The following information has been prepared to help answer any questions regarding the use 2,4-D herbicides in Australia.

2,4-D BACKGROUND

- Discovered in 1945, 2,4-D is a Group I herbicide and is one of the most widely used selective herbicides worldwide. It is registered for use in more than 100 countries.
- In Australia, it is the second most popular weed control option after glyphosate due to its cost effectiveness in controlling broadleaf weeds, both in-crop and fallow. The main uses of 2,4-D in Australia are for application in cereal crops, no/low till situations, fallow months, corn, rice, potatoes, and orchards to control broadleaf weeds.
- There are more than 60 different registrants in Australia permitted to sell 2,4-D. Each of these registrants will have a number of different formulations.

BENEFITS OF 2,4-D

From the 2,4-D Taskforce:

- 2,4-D provides a time-proven and low cost product for a wide variety of uses.
- 2,4-D products can be applied either in fallow or in certain registered crops as directed by the product label.
- The use of 2,4-D in the agricultural sector has allowed an increase of no-till farming practices, which reduces soil erosion and lowers the sector’s carbon footprint.
- 2,4-D safely controls weeds in turf grass, invasive species in aquatic and environmentally sensitive areas, maintains and protects right of ways, and guards infrastructure against structural damage caused by harmful vegetation.
- 2,4-D eliminates broadleaf weeds from pastures without damaging desirable grasses that livestock feed upon. It can also be used to protect native grass species against invasive weeds.
- A 1996 US Department of Agriculture study concluded that if 2,4-D were no longer available, the cost to growers and other users in terms of higher weed control expenses, and to consumers, in the form of higher food and fibre prices, would total $1.6 billion annually in the US alone.

2,4-D MANUFACTURING PROCESS

- Nufarm manufactures 2,4-D in plants in Laverton (Australia), Wyke (UK) and Linz (Austria).
- 2,4-D is produced in a multi stage synthesis process using chlorine, phenol and monochloroacetic acid. Nufarm’s 2,4-D ‘technical’ (also known as acid) is distributed for use in production of formulations globally, or formulated at the manufacturing site ready for use in local agriculture.
- Unlike some manufacturers, Nufarm ensures the purity of 2,4-D by distilling the chlorophenols used in the manufacturing process. At Laverton, the impurities from the distillation (including dioxins, which are considered harmful to humans and the environment) are destroyed in our plant by Plascon, a plasma arc technology which Nufarm developed jointly with the CSIRO.
2,4-D PRODUCTS MANUFACTURED BY NU Franklin

<table>
<thead>
<tr>
<th>NuFarm Australia Limited 2,4-D products</th>
<th>Crop Care Australasia 2,4-D products</th>
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<tr>
<td>Amicide Advance 700</td>
<td>2,4-D Amine 625</td>
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<td>Baton Low</td>
<td>Cobber 475</td>
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<td>Buttress (2,4-DB)</td>
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<tr>
<td>Trooper 75-D</td>
<td>Ester 800</td>
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**Discontinued products**

| Amicide 625 (superseded by Amicide Advance 700) |
| Amicide 625 Low (superseded by Baton Low)       |
| Baton                                           |
| Surpass 475 (superseded by Amicide Advance 700) |

*discontinued products – they have not been manufactured for more than 12 months. However, stock may still be available to growers through distribution partners.

2,4-D AND HUMAN HEALTH

From the 2,4-D Taskforce:

- After rigorous scientific study over several decades, not a single regulatory agency in the world mandated with protecting public health identifies 2,4-D as a human or animal carcinogen.

- Claims of 2,4-D being an endocrine disruptor is not supported by the scientific evidence. There is no evidence of cancer in animal tests, no evidence of reproductive toxicity, no evidence of birth defects, it does not metabolise in the body, it is rapidly excreted and it is not persistent in the environment.

2,4-D AND THE ENVIRONMENT

- One of the main issues with 2,4-D is the potential for spray drift. Crops such as cotton, grapes, tomato, oilseed crops and ornamentals are extremely sensitive to 2,4-D when coming into contact with the product due to unintentional drift.

- The APVMA has strict guidelines in place that restrict the use of 2,4-D in various geographical areas and/or time zones due to the higher risk for adverse off-target crop or environmental effects.

- NuFarm has invested significant research in 2,4-D and is working with government agencies and industry bodies such as the APVMA, GRDC and CRDC to reduce the incidence of spray drift.

- Further to this, NuFarm strongly promotes safe spraying practices when applying 2,4-D and all crop protection chemicals. Each year, we invest hundreds of thousands of dollars in Australia creating awareness of physical drift and how to reduce its incidence around sensitive areas through field trials, regional field days, updates and online tools such as Spraywise Decisions and CottonMap.
• Our significant investment in spray drift management and our work with other field specialists such as Graeme Tepper and the APVMA has helped develop the following guidelines to reduce the incidence of spray drift:
  1. Always use a COARSE spray quality or greater
  2. Always make sure the wind is blowing away from sensitive areas
  3. NEVER spray during a low-level temperature inversions – this happens most nights and strongest around sunrise
  4. Minimise boom height
  5. Continually monitor weather conditions before and during spraying

• Nufarm’s involvement with the CottonMap initiative has seen incidence of spray drift reduce from 10.6% of cotton crops damaged by spray drift in 2008/09 to 2.7% in 2012/13.

FOR MORE INFORMATION ON 2,4-D:

2,4-D Taskforce: www.24d.org

Croplife Australia website: www.croplifeaustralia.org.au/

APVMA website: apvma.gov.au/