

AUDIT REPORT – MAY 2014

FORMER GENETICALLY MODIFIED CANOLA TRIAL SITES

SUMMARY

- Field trials of genetically modified (GM) canola took place at 57 sites in Tasmania in the late 1990s and in 2000. The trials were conducted by Monsanto Australia and Aventis (now Bayer CropScience) under contracts with land owners. In 2001 the Tasmanian Government decided to pursue a GMO-free path for agriculture. This decision, combined with the persistence of GM canola seed in soil at the sites, created a management challenge.
- In 2001, arrangements for auditing former trial sites three times a year were agreed by Government and stakeholders. The audit process aimed to collect information about occurrence of volunteer canola plants to guide eradication, consistent with the new Government policy. The first audit of former GM canola sites occurred in spring 2001.
- When the *Genetically Modified Organisms Control Act 2004* commenced, permits were issued requiring each site to be managed in accordance with a specific site management plan. The aim of these plans is to eradicate GM canola, and to prevent spread off site. The audit process also became important for checking compliance with site management plans, and guiding the process for releasing sites from management under permit. This occurs when Government is satisfied GM canola has been eradicated from a site.
- Four sites have been released as monitoring evidence suggested that each could be considered clear of canola. These sites were signed off in 2006 and 2007. However, the DPIPWE still conducts periodic verification checks on these sites.
- The most recent audit occurred 26 May – 29 May 2014. Volunteer canola plants were found at 3 of the former trial sites.

1. BACKGROUND

History of audit program: In the late 1990s and in 2000, 57 field trials of genetically modified (GM) canola took place at a number of Tasmanian properties. The trials were conducted by Monsanto Australia and Aventis (now Bayer CropScience) under contracts with land owners. Subsequently, the Tasmanian Government's 2001 decision to pursue a GMO-free path for agriculture raised some issues. The likely persistence of GM canola seed in the soil meant GM plants could be expected to occur at these sites for several years, and potentially produce more seed that could be spread to other parts of the State.

In late 2001, the Department of Primary Industries, Water and Environment (now DPIPWE), the national Office of the Gene Technology Regulator (OGTR), and industry agreed an auditing process was required to manage the trial sites and minimise uncertainty to affected farmers. The first audit of all 57 sites occurred in October 2001. To date, 39 audits have been conducted.

Site Management Approach: During the development of the audit program, generic management principles for former GMO trial sites were developed. By late 2003 this was refined to a site-specific approach, underpinned by site management plans.

Each plan specifies crop choice, cultivation and herbicide strategies to promote germination of canola seed, followed by destruction of seedlings before maturity. The plans also incorporate containment and hygiene practices to prevent viable canola material from leaving the site.

2. AUDIT OBJECTIVES

Initially, the principal purpose of auditing former GM canola trial sites was to help guide eradication of volunteers. When the *Genetically Modified Organisms Control Act 2004* (the Act) commenced, the audit program acquired regulatory objectives as well.

In 2005 Government issued permits requiring each former trial site to be managed to achieve GM canola eradication. Therefore, the audit process also became important for checking compliance with site management plans. However, unexpected seasonal, market or other circumstances may mean the plans need to be changed from time to time. If a land-owner wishes to vary a site management plan, he/she may do so provided this is authorised by DPIPWE and the aim of canola seed bank draw-down is not unduly compromised.

The audit program also informs the process for releasing sites from management under permit. A decision to release sites from permit is made when DPIPWE is satisfied that eradication of GM canola has been achieved. In 2006, three sites were signed off as GM canola had not been observed for several years. To validate this status, two additional soil disturbances were undertaken, six months apart and under temperature and soil moisture conditions conducive to germination. Monthly audits after both disturbances did not detect any volunteers. Accordingly, the likelihood of residual seed remaining at those sites was considered very low and acceptable. In 2007 another site was released from permit.

3. AUDIT METHOD

DPIPWE coordinates and conducts former GM canola trial site audits. Officers inspect sites along transects placed at random intervals. Transects are distributed according to ability to observe canola volunteers in the crops or pasture growing at the time of audit. Officers also check 'hot spots' - areas where volunteers were identified in previous audits, and look for satellite populations. The presence or absence of canola and the physically similar wild turnip (*Brassica rapa*) is recorded, along with growth stage.

Audits usually take place in late January/February, May and October/November to coincide with periods during which volunteer canola plants are most likely to be detected, ie. after cultivation or other forms of ground working and when temperature and soil moisture are conducive to germination. The latter can have a direct influence on the audit schedule.

4. RESULTS

The most recent audit occurred from 26 – 29 May 2014. This was undertaken by DPIPWE staff and the compliance officer for Bayer CropScience. All 53 remaining sites were inspected.

Volunteer canola plants at various stages of development were found at three former trial sites (Table 1). This is about normal for this time of year.

Two of the sites where canola plants were detected during this audit were ones that had been a problem over summer and had been recently re-sown to crops and again turned up large numbers of plants. At the other site there had been some minor disturbance and plants were found there.

These and any more canola emerging should be controlled by the farmer's herbicide program and grazing but the sites will be regularly monitored.

Over half of the sites were under pasture. Some of these have not been disturbed for many years but all can be expected to have dormant canola seed in the soil that will not germinate until soil disturbance takes place.

During the period of this audit all sites had reasonable moisture levels. The sites that were being cropped had mostly been planted but a few were still in a state of fallow.

During audits, DPIPWE routinely survey nearby roadsides and other areas to ensure containment is being achieved. During this audit, no canola plants were found on roadsides.

Table 1. Volunteer Canola Detection and Site Clearance Status

Survey date	Total number of sites inspected	Canola not detected	Canola Detected (# flowering)	Cumulative number released from permit	Sites well progressed towards sign off
Apr 2001*	52	8	44 (5)	0	0
Oct 2001	57	29	28 (4)	0	0
Feb 2002	57	38	19 (7)	0	0
May 2002	57	34	23	0	0
Oct 2002	59 [#]	42	17 (1)	0	0
Jan 2003	57	44	13	0	0
Jun 2003	57	37	18	0	0
Oct 2003	57	35	22 (11)	0	0
Feb 2004	57	28	29 (1)	0	3
May 2004	56	28	28 (3)	1	3
Oct 2004	57	33	24(6)	1 [†]	3
May 2005	57	28	29 (2)	1	4
Oct/Nov 2005	19	14	5 (2)	1	Not assessed
Feb 2006	54	42	12 (2)	1	8
May 2006	56 [#]	41	15 (0)	1	8
Oct 2006	54	45	9 (4)	3	5
Jan/Feb 2007	54	42	12 (8)	3	5
May 2007	54	42	12 (11)	3	5
Oct 2007	54	41	13 (2)	3	5
Feb 2008	54 [^]	46	8 (6)	4	5
May 2008	53	43	10 (1)	4	5
Nov/Dec 2008	53	41	12 (4)	4	5
Feb/Mar 2009	53	43	10 (4)	4	5
May 2009	53	45	8 (0)	4	5
Nov 2009	53	40	13 (6)	4	5
March 2010	53	44	9 (4)	4	5
May 2010	53	34	19 (3)	4	2
Nov 2010	56 ⁺	46	10 (5)	4	2
Feb 2011	53	47	6 (2)	4	2
May 2011	53	46	7 (1)	4	2
Nov 2011	53	46	7 (4)	4	2
March 2012	53	44	9 (4)	4	2
May 2012	53	49	4 (2)	4	2
Nov 2012	53	49	4 (1)	4	2
March 2013	53	50	3 (3)	4	2
May 2013	53	49	4 (0)	4	2
Nov 2013	53	49	4 (4)	4	2
April 2014	53	37	16 (5)	4	2
May 2014	53	50	3 (0)	4	2

- * Five additional sites contained unidentified *Brassica* seedlings. It is likely that seedlings were canola.
- [#] Includes split sites counted separately
- [†] Tentative clearance, site will be re-inspected for reference.
- [^] One site that was released from permit in November 2008 was included in the audit.
- ⁺ Three sites that had been released from permit were included in the audit.

5. NEXT AUDIT

Inspection of all sites that remain under permit is scheduled for November 2014.