Pesticide Regulation Under NAFTA

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Introduction

Harmonization of standards generally seen to be a good thing.

1. Facilitate trade; Lower transaction costs and barriers to entry. harmonizing field trials
2. May reduce potential for ‘race to the bottom.’ methyl bromide
3. Limits rent-seeking by protectionist interests. US CAFE standards; CA Avocado; PEI Seed Potato
But...

- Some differences in standards may be welfare-maximising. (Bhagwati; Krugman; Vogel)

- Harmonization process may be subject to rent-seeking.

- Paper asks whether we can say anything about attempts at harmonization of pesticide regs.
Started as a small mystery...

- 10 years after NAFTA trade working group (TWG) on harmonization – still have a long way to go.

- See harmonization on some things
  - End-product regs; some registration process harmonization

- But not on others.
  - Still very separate markets. Price differences persist. Access differences persist. Trade irritants (e.g. Tomatoes).

- Was curious - what was going on?
Overview

- Quick background on pesticide industry
- Even quicker background on pesticide regulation
- Stylized model (in words)
- What do we actually see?
- A few quick examples
- Conclusions
Background on pesticide industry

- 2 groups of pesticide producers
  - Patent (international; big chem; big pharma; US, EU and Japan) produce AI. Crop Life
  - Generic and formulators (national)

- Not true open entry into generics
  - Registration barrier to entry.
  - Even after patent lapses, need test data to register product. Original data often purchased from patent producer.
  - Often source chem’s owned by patent producers. Monsanto and glyphosphate
Consolidation in 1990s

**New**
- Bayer Crop Science
- Syngenta
- BASF
- Dow
- Monsanto
- Dupont Ag

**Old**
- Bayer, Aventis, Hoechst, Schering, Roussel, Rhone-Poulenc, Union Carbide
- Zeneca, ICI, Stauffer Ciba-Geigy, Sandoz
- BASF, American Cynamid, Microflow
- Dow, Eli Lilly, Rohm and Haas
- Monsanto, Haarz Seed, Seminis, Agrow, DeKalb
- Dupont, Pioneer Hybrids, Griffin
Consolidation cont’d

- Top six companies had about 50% market share in 1995; now have 77% (2005).
- Hold vast majority of AI patents.
- But reducing breadth of AIs
  - BASF announced intention to go from 300 AIs in 2000 to 100 by 2006.
- Focus is on top 10 crops and pests
  - Focus on corn, soybeans, cotton.
  - Even in diverse ag states like California, 19 crops use 83% of pesticides; 4 pesticides make up 70% of volume used.
Pesticide regulation occurs on various levels

- Regulation on chemical itself
  - Efficacy, toxicity (human and environmental)

- Regulation on end product
  - MRLs (Max. Residue Limits)

- Regulation on use
  - Worker health and safety
Areas of influence

- Have to decide what regulations to harmonize?
- To what level? (high versus low; country)
Many changes since NAFTA

- **1996 FQPA (Food Quality Protection Act) in United States**
  - Uses precautionary principle; lack of evidence of harm not sufficient.
  - Considers all sources of exposure.
  - Separate limits for infants and children.
  - EPA to reassess (re-register) all pesticides.
  - Fund for minor use crops.
  - Exempted some AIs (such as food products).

- **2000 Pest Control Product Act (PCPA) in Canada.**
  - Also uses precautionary principle.
  - Considers multiple sources.
  - Re-registration.
Mexico

- NAFTA facilitated imports of Ag. Chem.
- 2005 new regulation adopted.
- Until MRLs established, use US EPA tolerances.
Persistent differences

- Different tolerances and registration regulation (e.g. efficacy, different testing locations needed).
- Different minor crop regs.
- No exemption for food products (although ‘reduced risk’ language exists, registration process yet to be changed).
What might we predict?
(Components of a model)

- **Raising rival’s cost**
  - Firms may have the incentive to raise standards to
    others if they have a comparative advantage in
    meeting those standards.
  - E.g. U.S. -based firms may want to raise costs to EU,
    Japanese competition and to generics.
  - Increase fixed costs to entry.
  - Can lead to higher than optimal standards
    (McAusland, Gulati and Roy)
Predictions cont’d

- **Price discrimination**
  - Firms may want to keep ability to segment markets (block arbitrage and entry)

- **Given economies of scale, may want to increase specialization**
  - Since each new crop and each new country involves a fixed cost, want to encourage specialization: i.e. trade in ag products.
The Industry Working Group (represents pesticide industry) has made submissions at every stakeholder meeting since its creation in 1998.

Grower presentations only in 3 years, and vastly outnumbered by industry reps.

Only one submission by alternative agriculture (2001).

WWF at several meetings, but complained in 2001 ‘milestone’ report that TWG too directed at facilitating trade.
What do we see from harmonization?

- Work done to harmonize MRLs on food.
- Setting NAFTA-specific (often EPA) registration standards (*not* using OECD).
- Some move to facilitate registration across countries on testing, but still sunk costs to entry.
- and continued high data requirements.
Result

- Persistent price differentials (*Freshwater* and *Short*).
- Very different access, particularly for small market crops and alternative pesticides.
A few e.g.s on different access

- **Potatoes**
  - U.S. and Mexican producers able to use Carbofuran, Aldicarb and Fensulphion against soil insect pests.
  - Not allowed in Canada.

- **Methyl Bromide (MB)**
  - Since 1997, Canada introduced regs to phase out MB. 2005 all but banned.
  - United States introduced ‘critical use exemption’ for almost 10,000 tonnes – more than all other countries combined.
  - Mexico as a developing country can keep use until 2015.
**Lindane**
- 1998 U.S. EPA blocked Canadian canola seed exports treated with Lindane (canola not an allowed use although OK in US for other seeds).
- PMRA (Canada) tried to ban Lindane.
- Sued by Crompton Corp (mfr) under NAFTA Chapter 11.
- Crompton pushing simultaneously for re-registration of Lindane in US – saw Canadian move as a threat.
- Playing off one reg. agency against the other.

**Botanical oils**
- Do not need to be registered in U.S.
- Rule not adopted in Canada or Mexico.
Informal harmonization?

- USDA inspectors allowed on Mexican farms.
- As US owners move to Mexico, bringing production practices with them.
- E.g. Mars peanuts – field managers hand guidelines to Mexican growers that are exactly the same as the Georgia production practices.
Conclusions (such as they are)

- Some evidence that pesticide co’s have large influence in harmonization process.
- Are concerns about setting regs that increase market power.
- Concern that small market producers left out.
- Ironically, much of the harmonization is occurring informally through common practices imposed by food industry.