Appendix I. Summary of Ecotoxicity Data on Diazinon Degradates

Rodgers, M. H. 2005. Diazoxon (a metabolite of the active ingredient diazinon) Acute Oral Toxicity (LD_{50}) to the Bobwhite Quail. Huntingdon Life Sciences Limited, Woolley Rd, Alconbury, Huntingdon, Cambridgeshire, England (Huntingdon Project ID: MAK 874). Sponsored by Makhteshim-Agan of North America Inc., 4515 Falls of Neuse Rd., Suite 300, Raleigh, NC 27609 (Makhteshim Project Number: R-18127)

The acute dietary toxicity of diazoxon, a metabolite of th active ingredient diazinon, to approximately 12-d old Bobwhite quail (*Colinus virginianus*) was assessed over 8 days (5 days of exposure plus 3-day post-exposure observation period). Diazoxon was administered to the birds in the diet at 30, 60, 120, 240, 480 and 960 mg a.i/kg diet of diet. The 5-day acute dietary LC_{50} was 72.3 mg a.i/kg of diet. The 5-day NOAEC of diazoxon based on reduced body weight was 9.4 mg a.i/kg diet of diet (based on a preliminary study). According to the US EPA classification, diazoxon would be classified as highly toxic to Bobwhite quail on a subacute dietary exposure basis.

Clinical signs were confined to unsteadiness/inability to stand and subdued behavior in the groups treated with at 60, 120, 240, 480 and 960 mg/kg diet. All birds in the groups treated at 60, 120, 240, 480 and 960 mg/kg diet displayed clinical and/or were found dead. Mortality was observed at 60 (20%), 120 (100%), 240 (100%), 480 (100%) and 960 (100%) mg/kg diet.

This toxicity study is classified as scientifically sound and is thus acceptable and satisfies the guideline requirement for subacute dietary toxicity study for bobwhite quail.

Rodgers, M. H. 2005. Diazoxon (a metabolite of the active ingredient diazinon) Acute Oral Toxicity (LD_{50}) to the Mallard Duck. Huntingdon Life Sciences Limited, Woolley Rd, Alconbury, Huntingdon, Cambridgeshire, England (Huntingdon Project ID: MAK 879). Sponsored by Makhteshim-Agan of North America Inc., 4515 Falls of Neuse Rd., Suite 300, Raleigh, NC 27609 (Makhteshim Project Number: R-18128). Study initiated 03/22/05; study completed 05/19/05.

The acute oral toxicity of diazoxon, a degradate of the active ingredient diazinon, to young adult mallard ducks (*Anas platyrhynchos*) was assessed over 14 days in four separate range finding tests. Diazoxon technical was administered to the birds by gavage at 5, 1 and 0.25 mi/kg bw and by gelatin capsule at 1 mg/kg bw. The 14-day acute oral LD_{50} could not be determined since all of the birds regurgitated the administered dose to some extent. Although no controls were run, an emetic response was observed at each of the doses tested. Therefore, the 14-day NOAEL of diazoxon to the mallard duck, based on regurgitation was less than the lowest dose tested, i.e., <0.25 mg/kg bw. At higher concentrations, subdued behavior and/or unsteadiness was observed in the treated birds.

This toxicity study is classified as supplemental and does not meet guideline requirements for an acute oral toxicity study of birds.

Rodgers, M. H. 2005. Oxypyrimidine (a metabolite of the active ingredient diazinon) Dietary Toxicity (LD_{50}) to the Bobwhite Quail. Huntingdon Life Sciences Limited, Woolley Rd, Alconbury, Huntingdon, Cambridgeshire, England (Huntingdon Project ID: MAK 873). Sponsored by Makhteshim-Agan of North America Inc., 4515 Falls of Neuse Rd., Suite 300, Raleigh, NC 27609 (Makhteshim Project Number: R-18190). Study initiated 04/05/05 and completed 5/18/05.

The acute dietary toxicity of oxypyrimidine, a metabolite of diazinon, to 12-d old bobwhite quail (*Colinus virginianus*) was assessed over 5 days of exposure followed by a 3-day post-treatment observation period. Oxypyrimidine was administered to the birds in the diet at 157, 306, 613, 1229, 2420, 4910 mg a.i./kg diet. The 5-day subacute dietary LC_{50} was greater than the highest dietary concentration tested, i.e, >4910 mg a.i/kg of diet. The 5-day NOEC of oxypyrimidine based on decreased body weight gain was 1229 mg a.i/kg of diet. According to the US EPA classification, oxypyrimidine would be classified as practically nontoxic to Bobwhite quail on an subacute dietary expsoure basis.

A single mortality occurred at 4,910 mg a.i./kg diet. No treatment-related clinical signs of ill health were observed in any bird at any dose level during the exposure phase of the study. There appeared to be a treatment-related effect on body weight gain over the treated diet administration period for the groups treated at 2420 mg a.i./kg diet and 4910 mg a.i./kg diet. The change in body weight gain was less than the gain observed in the two negative controls. There was no treatment-related effect on food consumption throughout the study.

This toxicity study is classified as scientifically sound and is thus acceptable and satisfies the guideline requirement for subacute dietary toxicity study for bobwhite quail.

Rodgers, M. H. 2005. Oxypyrimidine (a metabolite of the active ingredient diazinon) Dietary Toxicity (LD_{50}) to the Mallard Duck. Huntingdon Life Sciences Limited, Woolley Rd, Alconbury, Huntingdon, Cambridgeshire, England (Huntingdon Project ID: MAK 877). Sponsored by Makhteshim-Agan of North America Inc., 4515 Falls of Neuse Rd., Suite 300, Raleigh, NC 27609 (Makhteshim Project Number: R-18191). Study initiated 05/06/05 and completed 5/19/05.

The subacute dietary toxicity of oxypyrimidine to 6-d-old mallard ducks (*Anas platyrhynchos*) was assessed over 5 days with a 3-day post-treatment observation period. Oxypyrimidine was administered to the birds in the diet at 155, 318, 621, 1240, 2470, and 4990 mg a.i./kg diet. The 5-day subacute dietary LC_{50} exceeded the highest concentration tested, i.e., >4990 mg a.i/kg of diet. The 5-day NOAEC of oxypyrimidine based on decreased body weight gain was 1248 mg a.i/kg of diet. According to the US EPA classification, oxypyrimidine would be classified as practically nontoxic to mallard ducks on a subacute dietary exposure basis.

There were no treatment-related clinical signs in any treatment level throughout the study. There appeared to be a treatment-related decreased body weight gain in mallard ducks treated at 2495 mg a.i./kg diet and 4990 mg a.i./kg diet. There was no treatment-related effect on food consumption evident throughout the study.

This toxicity study is classified as scientifically sound and is thus acceptable and satisfies the guideline requirement for subacute dietary toxicity study for mallard ducks.