override individual country regulation, however individual state legislation may be applied for, but does not have priority over country legislation.
- If the destination country is and EU member then Codex recommendation has priority, followed by EU regulation, then individual country regulation.

4.2 Discussion of Options

4.2.1 Import violations in the herb/spice category are high and can have serious implications

4.2.1.1 At the 34th session of the Codex Committee on pesticide residues, a paper was presented by the delegation of South Africa et al, on the elaboration of mrl's for spices. It proposed 'given that the per capita intake of spices, based on WHO regional diets, is less than 0.5% of the diet, as a result TDMI calculations on the intake of all pesticides is well below ADI and that National Government Registrations should be accepted as interim Codex mrl's.' The Codex Committee accepted this proposal, in principle.

4.2.1.2 Following the determination of this lack of correlation of inter country legislation, a discussion was held with AVMRA and the major stakeholders as to the next most relevant move. It was felt that the decision outlined in 4.2.1.1 could be used to apply to Codex to allow the use of Australian Temporary Chemical Permits to be used instead of the mrl's of destination countries. Unfortunately the preliminary application was rejected, as it was basically designed for 'third world' situations. The application highlighted that, because of the workload of the Codex Commission, and the minor crop and low dietary intake status of herbs/spices, it could be up to eight years before Codex recommendations will be in place.

4.2.1.3 Discussion was then held with Codex and FSANZ representatives, and it was recommended that given the results outlined in Table 2 the best option for Australian growers would be to apply for individual country 'import tolerance permits'

4.2.1.4. Applications for import tolerances permits require to be supported by similar data as is required for establishment of a new chemical for registration, including product chemistry, residue chemistry, toxicology data as well as data representative of actual growing conditions.

4.2.1.5 Australian Permits for minor off-label use of agricultural chemical products are mainly temporary and due for re-registration in 2004. A number of issues regarding their re-registration have not been met, and in their present format they have not got the rigour to establish 'import tolerance permits' to the majority of the destination countries.

4.2.2 The Core List

4.2.2.1 A final list of chemicals has been developed. It contains 3 fungicides, 4 herbicides and 5 insecticides.

4.2.2.2 It has taken into consideration future requirements, and chemicals that are used in destination countries for other crops. These chemicals are suitable for extrapolation for herbs/spices. Not all chemicals are registered for use in Australia on similar food groups.

4.2.3 Database

4.2.3.1 The project included a database for general use. The implication of these results are such that a database, at this point in time, would be irrelevant.

5. Implications

The development of a core list has not, at this point in time, increased Australian herb and spice producer's ability to become more export ready. It has in fact highlighted the fact that the blossoming culinary herb and spice export industry is at major risk.

After an establishment period of over 10 years it indicates that the Australian Herb and Spice Industry is still of a fragmented nature, as the industry has little lobbying power with government bodies. In a NRA discussion on an application for Permit 3879 (bifenthrin) in 2001 it is stated '*Australia's export of herbs is low. According to RIRDC Research Paper No. 97/5, Australian exports of fresh herbs in 1993/94 totalled approximately 217 tonnes. Parsley was the major herb exported (130 tonne) with less than 1 tonne each of other individual herbs exported. The value of the herb exports is not known. Any economic penalty from violation of importing countries residue tolerances is likely to be small, given the size of Australia's export of herbs, and the risk to Australian trade from use of bifenthrin on herbs is therefore low*'. (Since this permit was issued the mrl of bifenthrin has been raised from 0.05mg/kg to 10.00mg/kg, due to several cases of non-compliance using correct application methods and withholding periods)

The Australian regulatory body is ill informed as to the state of the industry, and has a rather laid back attitude to Herbs and Spices in the scenario of Australian trade. The economic impact to the previously mentioned three Queensland companies only, were they to be in violation of import tolerances, could be in excess of \$100,000,000.

Individual growers are ill informed as to compliance requirements. (Individual players adhering to FSANZ/APVMA regulations are not told in the actual permit documentation that they could be in violation of importing country regulations. This information is available on the summary reports only, which are not available for general use.)

The industry as a whole, at this point in time, is ill equipped from a crop protection viewpoint, to carry out its proposed expansion.

6. Recommendations

6.1 Grower and processing companies work together to correctly inform the APVMA of the current state of the herb/spice industry and it's future growth prospects

6.2 Grower and processing companies work together to correctly inform the APVMA of their chemical requirements.

6.3 Using the recommendations made in this document, grower and processing companies work together with APVMA to design and implement a series of chemical trials, in line with Codex requirements. These trials need to take into consideration existing work, but need not be dependent on these.

6.4 On completion of these trials the stakeholders then facilitate a speedy completion of permits.

6.5 Growers and Processors work together to apply for 'Import Tolerance Documents'.

6.6 Growers/Processors be encouraged to pay a levy, so that future research may be undertaken in a timely manner.

7. Appendices

| Table 1 | Destination Country Contacts | | | |
|----------------|-------------------------------------|-------------------|------------------|---|
| | Codex Government Contacts | | | Other useful contacts/sites |
| Country | E-mail | Telephone | Fax | E-mail |
| Austria | hreich@bfl.at | 43 2227 1100 2812 | 43 222 7100 2959 | matthias.lentsch@bmlf.gv.at |
| Belgium | Charles.Gremer@health.fgov.be | 32 2 501 8111 | 32 2 501 8827 | Luc.Mohimont@cmlag.fgov.be |
| Denmark | ab@fdir.dk | 45 33 95 6000 | 45 33 95 6299 | ang@fdir.dk |
| Finland | anne.haikonen@ktm.fi | 358 9 1606 3654 | 358 9 1606 2670 | hans.blomqvist@kttk.fi |
| France | sgci-codex-fr@sgci.finances.gouv.fr | 33 1 44 87 1603 | 33 1 44 87 1604 | Bernard.declerq@dgccrf.finances.gouv.fr |
| Germany | Martina.DeGrave@BMVEL.Bund.de | 49 228 529 4655 | 49 228 941 4842 | k.hohgardt@bba.de |
| Greece | ax2u049@minagric.gr | 30 1 0212 4319 | 30 1 0523 8337 | t.kafritsas@minagr.gr |
| Ireland | Richard.Howell@agriculture.gov.ie | 353 1 607 2572 | 353 1 661 6263 | dan.osullivan@daff.irlgov.ie |
| Italy | blturco@tiscalinet.it | 39 06 488 0273 | 39 06 488 0273 | dar.U14@sanita.it |
| Netherlands | h.de.heer@dl.agro.nl | 31 70 3784 104 | 31 70 378 6141 | e.muller@pd.agro.nl |
| Portugal | dd@gppaa.min-agricultura.pt | 351 21 381 9320 | 351 21 387 6635 | dapc@mail.telepac.pt |
| Spain | fmittelbrunn@msc.es | 34 91 596 1346 | 34 91 596 1547 | vteruelm@mapya.es |
| Sweden | evlo@msail.slv.se | 46 18 17 5500 | 46 18 10 5848 | aran@slv.se |
| Switzerland | awilo.ochieng@bag.admin.ch | 41 31 322 9572 | 41 31 322 9574 | claudewuethrich@bag.admin.ch |
| UK | tutu.aluko@foodstandards.gsi.gov.uk | 44 20 7276 8164 | 44 207 276 8193 | martin.tilbrook@psd.defra.gsi.gov.uk |
| Iceland | thordur@fiskistofa.is | 354 569 7900 | 354 569 7991 | www.environment.is |
| Norway | berit.wilsher@snt.no | 47 2224 6650 | 47 2224 6699 | merete.dahli@landbrukstilsvet.dep.no |
| Hong Kong | www.hketosydney.org.au | | | |
| Japan | araki-yasuhiro@mhlw.go.jp | | | |
| Singapore | SEAH Huay Leng@ava.gov.sg | 65 6325 5480 | 65 6324 4563 | http.www.gov.sg/customs |
| Brunei | Dr Mohamed Yussof Bin Haji Mohiddin | | 673 2 38 2226 | |
| Indonesia | sps-2@bsn.or.id | 62 21 574 7043 | 62 21 574 7045 | attani@primebxl.be |
| Malaysia | ccp-malaysia@dph.gov.my | 60 3 2694 6601 | 60 3 2694 6517 | pkrp@pop.moa.my |
| Philippines | mcclizada@eudoramail.com | 63 2 920 6131 | 63 2 920 6134 | bpinpal@edsamail.com.ph |

| | | | | |
|----------------|---|----------------|----------------|---------------------------|
| Thailand | codex@acts.go.th | 66 2 618 8861 | 66 2 618 8863 | pisanp@tisi.go.th |
| Fiji | Ministry of Ag, sugar & Land | 6 79 3384 2333 | 6 79 3385 2334 | |
| Vanuatu | vqisvila@vanuatu.com.vu | 678 23 130 | 678 24 653 | |
| NZ | rajasekars@nzfsa.govt.nz | 64 4 463 2576 | 64 4 463 2583 | Lunnd@maf.govt.nz |
| Australia | codex.contact@affa.gov.au | 61 2 6272 5692 | 61 2 6272 3103 | angelo.valois@affa.gov.au |
| UAE | maf@uae.gov.ae | | 917 2 21 27 32 | mehrez30@hotmail.com |
| Kuwait | Mr Yousef Al-Babar | 965 241 1062 | 965 245 1141 | buabbasa@macktoob.com |
| Oman | DG of Health Affairs | 968 602 177 | 968 696 099 | |
| Saudi Arabia | SA Standards Organisation | 966 1 452 0224 | 966 1 452 0167 | |
| | | | | |
| <i>Note***</i> | <i>Personal contact for information on above 4 countries is via Moin Anwar 04 011 485 83 (Austrade)</i> | | | |
| | | | | |
| US | uscodex@fsis.usda.gov | 1 202 205 7760 | 1 202 720 3157 | EgelhoferD@fas.usda.gov |
| Canada | codex_canada@hc-sc.gc.ca | 1 613 957 1828 | 1 613 941 3537 | ariff.ally@hc_sc.gc.ca |

| Table 2 | Chemicals Approved for Australia | | | | | | | | | | |
|---------------------------|---|------------|----------------|-----------|-----------|-----------|----------|--------------|-----------|---------|------------|
| | and their overseas mrls (mg/kg) on herbs and other fruit/vegetable crops | | | | | | | | | | |
| Country & Crop | Benomyl | Bifenthrin | Chlorothalonil | Clethodim | Enamectin | Fluazifop | Fipronil | Imidacloprid | Iprodione | Linuron | Pirimicarb |
| Australia | | | | | | | | | | | |
| Herbs | 3.00 | 10.00 | 7.00 | 0.10 | 0.05 | 1.00 | 0.10 | 5.00 | 5.00 | 0.05 | 3.00 |
| Codex | | | | | | | | | | | |
| Herbs | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Parsley | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Other | none | 1.00 | 3.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| EU | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | none | none | none | 10.00 | none | none |
| Austria | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | 0.10 | none | 0.05 | 10.00 | 0.20 | 0.50 |
| Belgium | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 1.00 | 0.05 | 0.50 | none | 0.50 | none | 0.20 | 10.00 | 0.20 | 2.00 |
| Denmark | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | none | none | 0.20 | 10.00 | 0.20 | 1.00 |
| Finland | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | 0.05 | none | none | 10.00 | 0.20 | none |
| France | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | 0.10 | 0.01 | 0.30 | 10.00 | 0.02 | 0.50 |

| | | | | | | | | | | | |
|--------------------|------|------|------|------|------|------|------|------|-------|------|------|
| Germany | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 0.05 | 0.05 | none | none | 0.05 | none | 0.05 | 10.00 | 0.05 | 0.50 |
| Greece | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | none | none | none | 10.00 | none | none |
| Ireland | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | none | none | none | 10.00 | none | none |
| Italy | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 0.10 | 0.05 | 0.20 | none | 0.50 | 0.01 | 0.30 | 10.00 | 0.05 | 0.20 |
| Netherlands | | | | | | | | | | | |
| Herbs | none | none | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 0.05 | 0.05 | none | none | 0.05 | none | 0.05 | 10.00 | own | 3.00 |
| Portugal | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | 2.00 | 2.00 | 0.05 | none | none | none | none | none | 10.00 | none | none |
| Spain | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | 2.00 | 2.00 | 0.05 | none | none | none | none | none | 10.00 | none | none |
| Sweden | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | 0.05 | none | none | 10.00 | 0.05 | 0.50 |
| Switzerland | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | 3.00 | 2.00 | 3.50 | 0.10 | none | 0.10 | 0.00 | 0.05 | 10.00 | 0.01 | 1.00 |
| UK | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | 0.01 | none | none | 10.00 | none | none |

| | | | | | | | | | | | |
|---------------------|------|------|-------|------|------|------|------|------|-------|------|------|
| Other | none | 2.00 | 0.05 | none | none | none | none | none | 10.00 | none | none |
| Iceland | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | none | none | none | 10.00 | none | none |
| Norway | | | | | | | | | | | |
| Herbs | none | 0.05 | 5.00 | none | none | none | none | none | 10.00 | none | none |
| Other | none | 2.00 | 0.05 | none | none | none | none | none | 10.00 | none | none |
| Hong Kong | | | | | | | | | | | |
| Herbs | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | 1.00 | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| Japan | | | | | | | | | | | |
| Herbs | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Other | none | 0.50 | 1.00 | 1.00 | none | 0.10 | 0.05 | none | 10.00 | 0.50 | 1.00 |
| Singapore | | | | | | | | | | | |
| Herbs | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Other | 5.00 | none | 10.00 | none | none | none | none | none | 5.00 | none | 1.00 |
| Brunei | | | | | | | | | | | |
| Herbs | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | 1.00 | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| Indonesia | | | | | | | | | | | |
| Herbs | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | 1.00 | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| Malaysia | | | | | | | | | | | |
| Herbs | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Other | 5.00 | 1.00 | 5.00 | none | none | 0.30 | none | 0.10 | 10.00 | 0.50 | 1.00 |
| Phillippines | | | | | | | | | | | |
| Herbs | none | none | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | 1.00 | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|---------------------|------|-------------|------|------|------|------|------|------|-------|------|------|
| Thailand | | | | | | | | | | | |
| Herbs | none | <i>none</i> | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | <i>1.00</i> | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| Fiji | | | | | | | | | | | |
| Herbs | none | <i>none</i> | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | <i>1.00</i> | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| Vanuatu | | | | | | | | | | | |
| Herbs | none | <i>none</i> | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | <i>1.00</i> | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| UAE | | | | | | | | | | | |
| Herbs | none | <i>none</i> | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | <i>1.00</i> | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| Kuwait | | | | | | | | | | | |
| Herbs | none | <i>none</i> | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | <i>1.00</i> | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| Oman | | | | | | | | | | | |
| Herbs | none | <i>none</i> | none | none | none | none | none | none | none | none | 1.00 |
| Other | 5.00 | <i>1.00</i> | 5.00 | none | none | 0.30 | none | 0.10 | 10.00 | 0.50 | 1.00 |
| Saudi Arabia | | | | | | | | | | | |
| Herbs | none | <i>none</i> | none | none | none | none | none | none | none | none | 1.00 |
| Other | 2.00 | <i>1.00</i> | 5.00 | none | none | none | none | none | 25.00 | none | 1.00 |
| | | | | | | | | | | | |
| US | | | | | | | | | | | |
| Herbs | none | <i>0.05</i> | 2.00 | 5.00 | none | none | none | none | none | 0.25 | 1.00 |
| Other | 5.00 | <i>3.00</i> | 5.00 | 3.00 | none | 2.00 | 0.02 | 3.50 | 25.00 | 7.00 | none |
| Canada | | | | | | | | | | | |
| Herbs | none | <i>none</i> | none | none | none | none | none | none | none | <0.1 | none |
| Other | 0.50 | <i>1.00</i> | 5.00 | 0.50 | none | 1.00 | none | 3.50 | 25.00 | 0.20 | 0.10 |