

## Senate Community Affairs Committee

### ANSWERS TO ESTIMATES QUESTIONS ON NOTICE

#### HEALTH PORTFOLIO

**Additional Estimates 2016 - 2017, 1 March 2017**

**Ref No:** SQ17-000428

**OUTCOME:** 5 - Regulation, Safety and Protection

**Topic:** Office of the Gene Technology Regulator

**Type of Question:** Written Question on Notice

**Senator:** Rice, Janet

**Question:**

From its recent Discussion Paper regarding its Technical Review of the Gene Technology Regulations 2001, it is apparent that the OGTR has made a decision not to include certain techniques in the four proposed options to be considered.

According to its Discussion Paper (p. 18) these include organisms that are genetically modified in a transient manner (e.g. using agro-infiltration) and techniques that theoretically result in 'null segregants' such as DuPont Pioneer's Seed Production Technology (SPT), reverse breeding (RB) and accelerated breeding (AB).

1. Are you aware that an Austrian Government review of these techniques concluded that:
  - a. Seed production technology can result in undetected secondary insertions of GM materials that may be retained during segregation; changes to the expression of the target genes which may be preserved in subsequent generations; and unintentional changes to the regulation of other genes.
  - b. "A thorough characterisation of the final products of RB and AB is needed to exclude the unexpected presence of GM modifications."
  - c. the final breeding plants produced be assessed for traits expected for the initial modifications such as early flowering and unintentional changes to the regulation of other genes. They argued that this requires a thorough assessment of the resulting plants, in case molecular evidence cannot exclude off-target effects.
  - d. "Maintainer lines for SPT need to be grown in containment, or risk assessed according to GM regulation... The absence of transgenic traits contained in the maintainer lines needs to be confirmed by appropriate monitoring."
  - e. in the case of agroinfiltration:
    - i. The absence of modifications needs to be demonstrated in cells used for future breeding;
    - ii. Changes in the expression of the target genes as well as other likely-affected non-target genes need to be evaluated;
    - iii. The unintended release of transgenic bacterial strains into the environment can result in adverse effects as they may survive in soil and transfer transgenes to other plants or other microorganisms. The release of transgenic plant viruses from agroinfected material is a concern for the same reasons;
    - iv. Any plant materials originating from agroinfiltration and agroinfection applications needs to be tested rigorously for the presence of transgenic bacterial and viral DNA.

**Answer:**

The Office of the Gene Technology Regulator (OGTR) is aware of the conclusions of the Environment Agency Austria's report *New Plant Breeding Techniques and Risks Associated with their Application*. A link to this report was included in the OGTR *Discussion paper: Options for regulating new technologies* which is available on the OGTR website.