



Community Response to: EPA NSW

“Pilot program to identify whether target pesticides are harming non target vegetation”

Collated responses from members to proposed program of works by NSW EPA Regulatory Operations

39 respondents by discussion group and written reply

Reader Notes:

These replies are linked to the document itself and so should be read side by side for comparison. (not very suitable for computer viewing- it is suggested this document is printed out in full. The EPA proposal is attached at the bottom of this commentary)

The replies are listed under the headings used in the EPA proposal and are in *italics*.

Background Notes:

The EPA has verbally promised since 2018 that a program to address Defoliation Damage issues in Cotton areas was being developed. From July 2020 the EPA has stated in writing that a program was being developed. Our group has requested numerous times in writing and verbally with EPA management for the details and science behind any proposal. No information has been provided until the attached document was received.

There has been no community consultation on the development of any science behind the proposal with the development process not clear.

What is happening?

The EPA propose a Summer program when the relevant reports of damage have been made in the Autumn and Spring.

The EPA have only listed the Narromine and Warren areas (even though the map indicates a site at Gilgandra). Despite notifications that any program should be done in areas of observed damage that include most Cotton growing areas they restricted the proposal to a narrow area. No basis for that decision is provided.

Given that there have been no vegetation assessments of observed damage from last year, despite multiple requests for that to occur, there has been no justifying basis provided by the EPA on which to decide on siting of any study. It is lacking the foundation for the decision made to the restricted proposal. No explanation of why the area/s were chosen.

Why are we doing this?

The EPA has received reports prior to 2018 and a number of our members have direct knowledge of those contacts.

The EPA has not “investigated all reports” to the pollution line if the definition of ‘investigated’ is to observe, assess or collect evidence of Defoliation Damage.

Adequate, or in many cases, any response from the EPA in relation to pollution notifications from the community has not been the experience of many of the members of the group.

It is noted that the claim of investigation is only made in relation to the Environment Line- not all notifications, which include email, text and phone notifications.

The claim of “.....to date has not found enough evidence.....” is very problematic as ample evidence has been provided to the EPA (including photo, video, independent expert assessments and laboratory analysis results). It has been the lack of evidence collection by the EPA when damage symptoms have been present that continues to allow a continuing claim of ‘little or no evidence found’.

Verbally and in written communications the EPA has maintained that it relies almost solely on chemical analysis of samples collected. The main evidence always present when notifications are made is that of physical vegetation damage and there has been no apparent attempt by the EPA toward collecting, collating or analysis of that evidence.

It may be true that the EPA as an organisation has “not found” enough evidence and that may remain true while an organizational bias exists to concentrate only on the narrow evidence parameter of chemical analysis of samples. To date field visits to affected regions have involved investigators lacking competencies in vegetation and agrichemical damage assessment so there is a low likelihood of adequate evidentiary collection.

It says that the pilot program will “target the use of defoliants on Cotton Crops through the Summer months”

Defoliants are not used in the Summer- they would kill the Cotton.

Cotton Defoliant Chemicals are used in the Autumn period to kill the plants.

The proposal is targeting something that doesn't happen.

All respondents to this feedback expressed levels of amazement, frustration and in some cases- anger at the level of ignorance contained in that statement of the program target.

The target is wrong and it will miss its mark.

The target is wrong even though EPA staff have repeatedly maintained that there had been considerable work on drafting of the proposal.

It would be hard to see how any scientific justification can be made for targeting the proposed time period for the stated purpose.

Which defoliants will we be looking for?

The EPA have included some cut and paste basic information about 3 chemicals included in this section.

There is no substantive information provided for any reader to render any assistance to the EPA in reporting damage due to any of the chemicals listed.

If the proposal were sincerely about attempting to “build and understanding of what is occurring” then any information on chemicals would be of what vegetation damage symptoms to report and what those symptoms looked like in the field.

No mentions of toxicity and persistence were included when those factors are the most pertinent to any community exposures. Consequent risk is a genuine concern for any potential exposures being explored by a ‘pilot program’.

Our members would expect that all herbicides would be added to the analytical suite for any study, otherwise any use of illegal synthetic chemicals during the period would not be detected.

No basis for restricting the choices down to the limited list provided. Equipment and protocols suitable for the detection of non-active ingredients present in commercial applications would also be necessary for indications of spray dissemination.

With results from the EPA finding that drift of substances such as Tebuconazole have occurred as recently as 2020 why would the testing and analysing not include the full range of chemicals registered for application on Cotton during the study period?

What are we not doing?

“The program is not designed to identify and regulate individuals using pesticides.” For any community support to be forthcoming for a program, assurances would have to include that evidence collected would be used as part of any future actions by the EPA. It would not be acceptable to the members (or one would presume the affected communities) that evidence of any contravention of laws or regulations would not be used.

While any program may properly not be designed to target individuals if the evidence identifies individuals behaving in ways that are likely to cause harm then appropriate action would be expected. Any lack of clarity from evidence use by the EPA on this issue would be cause to reject participation or acceptance of any proposal.

The program will only “attempt to identify whether the target pesticides are being deposited.....”. Given that the target is clearly incorrect (see above comments) then there would seem to be little chance of identification.

“If sample results lead the EPA to suspect misuse.....” For the proposal to have any merit then vegetation damage assessments will need to trigger thorough investigations- not just the sample results alone. Only using ‘sample results’ as the guiding initiator of investigative action continues to perpetuate the organizational failure to adequately investigate notifications of Defoliation Damage that has led to so many attempts by the community and individuals for effective action by the EPA.

There is no detail as to how the EPA would “....detects any concerns in regard to potential impacts on human health....” A very vague statement of intent with no detail or background to show that an attempt would be made to engage with the community in order to ‘detect’ concerns or how the EPA would collaborate with other health agencies.

Where are we sampling?

No background is provided by the EPA at all on the decision process at all other than listing some factors. The sites are located in only one small region and do not have the appearance of being a representative sample of that area. The failure to include a representative sampling of a number of areas that have been reported to the EPA as experiencing damage would leave any findings deliberately limited in scope. Also, shouldn't there be a ‘control’ site?

Members from areas affected but not included are not supportive of any proposal that does not reflect a scientific approach toward areas and sites chosen.

For any acceptance of the validity of the choice of sites a justifiable set of scientific rationales would need to be provided that included assessments of previous damage areas. The failure to conduct any substantive prior assessments of damage extent from community notifications does not provide a basis for program scope.

When are we sampling?

There is not enough detail provided to properly comment on this section as all detail related to equipment, protocols, testing levels and suitability has not been provided.

There is no justification as to why the timing and the intervals have been selected.

How will we observe vegetation condition?

An outsourced, observational table suggested with monitoring of trees only.

No justification of why only higher canopy species are included while shrubs, sub-shrubs and ground level species are not.

No indication as to the size of areas to be assessed by this method at each proposed 'site' position. No indication as to the time allocation for those assessments (this is critical in vegetation surveys due to the observational skills involved).

Site selection for vegetation assessment is fundamentally different than siting equipment for the interception and detection of pesticide spray drift. If it is proposed that they are to be conducted at the same positions in the landscape then both are fundamentally compromised in the achievement of scientifically valid results.

How will we collect samples?

It is not clear if the vegetation samples will be collected by staff competent in the recognition of Defoliation Damage to vegetation.

The complete protocols showing how the 'bulk deposition' samples and "leaf" samples would have to be disclosed for any acceptance of the validity of the results. Lacking essential details such as to what leaves-from where at what height etc, mean that the proposal is very obscure on the main thrust of the proposed activities.

The statement "If elevated levels of pesticides are detected, officers will report the incident and make the information available for the cause to be investigated." This sentence has provoked the most comment from members. Point by point: on "elevated levels"- what are those? What standard is used to judge 'elevated'? Why would trace detections not be important to demonstrating deposition? Shouldn't it just be presence or absence of pesticide based on detection limits? On "officers will report the incident"- who will they report it to? Will they report it to the community that has been exposed? If not- why not? On "make the information available..." – if the proposal isn't about making real time information available to community members if detections (at any level occur- including at trace levels) then it will be failing to inform the public of risk factors pertinent to them.

The referral to harm being suspected but misuse not found (by this it is taken that the EPA has chosen not to pursue action against a party) that they will refer to the APVMA is good but there is no reference as to what actions or future plans will be made by the EPA to prevent further harm. Any proposal would have to indicate responses to the findings by the EPA for future actions in relation to the data collected.

It indicates that the samples may be used by a variety of departments and authorities. The integrity of that information including rights to privacy and how the data would be shared and used is not at all disclosed or detailed. Implications for individuals or groups associating with the proposal are unclear if the necessary information protocols to protect them are not comprehensively addressed and agreed to.

What will happen at the end of the program?

Some further detail would be required in that the use of the word 'detections' means that the level of chemical traces meeting that description would have to be disclosed by the EPA and that it had a scientifically rigorous justification for those data points. 'Testing' and 'Detection' aren't concrete as concepts. They are determined by the HOW it is conducted and the lack of scientific depth that this proposal displays does not provide the confidence that any community group could support.

The provision of a summary report is supported but only if there is sufficient oversight by community and independent scientific advice to verify the findings. Our group reserves the right to provide a dissenting report to any final report if we are unsatisfied with procedural arrangements.

Group Conclusion:

The group will reserve the right to issue a dissenting report if the proposal proceeds as it is presented in the current documentation or identifiable shortcomings in the scientific basis and conduct are apparent in any amended proposal.

If collected data is withheld from public and professional scrutiny then the proposal will be considered to be compromised. Broad peer review, that includes the affected communities, of the conduct, data and conclusions of the proposal and any subsequent publications by the EPA about the proposed program, will be necessary for any validation of the results or conclusions.

The proposal is not supported or endorsed by the membership of the group as the program has been conceived with a lack of scientific basis, without the adequate community input and oversight by independent scientific experts necessary for confidence in the outcomes and with minimal detail on its operation.

Pilot program to identify whether target pesticides are harming non target vegetation

What is happening?

The EPA is undertaking a pilot program during Summer 2020-21 to detect deposition of defoliant on non-targeted flora in the Narromine and Warren Local Government Areas (LGAs).

Why are we doing this?

Since 2018, the EPA has received reports of pesticide overspray damaging vegetation in areas not specifically targeted by the applicators. The reports have mainly been about Peppercorn and Kurrajong trees and in various locations. The damage to trees has been reported to coincide with the agricultural application of defoliant for cotton harvest.

The EPA has investigated all reports made to the Environment Line, but to date has not found enough evidence of pesticide overspray or drift.

To start to build an understanding of what is occurring, this pilot program will target the use of defoliant on cotton crops through the summer months.

Which defoliant will we be looking for?

Diuron - is a substituted urea herbicide used to control a wide variety of annual and perennial broadleaf and grassy weeds, as well as defoliate cotton. It is used to control weeds and mosses on non-crop areas and among many agricultural crops such as fruit, cotton, sugar cane and legumes. Diuron works by inhibiting photosynthesis.

Thidiazuron - is a herbicide used to improve flowering on fruit trees and to defoliate cotton. The product was marketed by Aventis CropScience; later Bayer CropScience; as "Dropp".

Ethephon - is a plant growth regulator used to promote fruit ripening, abscission, flower induction, and other responses. Ethephon is registered for use on a number of food, feed and non-food crops, greenhouse nursery stock, and outdoor residential ornamental plants, but is used primarily on cotton.

What are we not doing?

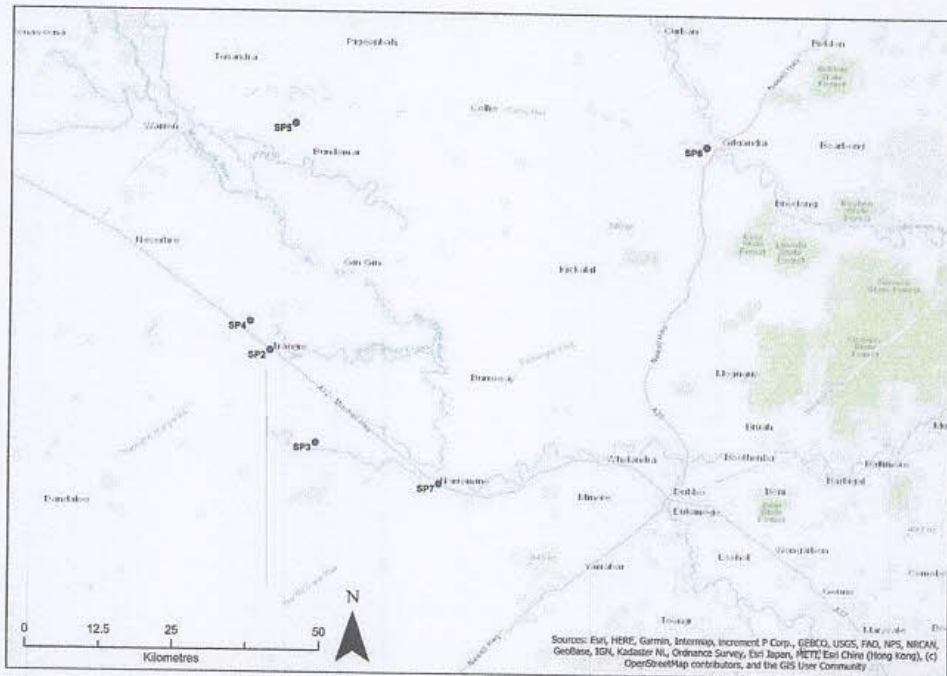
The program is not designed to identify and regulate individuals using pesticides. The program will attempt to identify whether the target pesticides are being deposited on and harming non-target vegetation.

If sample results lead the EPA to suspect misuse of the target pesticides has occurred, the EPA will separately investigate the suspected misuse under the Pesticides Act 1999. If the EPA suspects that harm has occurred due to other causes, the harm will be referred to the appropriate authority for investigation.

If the campaign detects any concerns in regard to potential impacts to human health from use of the target pesticides, then these details will be referred to NSW Health for their advice.

Where are we sampling?

Seven sites have been selected to cover a large area of the Macquarie valley. The sites encompass the areas that have been suggested to have had defoliation impacts through complaints or general observations by the community as well as control sites where damage has not been reported. The map below shows indicative sampling locations.



When are we sampling?

Samples will be taken at all sites once a week for 14 weeks from mid-January until mid-April 2021. Vegetation observations will be undertaken at all sites once a month from December 2020 to June 2021. This schedule may change depending on sampling results.

How will we observe vegetation condition?

Observations will be completed by ecologists from the Biodiversity and Conservation Division (B&CD) of the Department of Planning, Industry and Environment (DPIE) with knowledge of the regional area and vegetation types. The ecologists will provide descriptions and a rating of tree condition as outlined in the table below.

Tree condition index

CLASS	TREE CONDITION INDEX					
Class	1	2	3	4	5	6
Condition	Healthy	Minor	Moderate	Extensive	Severe	Dead
Canopy loss	0-5% tree canopy loss, and/or	5-25% tree canopy loss, and/or	25-50% tree canopy loss, and/or	50-75% tree canopy loss, and/or	>75% tree canopy loss, and/or	100% canopy leaf loss
Deformed / Spotted leaves	No deformed /spotted leaves, and/or	Deformed /spotted leaves rare, and/or	Deformed / spotted leaves common and found across most of tree canopy area, and/or	Deformed / spotted leaves occupy most of the outer canopy leaf coverage of tree, and/or	Most remaining leaves deformed / spotted, and/or	No leaves, bare limbs only.
Epicormic growth	No epicormic growth.	Very minor to nil epicormic growth compared to tree canopy.	Epicormic growth easily observed and makes up minor proportion of all leaf cover on tree.	Epicormic growth on most of trunk and large branches and makes up significant proportion of all leaf cover on tree.	Epicormic growth greater than remaining leaves in canopy.	No epicormic growth.

Notes: Symptoms of spray drift damage:

Defoliation: Tree canopy loss = proportion of leaf canopy missing but dead branches/branchlets are still present to give the proportion of canopy extent that should have been present.

Leaf damage: twisted or deformed leaves, curled edges downward, yellow spots on leaves, brown spots (dead patches) on leaves.

Epicormic growth: short stem and leaf growth on trunk and large branches rather than from 'normal' branches and branchlets on upper part of tree as canopy.

How will we collect samples?

At each of the sampling locations the EPA will be collecting both bulk deposition samples and leaf samples.

The EPA will monitor the pesticides detected in both the bulk deposition and leaf samples. If elevated levels of pesticides are detected, officers will report the incident and make the information available for the cause to be investigated.

If the EPA suspects that elevated levels of pesticides were caused by misuse and harm has occurred to non-target species, the suspected misuse will be investigated by EPA officers not associated with the pilot program.

If the EPA suspects that pesticides have harmed non-target species, but misuse has not occurred, the harm will be referred to the APVMA.

If the EPA suspects that non-target species have been harmed by factors other than pesticides, the harm will be referred to Department of Primary Industries (DPI) or the local Council.

The samples collected during this program may be used by DPIE and analysis results will be shared with other Government agencies such as DPI and APVMA.

For more information please contact the Environment Line on 131 555 or by email to info@epa.nsw.gov.au

What will happen at the end of the program?

The EPA will provide monthly updates that will show any detections of the defoliants. It will include when a positive detection of the defoliant has occurred, the analysis of leaf samples and plant condition, and if additional enquiries are underway due to detection within any samples.

At the end of the program, the EPA will produce a summary report of the results of the program and make it publicly available. The summary report will identify whether the results indicate further monitoring is worthwhile as part of a different program.



Image of bulk deposition sampling apparatus/EPA

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