



DICHLORPROP-P USE CONSIDERATIONS FOR 2016/2017

Background

During the 2016 export season some commercial samples showed Dichlorprop residues above the EU MRL for grapefruit and soft citrus. CGA and CRI have been investigating reasons for these exceedances with the view to avoid similar problems in 2017 and beyond. This Cutting Edge addresses a number of the converging reasons likely contributing to exceedances, and concludes with some recommendations for managing fruit size in 2017. The fact that Dichlorprop is generally applied from October in most parts of the country is well appreciated.

Residue Definitions and MRLs

Dichlorprop residue tolerances have recently been reviewed by the European Commission (EC), taking into consideration a Reasoned Opinion published by the European Food Safety Authority (EFSA).¹

This EFSA reasoned opinion recommended changes to the residue definition, and for oranges it recommended raising the existing MRL. On 18th November 2015 Regulation EC/2075/2015 was published whereby these EFSA recommendations were adopted by the EU and which became applicable from the 9th June 2016.

The current residue definition for Dichlorprop is: Sum of Dichlorprop (including Dichlorprop-P), its salts, esters and conjugates, expressed as Dichlorprop. It had been defined before as the sum of Dichlorprop (including Dichlorprop-P) and its conjugates, expressed as

Dichlorprop. The relevance here is that all forms of Dichlorprop are now measured and summed together which is then compared to the EU MRL for compliance purposes.

The EFSA reasoned opinion also indicated that the lowest limit of quantification (LOQ) for Dichlorprop was 0.02 mg/kg for citrus. Previously a 0.05 mg/kg level had been applied.

Hence the revised Dichlorprop EU MRLs were set in EC/2075/2015 at 0.02 mg/kg (= LOQ) for grapefruit, soft citrus and lemons², while for oranges it was increased to 0.3 mg/kg based on residue data submitted from residue trials.

Improved Analytical Methodology for analyzing residues

The revised EU MRLs and especially those at the LOQ, became relevant for EU analytical laboratories conducting residue monitoring on behalf of commercial clients and regulators. For regulatory purposes they are obliged to adopt methods that confirm the residue level at the appropriate MRL, in other words at 0.02 mg/kg, whereas it was previously only necessary to detect to a level of 0.05 mg/kg.

The pattern of the residue exceedances in 2016 suggests that the results did vary somewhat across EU laboratories, basically depending on whether an alkaline hydrolysis method was incorporated into the approach or not. CGA can provide a summary of where exceedances occurred, but from a risk management perspective it would be appropriate to assume laboratories across the EU will adopt methodology to quantify the total residues in line with the new residue definition and be able to detect to the lower level of 0.02 mg/kg.³

¹ In April 2015, EFSA submitted a reasoned opinion on the then existing MRLs in accordance with Article 12 of Regulation (EC) No 396/2005 for dichlorprop-P.

² Previously under EC/978/2011 the MRLs were 0.05 mg/kg for lemons, grapefruit and soft citrus, while for oranges it is set at 0.2 mg/kg. Dichlorprop-P (Corasil-P) may currently not be sprayed on lemons as this is not a registered use in South Africa.

³ On which methods are to be followed, feedback from the EC can be summarized as follows: Different laboratories do not use exactly the same analytical methods for pesticide residue analysis in food, but rather develop methods in-house based on agreed standards. This is because they may have different



Cross-contamination with 2,4-D

Growers were concerned that there might have been some cross-contamination with 2,4-D (given the chemical similarities between these two actives) leading to the higher Dichlorprop residues. Expert chemists have assured CGA that the two actives are clearly distinguishable analytically and there is practically no chance of 2,4-D appearing as Dichlorprop. Trials have also been done to confirm that there has been no contamination of the original 2,4-D product with Dichlorprop which may have led to Dichlorprop residues being detected. Results of these trials are expected in early October 2016. Should these results indicate cross-contamination may have occurred, CGA will advise the industry accordingly.

Dichlorprop-P usage considerations for the 2016/2017 season

Given the important role Dichlorprop-P plays in increasing fruit size, and especially under the recent drought conditions, growers will need to consider various strategies to manage fruit size for grapefruit and soft citrus. The higher MRL for oranges means use can continue there as normal. Those contemplating using Dichlorprop-P for grapefruit and soft citrus should take the following into account:

- **Dichlorprop dosage confirmation:** The supplier of Corasil-P (Dichlorprop) has approached the Registrar of Act 36 of 1946 to approve revised usage patterns that will appear on the Corasil-P label. Growers using Dichlorprop-P should note these changes to the label and particularly the new focus on ensuring the appropriate dosage of

analytical equipment as well as proprietary analytical know-how, and because new improved technologies are regularly becoming available and methods are being constantly updated. All official laboratories in the EU must follow the guidance document "Method Validation & Quality Control Procedures for Pesticide Residues Analysis in Food & Feed. This guidance document describes the method validation and analytical quality control requirements to support the

product per hectare. The supplier cannot categorically give assurances that residues will be non-detectable, as too many variables are in play.

- **Earlier use:** With the target of achieving non-detectable residue, growers may be inclined to try using the product earlier than normal. This would imply lower residues, but there is little empirical evidence available to CGA that confirms compliance to the lower MRL will be absolutely achieved. Such strategies should be discussed with the supplier of the product from both a fruit size perspective and a residue compliance perspective.
- **Wider use of the Alkaline hydrolysis analytical method:** It would be appropriate to factor into decision-making that more laboratories are likely to adopt the alkaline hydrolysis analytical method for testing for Dichlorprop-P, and therefore increase the likelihood of detecting residues above the 0.02 mg/kg for grapefruit and soft citrus in 2017, subject to the two points raised above.

Alternative solutions to Dichlorprop-P

Alternative chemical solutions to Dichlorprop-P may be considered also.

- **3,5,6 TPA (Maxim):** This is a registered alternative chemical option that is applicable for soft citrus. There have been cases of phytotoxicity problems recorded on grapefruit and 3,5,6 TPA has generally not been used on grapefruit for this reason. Growers should engage with the suppliers of these products for the

validity of data used for checking compliance with maximum residue limits, enforcement actions, or assessment of consumer exposure to pesticides in the EU. EU law also requires that each official laboratory is accredited to ISO/IEC 17025, and this accreditation inspection and certification covers analytical method development and implementation at each laboratory.



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timing of application for the optimal fruit size effects.

- **Horticultural practice options:** There are currently no well-regarded methods on how to increase fruit size through horticultural practices that can be applied at this stage of the production cycle. These solutions lead to either highly variable results or are too expensive and impractical to implement.

Future Dichlorprop-P EU MRLs for grapefruit, lemons and soft citrus types

In February 2016, an application was submitted to the Rapporteur member state to increase the MRLs for grapefruit, lemons and soft citrus. Typical EU MRL setting timelines suggest that at the very earliest MRLs will not be set until 2018, but it could take longer than that too. CGA and CRI will continue to support this application and request that these MRLs are considered urgent by the EU regulators. Progress on these MRLs will be communicated accordingly.

Concluding remarks

This Cutting Edge has aimed to summarize the main factors that may have led to recent cases of Dichlorprop exceedances of the EU MRL. These point to the fact that growers should seriously consider the use of Dichlorprop-P over the next few weeks, weighing up the benefits relative to the associated risk of having MRL non-conformances in the EU in 2017. The practices highlighted here may mitigate against these risks but close cooperation with the product suppliers is needed given the lack of empirical evidence to demonstrate how compliance might otherwise be achieved. Close cooperation with the relevant product suppliers is recommended.

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