

FUTURE OF AERIAL AGRICULTURE FOR GRASSLANDS:

AERIAL AGRICULTURE AND THE ENVIRONMENT - - - THE CONSERVATION CASE.

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Abstract: Aircraft have been instrumental in developing the pastoral and cropping industries in Australia for application of chemical treatments and in spreading seed and fertilizer. However, aerial methods may pose a greater risk to people, livestock and the environment by mis-application than any other type of operation. There have been numerous instances where aerial application has put people and property at risk. This paper examines some of the public's concerns with aerial operations, and suggests what might be the future of aerial agriculture in light of industry regulations and government legislation.

It is generally recognised that the application of pesticides and other agricultural chemicals such as fertilisers from the air has been instrumental in changing farming techniques. Aerial application, especially in Australia, has become an essential tool in the growing of crops and pastures - allowing for application of chemicals in places inaccessible to ground based machinery, or where crop damage would result from ground application.

However the downside of aerial application is that this technique has the potential, if uncontrolled, to pose a far greater risk to people or the environment from off-target drift than any other application method. Some may attempt to differentiate the effects of application of fertilisers from pesticides claiming that off-target application of fertilisers pose a minimal risk, as they are of low human toxicity potential. But one only has to see the eutrophic effect of phosphorous or nitrate on a water body to realise that, in general terms, there is no distinction in potential to cause harm.

It is this potential, and the fact that there have been demonstrable instances where mis-application has occurred, that has created the public perception that the risks involved with the aerial application of chemicals outweigh any benefits.

It is convenient to dismiss the concerns of the community as the fears of an ill-informed urban society that is divorced from the realities of agriculture. While society may be so labelled, their

widespread and focused concerns have ultimately led to politicians imposing tighter and more restrictive legislative controls.

The aerial application industry claim that they have been singled out unfairly as no other application technique carries with it any specific controls. Yet in every state in Australia there is specific legislation covering the type of aircraft, licencing of pilots, restricted areas and types of chemicals that can be applied by air. This preoccupation with control of aerial application will not go away as nothing significantly has been done by industry or governments to allay the community concerns.

It is naive to believe that the community can or will differentiate between the aerial application of pesticides and fertiliser and seed. The concern is the technique of aerial application.

There are a number of underlying causes of the public's poor perception of aerial spraying techniques:

(1) **The 'quality of life' right:** People have an inalienable right to breathe unpolluted air and drink clean water. Aerial application is perceived as violating that right as it distributes in an "uncontrolled" manner chemicals into the very air people breathe. The compounding effect that many of the materials applied by air are highly toxic only serves to heighten the fear in the general community.

(2) **The incidents that have occurred:** There have been numerous instances where, for a multitude of

reasons, aerial application has put people and property at risk. The community demands that any activity by one sector of the community must not put innocent third parties in jeopardy.

(3) **The image of aerial applicators:** Perhaps this is a hangover from the early "cropdusters" or barnstorming pilots of the twenties ... Whatever the problem stems from, the 1991 public image of applicators is poor and has not been helped by a few "red baron" pilots who have seen fit to play this role to the full. A supreme belief that they, and they alone, determine how and when to apply chemicals has had disastrous consequences which taint the whole industry.

(4) **Aerial industry attitude:** There was an attitude in the industry, which has thankfully vanished, that they were essential to agriculture and therefore could not be touched. There was little or no constructive effort to address early community concerns and even today some sectors of the industry believe that the pressure on the industry is nothing but a "greenie" push aided by antagonistic media.

(5) **The visual aspect of aerial application:** In the era of electronic media there are few farming "pictures" more exciting than to see an aeroplane applying chemical to a crop. Ground-based application methods aren't visually spectacular enough for television, so any story on adverse effects of agriculture is quite likely to have an aerial application shot even if this method of application was not used. The public readily identifies with these images. The high noise level of aircraft reinforces the strong visual image that has been formed in the community.

(6) **Urban/rural interface:** As towns have grown and diversified urban people have moved to country areas, with many having no connection with agriculture in either employment and outlook. They have little tolerance for the noise of agriculture generally and tend to see the aerial application of chemicals as offensive. Pressure from rural/urban people who seriously believe their quality of life is threatened by aerial application, is leading to buffer zone policies and draconian legislation.

The community has a right to voice their concerns for acceptable standards and to question activities that may violate these rights. Perhaps many of these issues could have been tackled by the communication process however the aerial applicators, the users of the technique and other involved parties failed to address the fears and concerns of the community. Perception has as much force as fact in the political arena, and by allowing those concerns to fester, increasingly strict legislation, with regard to aerial application as a consequence of community pressure, will be enacted. Industry will have to adapt to the increased controls or the technique of aerial application will be lost to the community.

NEW AERIAL REGULATIONS.

This is not just speculation. While not "banned" outright the controls placed on aerial application of all substances in England have favoured the use of alternate techniques. The main causes of these restrictions have been the highly visible evidence of nitrate pollution of water bodies through offtarget application. There is great concern throughout Europe with respect to the excessive use of fertilisers and their effect on the environment. As aircraft were the main vehicle for distribution it is understandable that penalties were introduced. The aerial application industry in America is under continuing scrutiny. In California, for example, regulations are so restrictive that aerial application almost requires an Environmental Impact Statement before each application proceeds and then only with follow up evaluation. The multitude of controls have led to aerial application being considered one of the less viable means of applying chemicals. While fertiliser application has been exempt from many of the regulations, the rules that do apply are much more strict than those applying in Australia.

The extent of public pressure in Australia can be demonstrated by the evidence presented to the recent Senate Select Committee inquiring into Agricultural and Veterinary Chemicals. The Committee received over 280 submissions and heard evidence from all sectors of the community in every state over an eighteen month period. Their report was issued in July, 1990. Fertilisers were not classified under the terms of reference as an agricultural chemical and therefore there were no specific references to aerial seeding or fertiliser application in the report. However, much of the criticisms emanating from the report in the practical sense would adversely affect the viability of an industry based solely on seeding and fertilizer operations. Of the forty five recommendations contained in the report only one relating to aerial application had any specific bite to it, viz.,

"Recommendation 39: that the Australian Agricultural and Veterinary Chemicals Council consider every aspect of the social and environmental impact of aerial spraying. The Council, in consultation with the Civil Aviation Authority, representatives of the aerial agricultural industry and other interested parties, should develop a uniform, national approach to the regulation of aerial spraying of agricultural chemicals. The Committee further recommends that, if its recommendation in relation to aerial spraying is not implemented fully, calls for the banning or phasing out of aerial spraying of agricultural chemicals should be supported (paragraphs 16.48 and 16.49)".

This recommendation received wide media coverage at a national level. It reinforced the perception that aerial spraying (note: "agricultural chemicals" was omitted in the reports) does impact directly

and indirectly on community health and the environment. Obviously the Australian community believes that the risks of aerial application far outweigh the benefits, and this feeling now has the backing of an authoritative Senate Committee.

Already, at the State government level, there are indications that impending legislation will apply further stringent controls to the use of this technique. Queensland has introduced in draft form legislation that "prohibits drift", requires notification of neighbours, and provides for the gazettal of hazardous situations where aircraft operations of any agricultural pursuit could be banned. The impending release of the Environmental Protection Agency legislation in N.S.W. with a significant strengthening of the Clean Waters and Clean Air Act could be used to prevent "any emission from aircraft". South Australia has draft Clean Air legislation which, if applied to the letter, would make it an offence to spray water from aircraft.

AN INDUSTRY'S FAILURE TO ACT

What has the aerial application industry done in the face of this threat of banning? Demonstrably nothing! The industry has an inherent problem; it is not cohesive, having developed basically from owner/operator beginnings. While today most of the industry is changing its structure and improving its performance, there are still several small operators mixed with fiercely independent corporate operations with several planes.

While the Aerial Agricultural Association of Australia is an association of credibility it has yet to focus the minds of its members and others in the industry to address this imminent threat. There appears to be a belief in some sections of the aerial application industry that the groups they service (such as the cotton industry, banana growers, broadacre farmers)

will not allow their demise. Yet, it is up to the operators themselves: the industry must defend itself from within. If it cannot do so then it is not worth supporting.

Hard though it may be, alternate methods of application must be developed for cropland. Fertilizer and chemicals may be applied in irrigation water and sophisticated highspeed groundrig coupled with tracklines have been developed as an alternative to aerial spraying. It may well be that pasture establishment by air may survive. However, it is probable that where alternate management practices cannot be employed the decision not to use that country may have to be made.

Is there a future for aerial agriculture? The extremist conservation groups would say no. The moderate groups will insist on legislation that will offer "control". That legislation may well destroy the viability of an industry as it has done overseas. It matters not whether the cause was "agricultural chemical"; it will be the technique itself that will be legislated against. Using the overseas demise of aerial technique as an example, would indicate that the industry's future in Australia is bleak. There is no sign that the concern in the community is abating. In fact with increased "environmental awareness" about the use of agricultural chemicals, it is extremely doubtful whether the industry could change its performance and, therefore, its image in the limited time period left. Perhaps it is time to rethink our agricultural crop protection systems.

REFERENCES

- Colston, M. (Chairman) (1990). "Report of the Senate Select Committee on Agricultural and Veterinary Chemicals in Australia", *Commonwealth of Australia*, pp 293.