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To: R.L. Suber

From: S. Appleton

Subject: Comments on review of cadmiums distributed by W.D. Rowland, Rothmans International Services Limited.

In my opinion the primary vulnerabilities of the cigarette industry are:

- Contribution of cigarette smoking to cadmium toxicity in a public health context. Although exposure from cigarettes is below current ADI's (which are about $70 \mu\text{g}/\text{day}$) these ADI's may be revised lower as is now occurring with lead.

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ETS poses a similar public health issue.

- Contribution of cigarette smoking to presumed cadmium induced disease, i.e. emphysema, in a product liability context.

Potential action steps

- Conduct cadmium mass balance studies to characterize cadmium disposition in a burning cigarette; include MS and SS smoke.
- Characterize cadmium absorption and retention from exposure to mainstream and sidestream smoke.

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- Evaluate tobacco and cigarette production streams to determine sources of cadmium in tobacco and devise strategies for elimination.
- Evaluate approaches to prevent cadmium enrichment of soil and leaf.
- Explore conventional tobacco breeding and biotechnology approaches for developing tobacco cultivars which are resistant to cadmium uptake and retention.