

## APPENDIX C.

### RISK QUOTIENT METHOD AND LEVELS OF CONCERN

The Risk Quotient Method is the means used by the Office of Pesticide Programs (OPP), Environmental Fate and Effects Division (EFED) integrate the results of exposure and ecotoxicity data. For this method, Risk Quotients (RQs) are calculated by dividing exposure estimates by the acute and chronic ecotoxicity values (i.e.,  $RQ = \text{EXPOSURE}/\text{TOXICITY}$ ). These RQs are then compared to OPP's levels of concern (LOCs). These LOCs are criteria used by OPP to indicate potential risk to non-target organisms and the need to consider regulatory action. EFED has defined LOCs for acute risk, potential restricted use classification, and for endangered species.

The criteria indicate that a pesticide used as directed has the potential to cause adverse effects on non-target organisms. LOCs currently address the following risk presumption categories:

- (1) **Acute** - there is a potential for acute risk; regulatory action may be warranted in addition to restricted use classification;
- (2) **Acute restricted use** - the potential for acute risk is high, but this may be mitigated through restricted use classification;
- (3) **Acute endangered species** - the potential for acute risk to endangered species is high, regulatory action may be warranted; and
- (4) **Chronic risk** - the potential for chronic risk is high, regulatory action may be warranted.

| <b>Risk Presumption</b>                    | <b>RQ</b>  | <b>LOC</b> |
|--|--|------------|
| <b>Birds</b>                               |  |            |
| Acute Risk                                 | EEC/LC <sub>50</sub> or LD <sub>50</sub> /sqft or LD <sub>50</sub> /day                                  | 0.5        |
| Acute Restricted Use                       | EEC/LC <sub>50</sub> or LD <sub>50</sub> /sqft or LD <sub>50</sub> /day (or LD <sub>50</sub> < 50 mg/kg) | 0.2        |
| Acute Endangered Species                   | EEC/LC <sub>50</sub> or LD <sub>50</sub> /sqft or LD <sub>50</sub> /day                                  | 0.1        |
| Chronic Risk                               | EEC/NOAEC  | 1          |
| <b>Wild Mammals</b>                        |  |            |
| Acute Risk                                 | EEC/LC <sub>50</sub> or LD <sub>50</sub> /sqft or LD <sub>50</sub> /day                                  | 0.5        |
| Acute Restricted Use                       | EEC/LC <sub>50</sub> or LD <sub>50</sub> /sqft or LD <sub>50</sub> /day (or LD <sub>50</sub> < 50 mg/kg) | 0.2        |
| Acute Endangered Species                   | EEC/LC <sub>50</sub> or LD <sub>50</sub> /sqft or LD <sub>50</sub> /day                                  | 0.1        |
| Chronic Risk                               | EEC/NOAEC  | 1          |
| <b>Aquatic Animals</b>                     |  |            |
| Acute Risk                                 | EEC/LC <sub>50</sub> or EC <sub>50</sub>   | 0.5        |
| Acute Restricted Use                       | EEC/LC <sub>50</sub> or EC <sub>50</sub>   | 0.1        |
| Acute Endangered Species                   | EEC/LC <sub>50</sub> or EC <sub>50</sub>   | 0.05       |
| Chronic Risk                               | EEC/NOAEC  | 1          |
| <b>Terrestrial and Semi-Aquatic Plants</b> |  |            |
| Acute Risk                                 | EEC/EC <sub>25</sub>   | 1          |
| Acute Endangered Species                   | EEC/EC <sub>05</sub> or NOAEC  | 1          |
| <b>Aquatic Plants</b>                      |  |            |
| Acute Risk                                 | EEC/EC <sub>50</sub>   | 1          |
| Acute Endangered Species                   | EEC/EC <sub>05</sub> or NOAEC  | 1          |