

Key recommendations of the first Cotton Environmental Audit

Following are some of the key recommendations of the first Environmental Audit released in 1991. It will be interesting to see how far we have progressed when the second audit is completed next year.

PESTICIDE USE

1. Poor performers among aerial operators and growers should be reformed or removed from the industry. This should be primarily achieved by industry (Cotton Australia, AAAA and AVCA) education programs and peer pressure.

2. AAAA should continue to exert pressure on all operators to join and become accredited.

3. Cotton Australia (nee ACF) should encourage its members to use AAAA accredited aerial operators.

4. Regulatory authorities should maintain tighter control of pesticide use as a disincentive against poor standards.

5. More monitoring of spray drift in populated areas is required. Air monitoring should be introduced in a small number of key sites (for example Wee Waa, Moree). Methods used should be comparable with those currently used in Emerald.

6. Tank mixing of several chemicals to be simultaneously applied should not be carried out without firm guidance on the compatibility of the products concerned. Commonly required mixtures should be identified and research conducted to confirm their compatibility.

7. Chemical handlers should be provided with and use proper protective equipment including full overalls.

8. Field workers such as bug checkers and chippers should also wear appropriate clothing, including long trousers and shirt sleeves.

9. Employers should provide laundry facilities at the place of work for the washing of pesticide contaminated work clothes.

10. Aerial spraying has many advantages over boom spraying. These include: fewer operators required and thus less occupational exposure to pesticides; easier control by regulatory authorities and less soil compaction.

11. New farms should be designed with aerial spraying in mind so that potential spray drift problems are avoided.

12. Rural communities surrounded by cotton farms should plant tree lines as biological buffers. Species should be chosen to maximise effectiveness as barriers to spray drift.

13. Cotton farmers should plant tree lines around their own properties (with due allowance for the safety of crop spraying aircraft) to limit the drift of spray off the property.

14. Planning authorities should exert controls to ensure new housing is sensibly

zoned in relation to existing cotton farms to avoid potential spray drift problems. Zoning of new cotton farms should similarly take account of existing residential development.

15. Doctors/health workers should be

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encouraged to maintain long term databases on incidence of cancers, asthma and allergies in cotton growing areas.

16. Chemical companies should provide information on the minimum re-entry periods which should be observed after crops are sprayed for all products.

17. Pesticides likely to produce strong, drifting odours should be avoided in areas where their use could lead to a public nuisance.

18. Research into integrated pest management techniques should be continued and encouraged. This can help to avoid problems of pesticide resistance and contribute to a reduction in the quantities of pesticides used.

19. Continued observance of the pyrethroid strategy is essential to continue to avoid pesticide resistance undermining current ability to control pests with available products.

20. Research into all aspects of pesticide resistance should be maintained and encouraged.

21. Aerial operators should be encouraged to purchase turbine engine aircraft when current piston-engine aircraft are due for replacement. In areas where noise complaints are frequent, the immediate replacement of piston-engine aircraft should be considered.

22. All pesticides and herbicides should be stored under lock and key and preferably under cover.

23. Pesticide storages should have adequate storage space for the quantities of chemical to be kept, have proper bunding, segregation of different products and security controls.

24. Chemical storage and handling needs improving. Cotton Australia, Avcare and AAAA should have a strong education policy to ensure growers and aerial operators are aware of the correct procedures.

25. Proper facilities should be provided for the disposal of pesticide containers. Cotton Australia should lobby government to achieve this.

26. The industry as a whole including chemical manufacturers, aerial operators and growers should work together to increase the proportion of chemicals applied in bulk or in re-useable containers.

27. The industry as a whole should also seek ways to increase the proportion of steel drums which are recycled instead of being buried.

28. The use of empty pesticide containers for secondary purposes such as trash cans should be completely avoided.



29. Where burial of pesticide containers on site is the only option, growers and aerial operators should ensure that tips are managed to the highest possible standard. Detailed records should be kept of the location and content of pits.

30. Evaporation pits should only be dug on sites where adequate testing has been done.

31. Evaporation pits should be securely fenced and signed to prevent people or animals accidentally entering them.

LAND USE

32. Cotton Australia should develop an environmental policy or code of good practice on land acquisition. This should not only detail where new cotton farming developments should be encouraged (and where they should not), but should also cover aspects such as the layout and design of newly established cotton farms and their proximity to residential areas and sensitive wildlife habitats.

33. Land use changes involving the cotton industry should be documented in detail. A database should be established to include details of previous land uses (and, in cases where land ceases to be used for cotton, subsequent land uses), details of adjacent land uses and information on natural/semi-natural habitats present on the land before and after the change.

34. Growers who wish to develop large areas for growing cotton where this could give rise to significant environmental impacts should be encouraged to undertake an independent environmental assessment of the proposals.

35. Where it is compatible with their overall farming operations, growers should be encouraged to retain areas of natural vegetation on their farms to encourage wildlife.

36. Growers should be encouraged to incorporate features to promote wildlife in water storage lagoons in so far as this is

compatible with the primary function of the lagoons.

37. The practice of good agricultural methods to minimise problems of soil compaction and erosion should be encouraged.

38. Landcare groups should be promoted. This is an effective way of disseminating information, putting pressure on poor performers and liaising with the local community. Both the number and status of cotton farming Landcare groups should be increased and their activities promoted.

WATER USE

39. The water requirements of important wetlands should be recognised by the water authorities in their allocation of water quotas.

40. Research into methods of cotton growing which could reduce water requirements (for example, use of short season varieties; improved soil management) should be encouraged.

41. The rate of depletion of ground water reserves should be monitored.

42. All tailwater should be recycled. Both peer pressure amongst farmers and government inspections should be used to encourage the worst performers to improve their performance.

43. At least the first flush of storm water runoff should also be withheld and the water storage capacity on cotton farms should include allowance for this.

44. Studies should be conducted to provide realistic guidelines as to how to calculate the size of this first flush. The cotton industry should commission appropriate studies.

45. In areas such as Emerald, where the entire irrigation scheme was set up without provision for tailwater recycling, growers should set and work towards a realistic date for complete reticulation of tailwaters.

46. Research into the impact of pesticide contamination on population levels of fish

and other aquatic wildlife would be useful.

47. Fish kill incidents should be promptly investigated by the responsible authorities to a set of specific criteria. This will provide a disincentive against illicit tailwater releases and help identify any other causes of catastrophic mortality.

48. Ground water supplies should be monitored for signs of contamination by pesticides or nitrate.

49. The use of billabongs for water storage should be discouraged.

COTTON PROCESSING

50. Dust abatement systems (that is fabric filters) should be fitted to all ginning sites. Obscuration meters should be fitted to the fabric filter outlets with visual and audible alarms and recording charts. The system will require a regular maintenance schedule. Monitoring records should be kept for at least 30 years.

51. Annual lung function tests should be carried out on all permanent staff. The records should be kept by the company for at least 30 years.

52. Plant layout should be such that air entering the gin building should be from a clean area and suction points/doors/exit ports should be located near areas of high dust levels. Also layout should allow employees to proceed from the outside to rest and lunch rooms without having to traverse the ginning area.

53. Floors and equipment surfaces should be vacuumed down frequently during a shift; use of compressed air for clearing dust from surfaces should be discontinued.



54. Doors of enclosed console room should be kept shut.

55. All indoor personnel should use respiratory protection (class L disposable masks). Note that the masks offer adequate protection only if used correctly.

56. A program of employee education should be undertaken to emphasise the risks of dust inhalation and to demonstrate the best practicable means for reducing dust levels and for avoiding excessive particle inhalation.

57. Employee exposure to noise in gins and seed processing plant should be reduced.

58. Regular monitoring of noise levels should be undertaken.

59. Annual hearing tests should be carried out on all permanent staff.

60. In-house health and safety audits

should be undertaken at all cotton processing facilities. This should include a review of previous accidents and of current safety procedures.

61. Accident books should be maintained at all processing facilities. Information such as the nature of injury, part of body involved, where accident occurred, date, time, person to whom accident was reported, lost time, activity undertaken when accident occurred, other people or vehicles involved etc. should be recorded.

62. More appropriate methods of reducing road dust at gins such as damping down with water or laying down a permanent road surface should be considered. The spreading of waste oil for this purpose should cease.

63. All solid waste should be sent to a competent waste disposal contractor who is licensed to accept and/or treat the specified waste stream. Waste treatment and disposal must be undertaken in a controlled manner.

64. The uncontrolled burning of trash should be avoided.

Seed treatment

(Note that CSD had the only delinting plant in Australia at the time)

65. A routine monitoring program for HCl, ammonia and ammonium chloride should be implemented at the seed processing plant. Future monitoring should assess personal exposure limits (short and long term) and should compare these to existing statutory limits and international guidelines.

66. The 'Sentinel' waste treatment system for the handling of pesticide waste generated by seed treatment should be regularly maintained and the filters replaced to ensure satisfactory performance.

67. The water in the evaporation pond receiving effluent from the treatment plant should be subjected to occasional monitoring to verify that high levels of pesticide residues are not building up. Proper fencing and signing of the evaporation pond is also required.

68. The on-site burial of sludge produced by the system is an undesirable practice although permissible under SPCC guidelines. Ideally this waste, along with spent filters, should be disposed of by a competent licensed contractor.

69. Where on-site disposal of sludge is unavoidable, investigations should be undertaken to ensure the suitability of the disposal site and the location and quantities of buried sludge should be recorded. 🌱