Plant variety intellectual property rights in a changing and challenging environment

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Application of Biotechnology to Plant Breeding and
Plant Intellectual Property Management

CropGen International

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Government's Anticipated Outcomes

- Stimulate Australian plant breeding
- Access to overseas varieties
- Protect food supply
- Research/breeders exemption
- Farmer's privilege
- Public breeding in major crops

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Future Operating Environment for Plant Variety Dependent Industries

- International competitiveness for variety dependent industries
- Biotechnology
- Public sector investment
- International treaties
- Global warming
- Plant breeding professionals

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- Customer preference
  - Price
  - Quality
- Wheat
  - Understand customer wants
  - Ensure that breeding programs deliver
  - Design of value chain

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- Well understood by many primary industries
  - Canadian wheat
  - Kiwifruit
  - Monsanto
- Still emphasise sensory quality
- Identify and deliver on other competitive features

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  - Low or nil chemical residues
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- Business opportunity
  - Patent genes
  - Realigning company business
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- Four companies now control >30% world seed trade
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- Measures of investment of transgenic crop varieties:
  - Applications for PVPC/PBR
  - Providers
- Species: no transgenic varieties
  - Wheat – major
  - Ornamentals – non agricultural
- Specie: transgenic varieties
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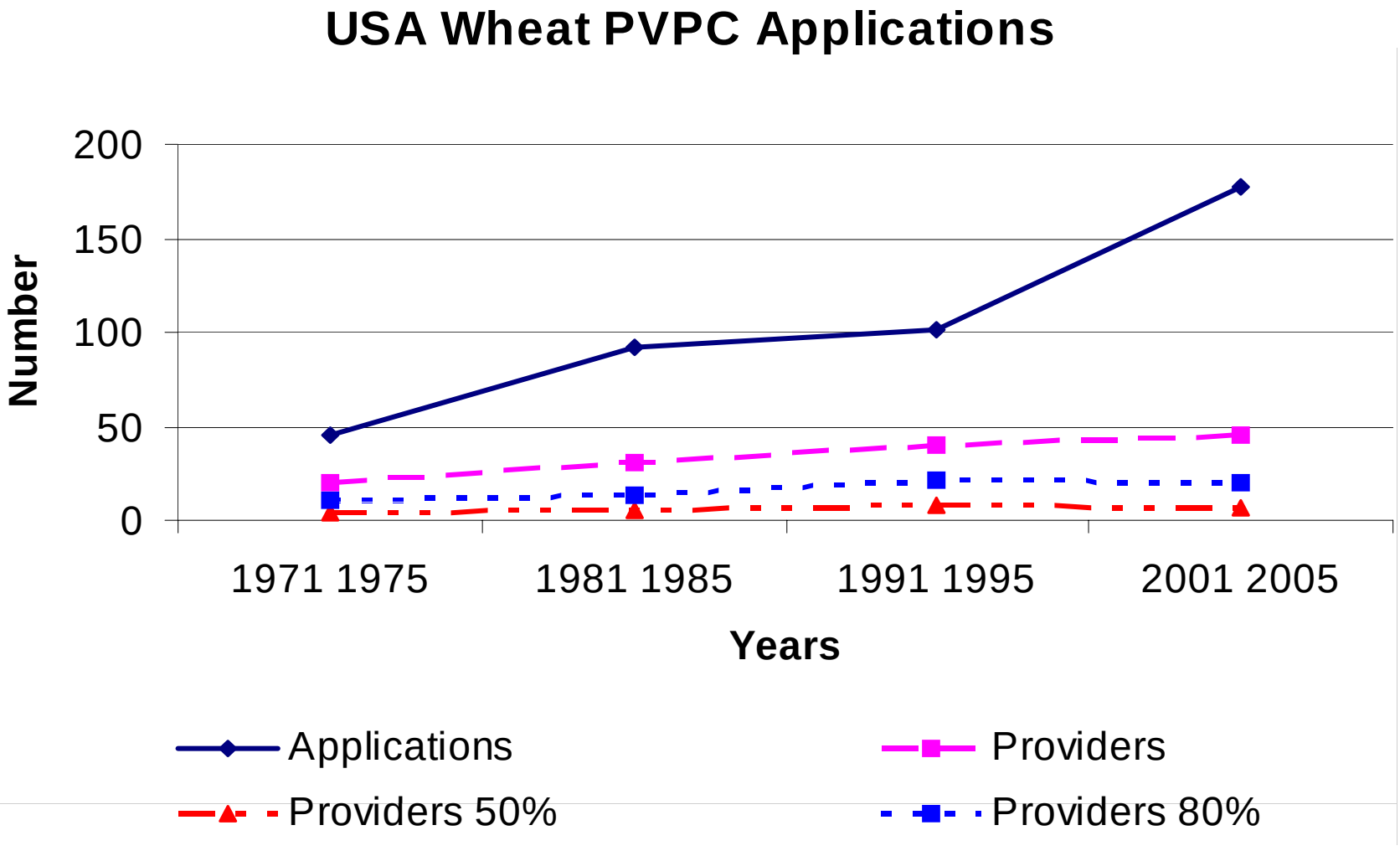
Wheat: USA



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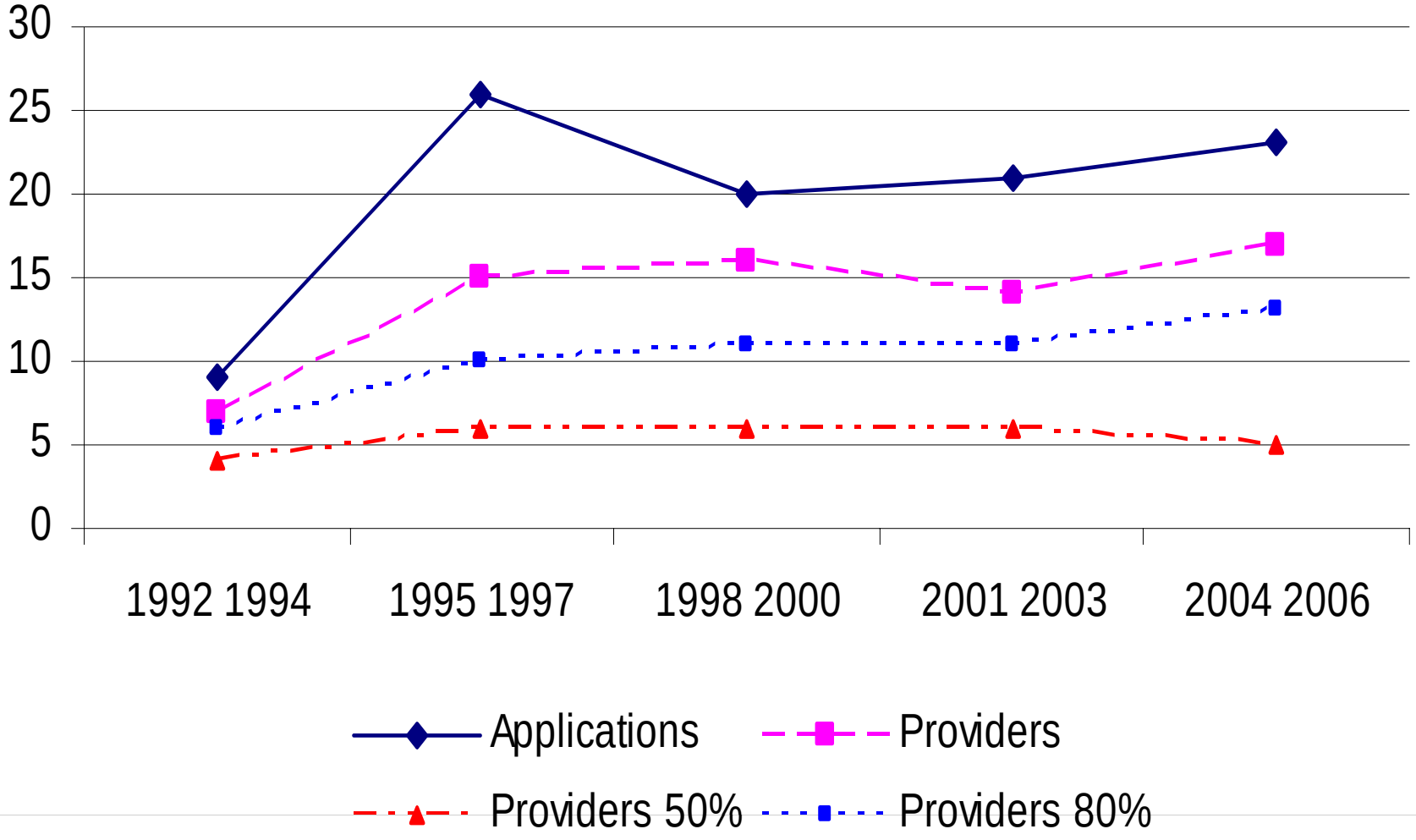
Wheat: Canadian PBR Applications



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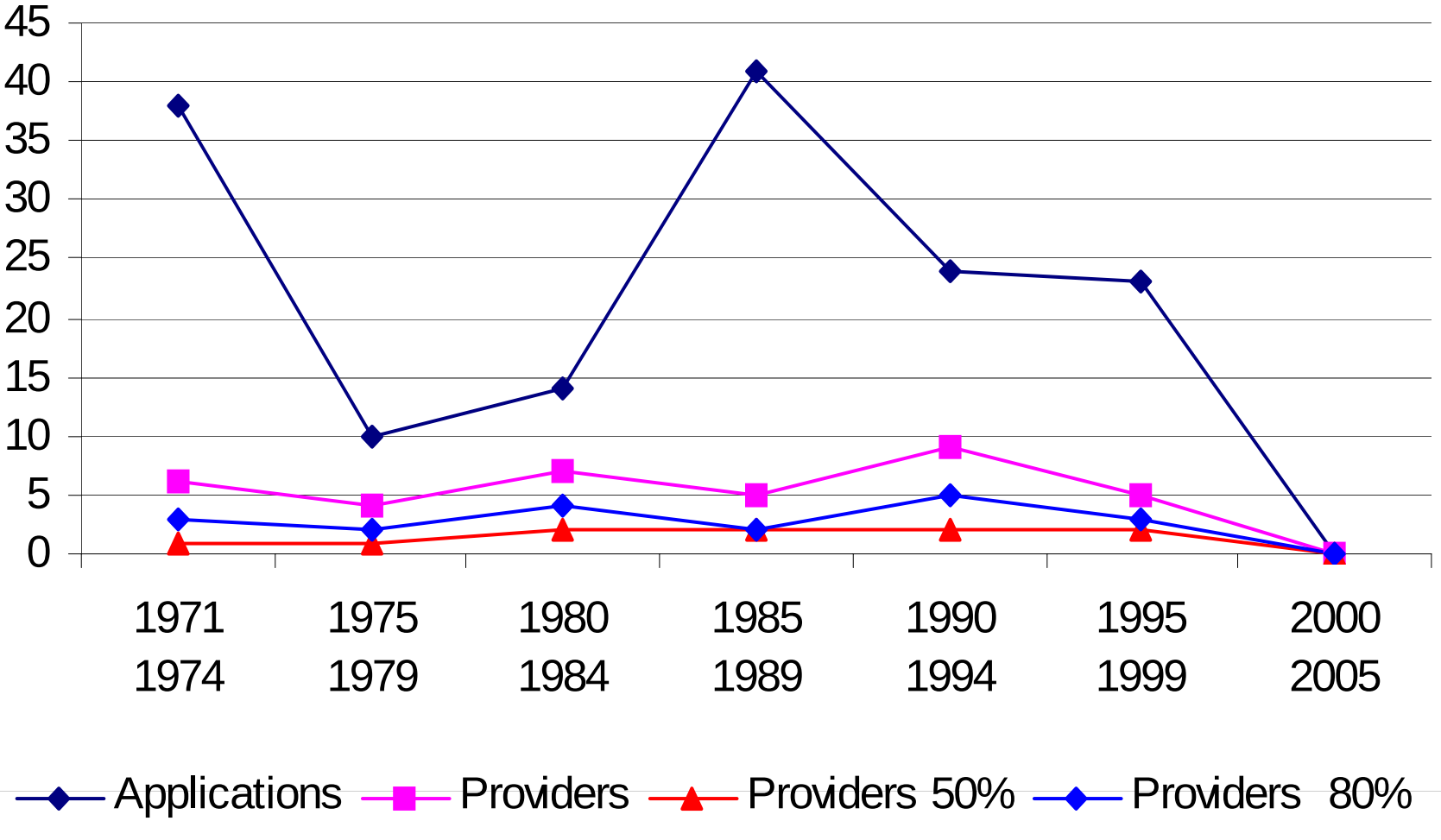

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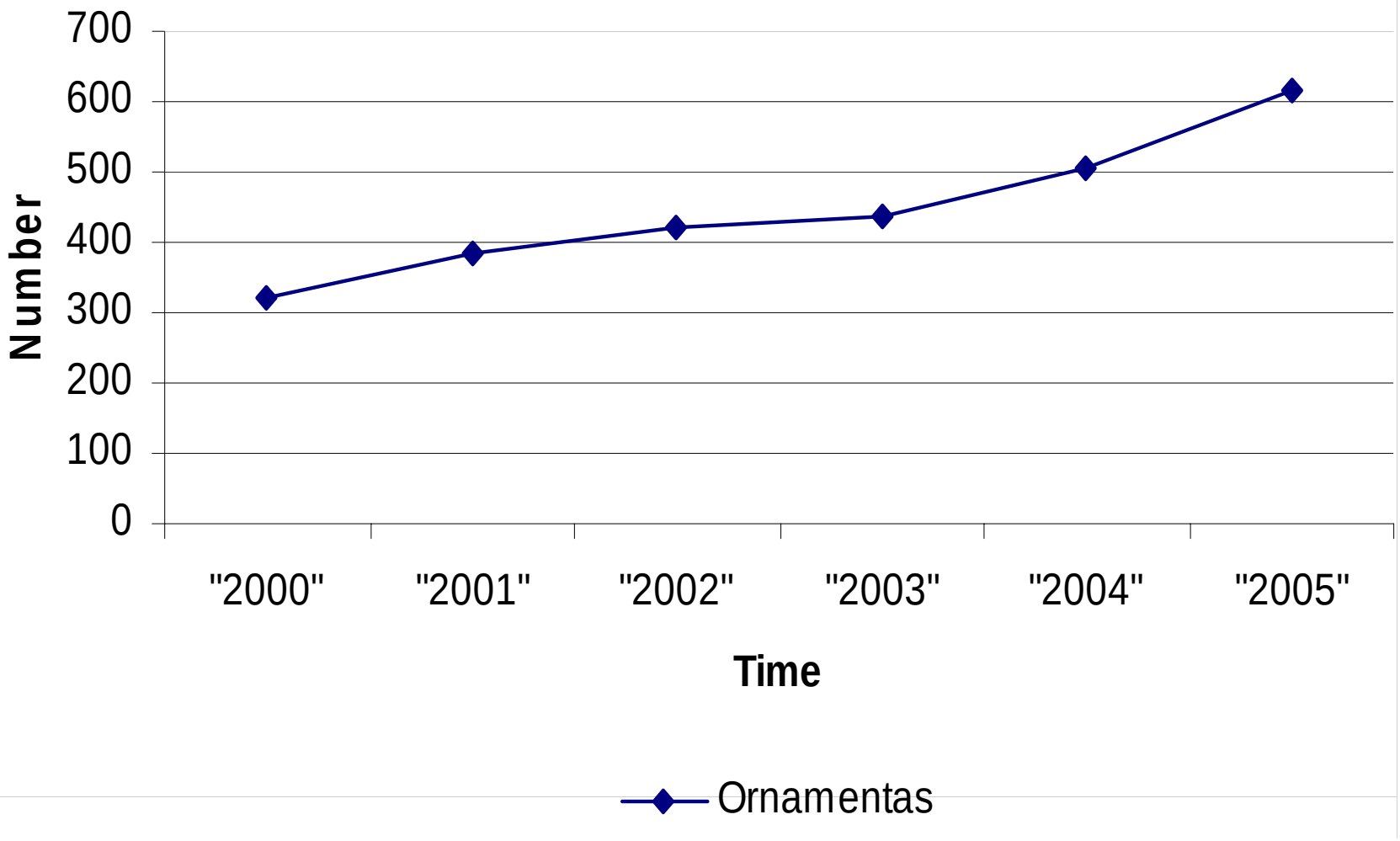

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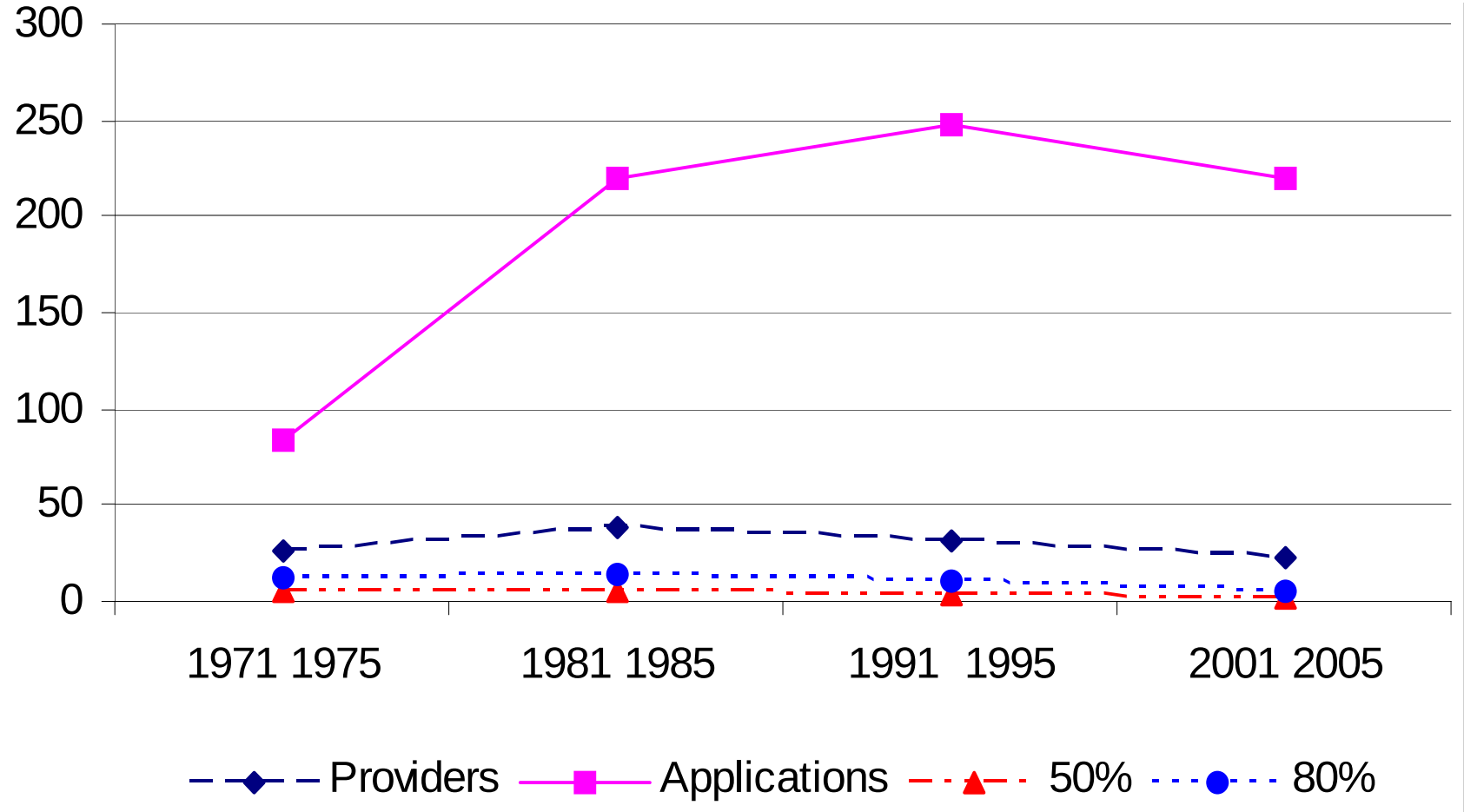
Soybeans: USA PVPC Applications



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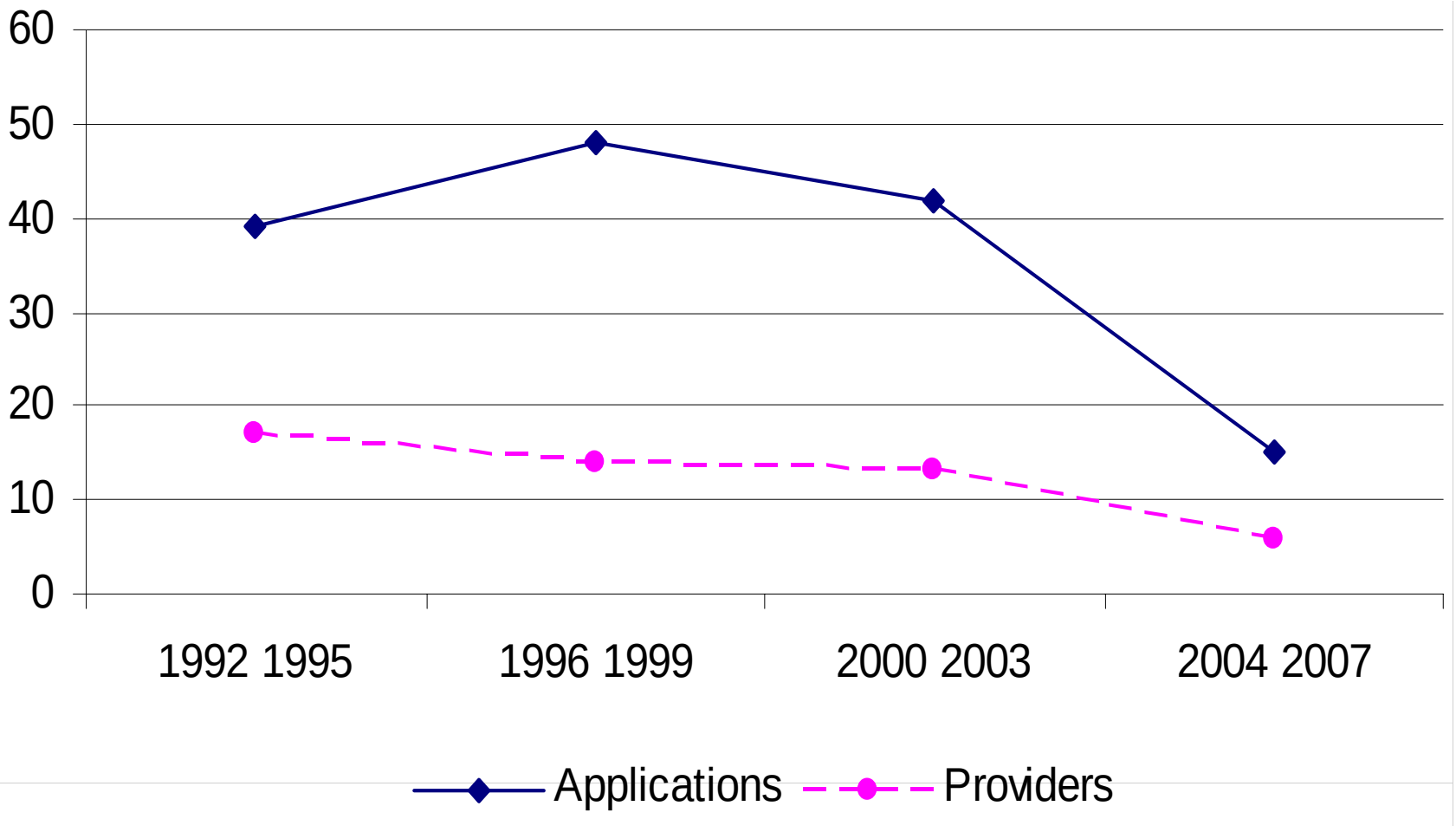

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Soybeans: Varieties Available in 2006

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Providers of seed		21	28

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Glyphosate Tolerant Soybean Breeding in North America

- **Transgenic technology for glyphosate tolerance is owner by Monsanto,**
- **Monsanto make this available to all/some breeders,**
- **Users of all glyphosate tolerance varieties must sign a technology use agreement (TUA) with Monsanto,**
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- **Breeder exemption cannot be guaranteed**
- **Farm saved exemption is not available**
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  - Plant Variety Patents: 1930
  - Utility patent: 1980
  - UPOV harmonized system: 1970
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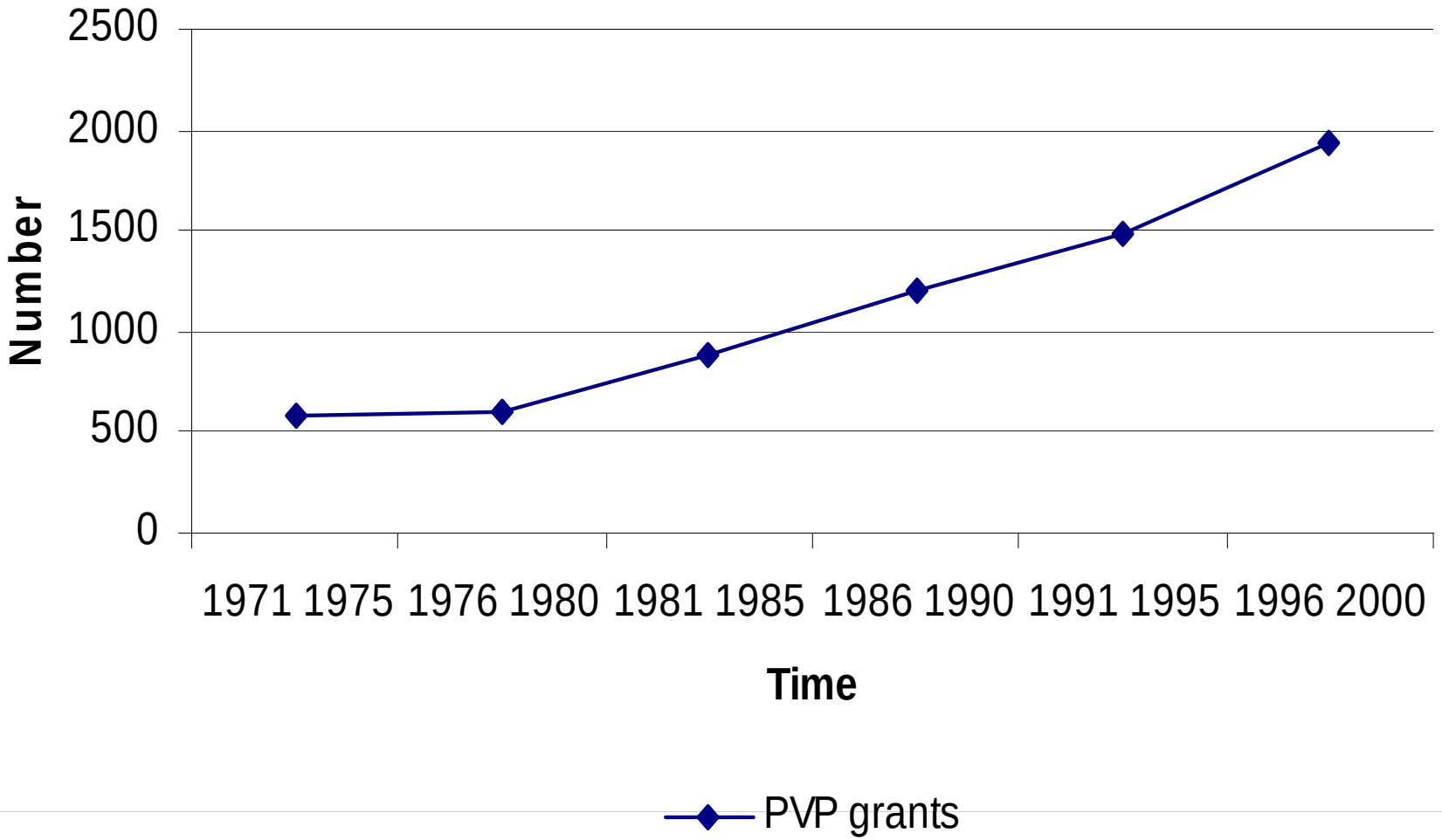
USA Plant Variety Patents Grants



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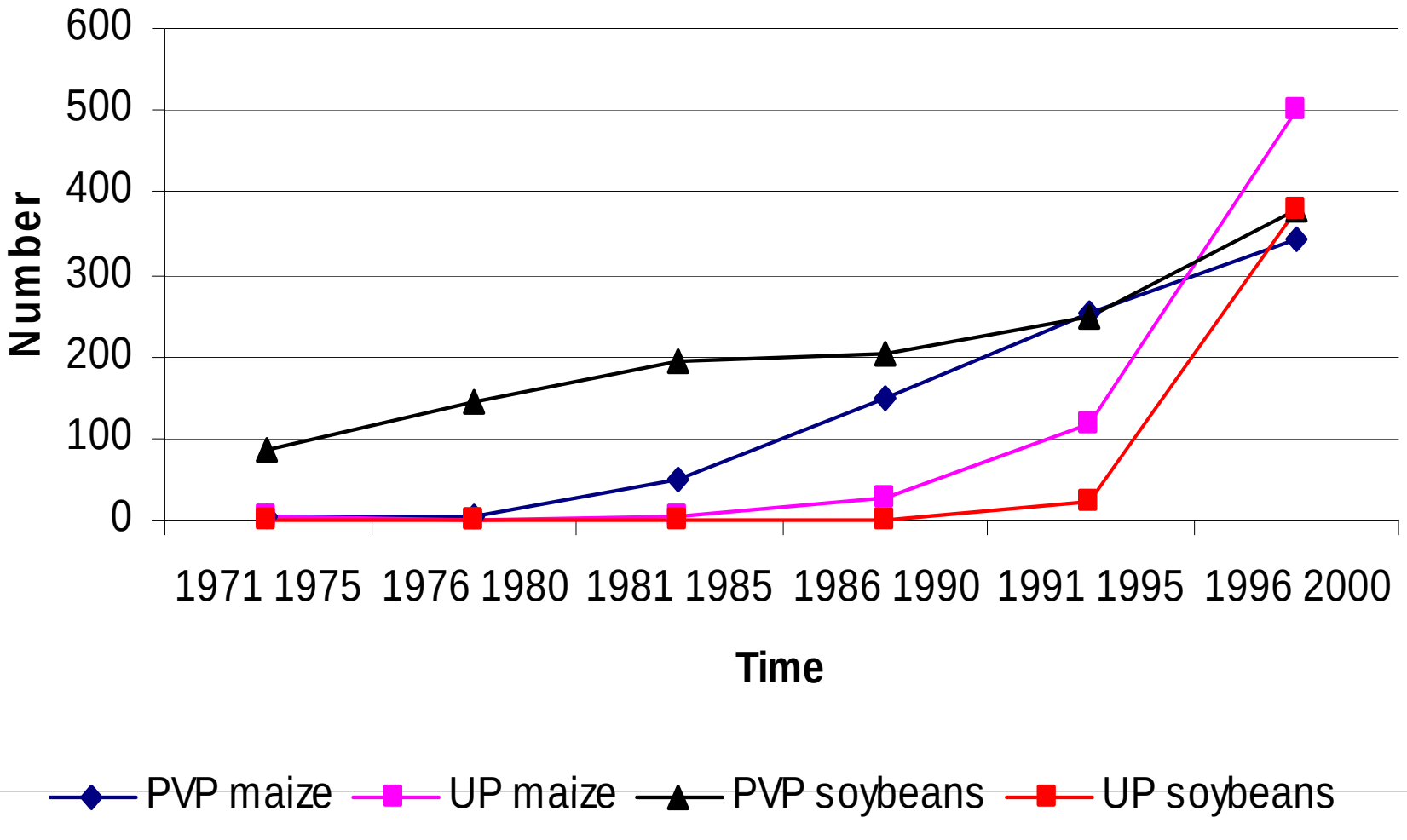
USA Plant Variety and Utility Patents Grants



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Patents for Plant Variety Conclusions

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- World Trade Organisation
  - TRIPS
  - Quarantine: apples and bananas
- Convention of Biodiversity
  - Germplasm access:
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  - Disclosure of source of germplasm in PBR application

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- Australian varieties will require different characteristics:
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  - Abiotic stresses (water, growing environment)
- Carbon trading:
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- Plant breeding has relied on public sector investment
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Intent of the Act

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- Inequitable benefit sharing: constraint to investment
- Use of contracts to circumvent breeder and farm saved seed exemptions

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- Limited available of top flight professionals

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Thank You

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