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# AUSTRALIAN AGRICULTURAL ECONOMICS SOCIETY AWARDS 1981

## MASTERS THESIS PRIZE

The prize was awarded to David Godden for a thesis entitled 'An Economic Evaluation of Property Rights for Plant Varieties with Special Reference to Plant Variety Rights in Australia', submitted to the Faculty of Economic Studies, University of New England, for the degree of Master of Economics.\*

### *Thesis Abstract*

Plant Variety Rights (PVR) legislation, which creates property rights in new commercial plant varieties, has been enacted in most industrialised countries. During the past decade, consideration has also been given to the adoption of PVR in Australia. By the encouragement of additional private investment into plant breeding, it is anticipated that PVR will improve the efficiency of plant breeding research.

Despite the extensive overseas adoption of PVR, there have been no economic evaluations of the benefits and costs of PVR enactment. In the absence of previous studies, attention was focused on evaluating the major issues which would have to be encompassed in an empirical investigation of the net economic effects of enacting PVR in Australia. Two broad themes were considered: the contributions of theoretical studies to providing a suitable framework for analysing adoption of PVR and the contributions of studies in applied economics.

In the review of theoretical studies, three issues were examined. First, the nature of PVR as a property right was reviewed in the context of the general economic function of property rights. It was shown that PVR extend opportunities for breeders to appropriate utility from new plant varieties, but that the degree to which these opportunities are extended depends on economic, legal and political structures. With regard to the latter, economic theories of regulation were shown to be useful in explaining activities of groups interested in PVR.

Second, PVR were examined within the context of allocative efficiency. Arguments about PVR contained in an IAC report were evaluated critically. It was concluded that *a priori* analysis of the allocative effects of adopting PVR based on Pareto welfare economics is not possible because the assumptions required for such an analysis are inappropriate.

Third, it was argued that evaluation of the effects of adopting PVR should be carried out in analysis which assumes an oligopolistic structure of plant breeding and seed multiplication. General implications of

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oligopolistic market structure for allocative efficiency and firms' business conduct were reviewed.

In the evaluation of applied economics to the PVR issue, a further three areas were examined. First, literature relating to technical change was reviewed, since one objective of adopting PVR is to accelerate technical change in agriculture through stimulating the development and use of new plant varieties. It was argued that the benefits of PVR would tend to be concentrated at the applied end of the plant breeding research spectrum, and that the appropriation of benefits from increased plant breeding by Australian farmers would partly depend upon the price at which new varieties were made available to them.

Second, the intellectual property right to which PVR are most similar are patents. As there has been extensive economic research into the effects of industrial patents, this literature was evaluated for its implications for plant breeding with PVR. It was shown that the drafting of PVR legislation enables PVR systems to avoid difficulties apparent in patent systems of defining material appropriate for the grant of an intellectual property right. In most other aspects, the PVR-patent analogy is strong, and controversy as to the desirability of patent systems in general, and the relevance of particular features of such systems, is relevant also to PVR.

Third, seeds and pharmaceutical drugs, and the industries that produce them, appear to have many features in common. In particular, PVR and pharmaceutical product patents are very similar. Economic studies of the pharmaceutical industry have implications for the structure of plant breeding and seed industries that may develop with PVR, and the operating characteristics of these industries.

Based on this assessment of PVR, an indication of the areas where PVR are likely to have major effects and of the research methods that would be necessary to conduct an empirical study of PVR, is offered. In addition, an *a priori* evaluation of many of the arguments in favour of, and against, PVR is provided.

## JOURNAL ARTICLE PRIZE

The award for the best article published in the *Australian Journal of Agricultural Economics* was awarded to John Quiggin for his article entitled 'Risk perception and risk aversion among Australian farmers' published in Volume 25(2), pp. 160-9.