



ADVICE SUMMARY

APPLICATION FOR REGISTRATION OF A CHEMICAL PRODUCT

Product name: MODDUS EVO YIELD & QUALITY ENHANCER
Applicant: SYNGENTA AUSTRALIA PTY LTD
Product number: 67695
Application number: 56654

Purpose of Application and Description of Use: Registration of a 250 g/L trinexapac-ethyl dispersible concentrate product to reduce lodging and enhance yields in wheat, barley and oats.

Active Constituent(s): TRINEXAPAC-ETHYL

Regulatory Decision:

To grant the application subject to the following conditions:

Standard Conditions of Registration/Approval

1. Containers must meet AgVet Code Regulation 18
2. Agricultural products must meet Active Constituents Quality Assurance Requirements
3. Label must contain a Date of Manufacture and Batch Number

For full conditions, refer to Standard Conditions for Applications on the APVMA website.

Non-Standard Conditions of Registration/Approval

1. A stewardship program must be implemented by the registrant that requires demonstrable acknowledgment of growers to the requirement to declare use of trinexapac-ethyl to buyers of grain from treated crops where required by contract or trade terms prior to supply of Moddus Evo Yield & Quality Enhancer.
2. The registrant must keep the following records:
 - a. The name and address of each user to which Moddus Evo Yield & Quality Enhancer is supplied;
 - b. the date of supply of each batch of Product; and
 - c. the quantity supplied.
3. Upon request, the Registrant must provide the records in clause 2 to the APVMA, including an APVMA Inspector.

ADVICE

Australian Government Department of Health and Ageing, Office of Chemical Safety (OCS)

In support of the registration of the proposed product, Moddus Evo Yield & Quality Enhancer, containing trinexapac-ethyl at 250 g/L, the OCS conducted a human health risk assessment from the data provided by the applicant. The proposed product is a dispersible concentrate (DC) formulation to be mixed with water and applied as a foliar spray *via* ground or aerial application methods. It is intended to enhance grain yield in wheat, barley and oats by reducing lodging, reducing excessive crop biomass and by increasing general crop development.

The data package included acute toxicology studies which were considered satisfactory for the assessment of the toxicology profile of, and the establishment of Safety Directions for the product and were relied on by the OCS in considering whether the proposed use of the product would not be an undue health hazard to humans.

The ADI of 0.01 mg/kg bw/d for trinexapac-ethyl was established in 1993 based on a NOEL of 1.4 mg/kg bw/d in a one year dietary study in dogs, for decreased testes and uterine weights at the next highest dose, and using a 100-fold safety factor to account for potential interspecies and intraspecies variation. No ARfD has been established for trinexapac-ethyl and no data was submitted to enable an ARfD to be set.

Trinexapac-ethyl is listed in Schedule 5 of the SUSMP, except when packed in a sealed water-soluble measure pack or in solid preparations containing 25 per cent or less of trinexapac-ethyl in packs of 50 g or less. As the product, Moddus Evo contains 250 g/L trinexapac-ethyl; the product is designated as a Schedule 5 poison. Based on the available toxicology profile, this classification is considered appropriate.

Based on the findings of the acute toxicological studies evaluated, the product was found to be of low acute oral, dermal and inhalational toxicity in rats. In rabbits, it was a moderate eye irritant, but not a skin irritant. The positive control study established that the product would have no skin sensitising properties in guinea pigs.

In consideration of the potential toxicological hazard, use pattern and likelihood of handler exposure, the following First Aid Instructions and Safety Directions and re-entry statement were recommended to appear on the label. The toxicology data and other information on the product provided and considered in this assessment justify the recommendations made and the Safety Directions established in the present evaluation.

OCS therefore concluded that there are no objections on human health grounds to the registration of the product Moddus Evo, containing 250 g/L of trinexapac-ethyl, when applied by groundboom or aerial methods. Furthermore, the proposed use of Moddus Evo by aerial and groundboom methods will not be an undue health hazard to humans according to the criteria stipulated in Section 14 of the *Ag/Vet Code Act of 1994*.

Data relied on to provide the advice

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
64706	S	Sieber, M.	Trinexapac-ethyl DC (A17600C) ? Acute Dermal Toxicity Study in Rats	5 October 2011	Toxicology	Acute dermal studies, product	Applicant	
64707	S	Sieber, M.	Trinexapac-ethyl DC (A17600C) ? Acute Eye Irritation Study in Rabbits	29 September 2011	Toxicology	Acute eye irritation studies, active	Applicant	
72566	S	Nagy, K.	Trinexapac-ethyl DC (A17600C) - Acute Inhalation Toxicity Study (Nose-Only) in the Rat	15 November 2012	Toxicology	Acute inhalation studies, active	Applicant	
64708	S	Sieber, M.	Trinexapac-ethyl DC (A17600C) ? Acute Oral Toxicity Study in Rats ? Up-and-Down Procedure	29 September 2011	Toxicology	Acute oral studies, product	Applicant	
64709	S	Sieber, M.	Trinexapac-ethyl DC (A17600C) ? Acute Dermal Irritation Study in Rabbits	29 September 2011	Toxicology	Acute skin irritation studies, product	Applicant	
64710	S	Arcelin, G.	Trinexapac-ethyl DC (A17600C) ? Contact Hypersensitivity in Albino Guinea Pigs, Buehler Test (9-Induction)	24 October 2011	Toxicology	Acute skin sensitisation studies, product	Applicant	
72567	S	Lorez, C.	Statement Number of Challenge Concentrations Within Guinea Pig Skin Sensitisation Tests A17600C (Moddus Evo)	7 February 2013	Toxicology	Acute skin sensitisation studies, product	Applicant	
72568	S	Sieber, M.	Alpha-Hexylcinnamaldehyde: Contact Hypersensitivity in Albino Guinea Pigs, Buehler Test (Positive Control)	9 February 2012	Toxicology	Other information	Applicant	

Australian Government Department of Environment

In support of the registration of this new product for use in wheat, barley and oats, Department of Environment conducted the risk assessment by using the existing information in its data holdings for the active constituent, trinexapac-ethyl and its ten new formulation ecotoxicity studies provided by the applicant. The calculated combination toxicity endpoint was also used to assess risk to aquatic environment from tank mixture (trinexapac-ethyl + chlormequat chloride) use in wheat.

Given the use pattern of the product, the risk of exposure to active constituent trinexapac-ethyl and the proposed formulation was assessed for both terrestrial organisms and aquatic life. No unacceptable risk to the aquatic environment was predicted from the spray drift and run-off. Therefore, the proposed product, Moddus Evo Yield & Quality Enhancer is not considered to pose a potential risk to the aquatic organisms. Since the proposed product is also applied to wheat as a tank mixture, a calculated combination toxicity endpoint was used for the risk assessment. An acceptable risk to aquatic organisms was indicated for the proposed tank mixture use.

The risk for the exposure of the product to terrestrial organisms, including birds, honey bees, earthworms, other beneficial insects, soil microorganisms and non-target plants, was assessed as being acceptable based on the available ecotoxicity endpoints and the proposed use.

Consequently, Dept. of Environment advised some amendments to the label and thereby recommended to the APVMA that the use of the product in the proposed manner would not likely to have an unintended effect that is harmful to animals, plants, or things, or to the environment under Section 14 subsection 1 of the Agricultural and Veterinary Chemicals Code Act 1994.

Considering the recommendations of the environment risk assessment and amendments being incorporated to the RLP, the APVMA is satisfied of the environment risk criteria of the proposed product.

Data relied on to provide the advice

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
64689	S	Liedtke, A.	Trinexapac-ethyl DC (A17600C) ? Acute Toxicity to Daphnia magna in a 48-Hour Immobilization Test	4 November 2011	Environment toxicology	Aquatic organisms acute	Applicant	
64690	S	Liedtke, A.	Trinexapac-ethyl DC (A17600C) ? Toxicity to Pseudokirchneriella subcapitata in a 96-Hour Algal Growth Inhibition Test	14 November 2011	Environment toxicology	Aquatic organisms acute	Applicant	
64691	S	Eckenstein, H.	Trinexapac-ethyl DC (A17600C) ? Toxicity to the Aquatic Higher Plant Lemna gibba in a 7-Day Growth Inhibition Test	27 April 2012	Environment toxicology	Aquatic organisms acute	Applicant	

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
64688	S	Liedtke, A.	Trinexapac-ethyl DC (A17600C) ? Acute Toxicity to Rainbow Trout (<i>Oncorhynchus mykiss</i>) in a 96-Hour Test	02 November 2011	Environment toxicology	Aquatic organisms acute	Applicant	
64692	S	Kling, A.	Trinexapac-ethyl DC (A17600C) ? Acute Oral and Contact Toxicity to the Honeybee <i>Apis mellifera</i> L. in the Laboratory	16 April 2012	Environment toxicology	Non-target invertebrates (terrestrial) bees	Applicant	
64693	S	Friedrich, S.	Trinexapac-ethyl DC (A17600C) ? Acute toxicity to the earthworm <i>Eisenia fetida</i>	05 December 2011	Environment toxicology	Non-target invertebrates (terrestrial) earthworms	Applicant	
64694	S	Stevens, J.	Trinexapac-ethyl DC (A17600C) ? A rate-response extended laboratory bioassay of the effects of fresh residues on the parasitic wasp <i>Aphidius rhopalosiph</i> (Hymenoptera, Braconidae)	20 March 2012	Environment toxicology	Non-target invertebrates (terrestrial) parasites	Applicant	
64695	S	Fallowfield, L.	Trinexapac-ethyl DC (A17600C) ? A rate-response extended laboratory bioassay of the effects of fresh residues on the predatory mite, <i>Typhlodromus pyri</i> (Acari: Phytoseiidae)	20 March 2012	Environment toxicology	Non-target invertebrates (terrestrial) predators	Applicant	
64696	S	Schulz, L.	Trinexapac-ethyl DC (A17600C) ? Determination of Effects on the Activity of Soil Microflora (nitrogen and Carbon Transformation Tests)	21 March 2012	Environment toxicology	Non-target invertebrates (terrestrial) soil micros	Applicant	
64697	S	Stefanut, M.	Trinexapac-ethyl DC (A17600C) ? Evaluation of Phytotoxicity to Non Target Terrestrial Plants	16 February 2012	Environment toxicology	Non-target vegetation - laboratory	Applicant	

APVMA Residues and Trade Team

APVMA Residues and Trade Section has evaluated the available metabolism, residue trials, analytical methodology, fate in storage, processing data and residues in trade issues, including that submitted by Syngenta Crop Protection Pty Ltd to support their application, to assess whether this product is an undue hazard to the safety of consumers exposed to its residues, and further to determine whether there is any undue prejudice to Australia's trade of treated commodities.

The combined dataset (Australian and European data) matching or approximately matching the proposed GAPs for residues of trinexapac in cereal grains suitable for MRL estimation and a group MRL of 0.2 mg/kg is recommended for trinexapac in cereal grains, with a withholding period not being required when

the product is used as directed. Residues of chlormequat in wheat arising from a proposed tank mix of *Moddus Evo Yield and Quality Enhancer* with chlormequat chloride are not expected to exceed existing MRLs. The combined data set for residues in cereal forage collected 6 weeks after application, in accordance with the proposed GAP, and an MRL of 2 mg/kg is recommended for trinexapac-ethyl in forage of cereal grains (green), in conjunction with a 6 week grazing withholding period.

From the combined data set matching the proposed GAP for residues in cereal straw collected at an MRL of 0.5 mg/kg is recommended for straw and fodder (dry) of cereal grains, in conjunction with a 6 week grazing/cutting for stockfood withholding period for hay.

Residues of trinexapac concentrate moderately in wheat and barley bran with the highest processing factor of 2.5. Using the highest residue value of 0.10 mg/kg for trinexapac in cereal grains (a wheat result), and the highest processing factor of 2.5 (for wheat bran), an HR-P value of 0.25 mg/kg is calculated for cereal bran. An MRL of 0.5 mg/kg is therefore proposed for trinexapac-ethyl in bran, unprocessed of cereal grain. Residues of trinexapac appear to concentrate slightly in pearl barley, with the highest processing factor at 1.5. Multiplying this by the highest residue for barley (0.09 mg/kg) gives an HR-P value of 0.135 mg/kg, below the proposed MRL of 0.2 mg/kg for cereal grains. A separate MRL for pearl barley is not proposed.

As the combined trinexapac and conjugates residues observed in the 2013 trials were considerably greater than the residues of acid only, it is considered appropriate to change the established residue definition for trinexapac-ethyl, so that there are separate definitions for risk assessment and compliance for plant commodities. It is considered appropriate to set a residue definition of trinexapac and its conjugates, expressed as trinexapac acid for risk assessment purposes (dietary risk for plant commodities). This will also mean that the Australian residue definition will be consistent with the proposed Codex definition.

Available storage stability data shows that residues of trinexapac are sufficiently stable on frozen storage in wheat grain and straw, and in rapeseed for up to 24 months, a period longer than the times any of the residue trial samples were stored.

The feeding level of trinexapac-ethyl resulting from a diet of cereal forage is lower than the Maximum Feeding Level previously assessed for trinexapac-ethyl in mammalian livestock, and on which the MRLs are based. Existing MRLs for mammalian animal commodities therefore remain adequate. MRLs at the LOQ (*0.01 mg/kg) are proposed for trinexapac in eggs, poultry meat, and poultry edible offal.

The estimated dietary intake of trinexapac-ethyl arising from residues in food is unlikely to exceed the health standards.

The overall risk to export trade in animal commodities is considered to be low, as no changes are proposed to MRLs for mammalian animal commodities, while residues in poultry commodities are expected to be below the limit of quantitation. There is a potential risk to trade in cereal grains and oat hay, as finite residues of trinexapac-ethyl may be expected in these commodities, and a number of export markets (Japan for oat hay, and China, Taiwan, and a number of countries in the Middle East and southeast Asia for cereal grains) do not have appropriate tolerances in place. The overall risk to export trade in cereal grains and oaten hay is considered to be low.

Therefore in considering the residues assessment, the APVMA is satisfied that the use of the product in accordance with the required label instructions would not be an undue hazard or likely to have an effect that is harmful as per section 14(3)(e)(i)&(ii) and that the residues aspects of section 14(5) of the Agvet Codes have been met. The proposed use has also been assessed according to the trade criteria as defined by section 14(3)(e)(iv) of the Schedule to the Agvet Code Act and the APVMA is satisfied that, with respect to residues, that the proposed use meets the trade criteria as defined by section 14(3)(e)(iv).

Considering the recommendations of the residues and trade assessment to include the export trade advice have been incorporated to the RLP and the registration is subject to the non-standard conditions to implement stewardship program to keep track the product use, the APVMA is satisfied of the residues and trade criteria.

Upon granting of the application, the recommended amendments will be made to the MRL Standard in Tables 1 and 3 for inclusion in the Food Standards Code.

Data relied on to provide the advice

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
64698	S	Simmons, D.	CGA179500 ? Magnitude of Residues in Meat and Eggs Resulting from Feeding of Three Levels to Poultry	11 March 2010	Residues	Animal commodity residues crop transfer	Applicant	
64699	S	Burn, R.	Determination of trinexapac acid (CGA179500) in wheat, barley and oats following the application of MODDUS 250 EC	14 July 2011	Residues	Crop residues human consumption	Applicant	
64700	S	Dusterloh, K.	Trinexapac-ethyl - Residue Study on Winter Wheat in Spain and Southern France in 2011	26 January 2012	Residues	Crop residues human consumption	Applicant	
64701	S	Dusterloh, K.	Trinexapac-ethyl - Residue Study on Winter Wheat in Northern France and Germany in 2011	2 March 2012	Residues	Crop residues human consumption	Applicant	
64702	S	Dusterloh, K.	Trinexapac-ethyl - Residue Study on Winter Barley in Spain and Southern France in 2011	26 January 2012	Residues	Crop residues human consumption	Applicant	
64703	S	Dusterloh, K.	Trinexapac-ethyl - Residue Study on Winter Barley in the UK, Northern France and Germany in 2011	20 January 2012	Residues	Crop residues human consumption	Applicant	
92311	S	Winner, C.	Determination of residues of trinexapac acid in wheat, barley and oats following the application of MODDUS EVO 250 DC to allow comparison of analytical method GRM020.01A and REM137.13	2014	Residues	Crop residues human consumption	Applicant	
92310	S	Winner, C.	Determination of residues of trinexapac acid in wheat, barley and oats following the application of MODDUS EVO 250 DC	2014	Residues	Crop residues human consumption	Applicant	
92309	S	Frost, B.	Determination of residues of trinexapac ethyl (CGA179500) in wheat, barley and oats following the	2014	Residues	Crop residues human consumption	Applicant	

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
			application of MODDUS EVO 250 DC, Australia, 2013					
64705	S	Mayer, T.J.	Trinexapac-ethyl ? Magnitude of the Residues in or on Barley	16 February 2010	Residues	Fate - storage, processing and cooking	Applicant	
71478	S	S. Sack	Stability of residues of CGA 179500 (Metabolite of Trinexapac-Ethyl, CGA 163935) in deep freeze stored analytical specimens of wheat grain and straw) and rapeseed	17 November 1998	Residues	Fate - storage, processing and cooking	Applicant	
99530	S	Kent Ediger	Trinexapac-ethyl-Magnitude of the Residues in or on Wheat	2006	Residues	Fate - storage, processing and cooking	Applicant	

State/External Efficacy Reviewer

In support of the efficacy and crop safety of the proposed product for use on wheat, barley and oat crops in order to reduce the risk of crop lodging and enhance the grain yield potential of these cereal crops, a comprehensive set of data and technical report was provided from 58 trials conducted on wheat, barley, or oats with the proposed product and a registered reference product.

In the trials, there were generally consistent effects of the treatments on crop physiological parameters. The growth regulators reduced crop height, increased stem wall thickness and reduced lodging. The effects of the treatments on grain yields were less consistent but, in the presence of high crop biomass and lodging, there were increased crop grain yields. It was clear that single rates of 300-400 mL/ha of both the proposed and reference product gave the best performance to control crop height, biomass and lodging, with similar results being achieved with 200 mL/ha MODDUS + 1200 ml/ha chlormequat chloride. Where conditions favoured crop growth compensation (bounce-back) in barley, an additional application of 200-400 mL/ha of product at GS 37-39 (flag leaf just visible to flag leaf fully emerged) satisfactorily controlled crop height and lodging.

At the recommended rates, none of the products or product combinations caused any meaningful phytotoxic effects on crop appearance, grain yields or grain quality of healthy crops. In crops that were under stress, the stress symptoms were only mildly exacerbated by the use of the proposed and reference products. Although in some situations crop development may be delayed by up to 7-10 days at anthesis, total days to maturity (harvest) was not generally affected by MODDUS application at early or late stem elongation.

The reviewer therefore concluded that in terms of the evidence for the efficacy and crop safety of the product when used for reducing lodging and its effect on grain yield of cereal crops, the proposal to register the product- MODDUS EVO Yield and Quality Enhancer is supported.

Considering the efficacy reviewer's advice, the APVMA is satisfied that the use of the product would be effective and safe when used in accordance with the proposed label instructions.

Data relied on to provide the advice

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
64627	S	Peake, A.	Improving Yields in Irrigated Wheat: 2009 Trial Update	2009	Efficacy and safety	Efficacy	Public	
64628	S	Stapper, M.	High Yielding Irrigated Wheat Crop Management	2007	Efficacy and safety	Efficacy	Public	
64629	S	Berry, P.M., et al	Understanding and Reducing Lodging in Cereals	2004	Efficacy and safety	Efficacy	Public	
64630	S	Sumner, M. and Stavenuiter, M.	Evaluation of Moddus 250 EC, Cycocel 750A 582 EC, with adjuvants Adigor 440 EC and Agral 600 SL for root production and drought amelioration of wheat (<i>Triticum aestivum</i>) cv. Magenta. Walebing, Western Australia, 2010	7 July 2011	Efficacy and safety	Efficacy	Applicant	
64631	S	Bennet, J.T.	Plant growth regulators and their effect on yield of wheat in southern Australia	February 2011	Efficacy and safety	Efficacy	Applicant	
64632	S	Looby, P. and Harvey, S.	Moddus 250EC: Prevention of Lodging in wheat. Carrathool, NSW, 2771	18 March 2011	Efficacy and safety	Efficacy	Applicant	
64633	S	Somerville, A.	Moddus 250EC: Prevention of Lodging in Wheat. Report of Trial Conducted Near Dalby ? QLD	19 April 2011	Efficacy and safety	Efficacy	Applicant	
64634	S	Macleod, S.	Evaluation of Moddus 250 EC formulations with and without Cycocel 750A 582 SL for their effects on the growth, maturity and yield of wheat cv. Espada. Naracoote, South Australia, 2010-2011	15 June 2011	Efficacy and safety	Efficacy	Applicant	
64635	S	Loveless, T.	Evaluation of Moddus 250 EC alone and in combination with Cycocel 750 A for effect on physiological development, maturity and yield of wheat cv. Derrimut. Inverleigh, Victoria, 2001-10	24 March 2010	Efficacy and safety	Efficacy	Applicant	
64636	S	Hewitt, C.	Trinexapac-Ethyl ? PGR for Wheat. One Trial, York, Western Australia, Australia, 2009	20 April 2010	Efficacy and safety	Efficacy	Applicant	
64637	S	Todd, A.	Trinexapac-Ethyl ? PGR for Wheat. One Trial, Collingullie, New South Wales, Australia, 2009	20 April 2010	Efficacy and safety	Efficacy	Applicant	
64638	S	O'Connell, P.J.	Trinexapac-Ethyl ? PGR for Cereals	30 April 2010	Efficacy and safety	Efficacy	Applicant	
64639	S	Somerville, A.	Trinexapac-Ethyl ? PGR for Wheat. Report of Trial Conducted Near Brookstead ? QLD	18 May 2010	Efficacy and safety	Efficacy	Applicant	

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
64640	S	Somervaille, A.	Trinexapac-Ethyl ? PGR for Wheat. Report of Trial Conducted Near Cecil Plains ? QLD	19 May 2010	Efficacy and safety	Efficacy	Applicant	
64641	S	Ruchs, C.	Evaluation of Moddus 250 EC, applied alone or in mixtures with chlormequat chloride, for effects on physiological development, maturity and yield of wheat cv. Yitpi. Moculta, South Australia, 2009	3 June 2010	Efficacy and safety	Efficacy	Applicant	
64642	S	Ingram, B.	Comparison of the growth regulators trinexapac-ethyl and chlormequat chloride on crop development when applied at two application timings to wheat cv. Brennan. Stowport, Tasmania, 2009-10	02 July 2010	Efficacy and safety	Efficacy	Applicant	
64643	S	Tibrook, S.	Moddus 250 EC ? Prevention of Lodging in Wheat. Boxwood Hills, Western Australia	17 January 2011	Efficacy and safety	Efficacy	Applicant	
64644	S	Rademacher, J.	PGR for Wheat	21 December 2010	Efficacy and safety	Efficacy	Applicant	
64645	S	Bailey, L.	To determine the efficacy of Moddus 250 EC and Cycocel 750 A for the control of lodging in wheat cv. Kennedy. Wee Waa, NSW, 2010	19 April 2011	Efficacy and safety	Efficacy	Applicant	
64646	S	Heuke, L.	Moddus 250EC: Prevention of Lodging in Wheat	17 May 2011	Efficacy and safety	Efficacy	Applicant	
64647	S	O'Connell, P.J.	Moddus 250 EC: Prevention of Lodging in Wheat	20 May 2010	Efficacy and safety	Efficacy	Applicant	
64648	S	Kohler, D.	Comparison of plant growth regulators for effect on development in wheat cv. Mackellar. Elliot, Tasmania, 2010-11	01 June 2011	Efficacy and safety	Efficacy	Applicant	
64649	S	Lonsdale, D. and Mahony, P.	Moddus ? yield enhancement in wheat cv. Chara	06 February 2008	Efficacy and safety	Efficacy	Applicant	
64650	S	Sumner, M. and Stavenuiter, M.	Evaluation of Moddus 250 EC alone and combined with Cycocel 750A 582 EC and Adigor 440 EC for the prevention of lodging in wheat (Triticum aestivum) cv. Magenta. Walebing, Western Australia, 2010	01 June 2011	Efficacy and safety	Efficacy	Applicant	
64651	S	Seidel, J.	Evaluation of Moddus 250 EC with Cycocel 750A 582 SL and Cultar 250 SC for growth and yield effects in wheat cv. Diamondbird. Pleasant Hills, NSW, 2007	04 March 2008	Efficacy and safety	Efficacy	Applicant	
64652	S	Lonsdale, D. and Mahony, P.	Moddus ? yield enhancement in wheat cv. Yitpi	06 February 2008	Efficacy and safety	Efficacy	Applicant	
64653	S	Le Feuvre, D.	Moddus ? yield enhancement in wheat	20 February 2008	Efficacy and safety	Efficacy	Applicant	
64654	S	Leah, D.	Trinexapac-Ethyl +/- Paclobutrazol ? PGR for Cereals. One Field Trial	02 June 2009	Efficacy and safety	Efficacy	Applicant	

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
			in Wheat, Gerogery, New South Wales, Australia, 2008					
64655	S	Porter, R.	Evaluation of Moddus 250 EC, Cycocel 750A 582 SL and A-8164-B 250 SC for their effects on development, maturity and yield of wheat cv. Brennan. Glenroy, South Australia, 2008	24 April 2009	Efficacy and safety	Efficacy	Applicant	
64656	S	Seidel, J.	Evaluation of Moddus 250 EC with Cycocel 750A 582 SL and Cultar 250 SC for growth and yield effects in wheat cv. Chara. Culcairn, NSW, 2007	13 March 2008	Efficacy and safety	Efficacy	Applicant	
64657	S	Patten, D.	Comparison of growth regulators, Trinexapac-ethyl, Paclobutrazole and Chlormequat chloride on crop development when applied at two application timing to wheat cv. Brennan. Hagley, Tasmania, 2008-09	05 August 2009	Efficacy and safety	Efficacy	Applicant	
64658	S	O'Connell, P.J.	PGR for Cereals, Trinexapac-Ethyl + Paclobutrazole	18 April 2009	Efficacy and safety	Efficacy	Applicant	
64659	S	Lonsdale, D. and Mahony, P.	Trinexapac-ethyl + Paclobutrazol ? PGR for cereals	25 February 2009	Efficacy and safety	Efficacy	Applicant	
64660	S	Presser, R.	Evaluation of the effects of Trinexapac-ethyl (Moddus 250EC) and Paclobutrazol (A-8164-B) on cereal crops ? Greenethorpe, NSW 2008	2008	Efficacy and safety	Efficacy	Applicant	
64661	S	Dean, G., Munford, S. And Davey, B.	Use of Plant Growth Regulators to Reduce Crop Height in Wheat, Canola and Albus Lupins	2008	Efficacy and safety	Efficacy	Public	
64662	S	Pearce, R.	Trinexapac-Ethyl +/- Paclobutrazol ? PGR for Cereals. One Field Trial in Wheat, York, Western Australia, 2008	02 June 2009	Efficacy and safety	Efficacy	Applicant	
64663	S	Haskins, B. and McMullen, G.	Crop Canopy management through nitrogen and plant growth regulators	2007	Efficacy and safety	Efficacy	Public	
64664	S	Le Feuvre, D. and Long, B.	Best Practice Farming Systems (wheat canopy management)	2005	Efficacy and safety	Efficacy	Public	
64665	S	Le Feuvre, D.	Moddus- yield effects in wheat	20 February 2007	Efficacy and safety	Efficacy	Applicant	
64666	S	Lonsdale, D. and Mahony, P.	Trinexapac-ethyl + Paclobutrazol ? PGR for barley	02 February 2010	Efficacy and safety	Efficacy	Applicant	
64667	S	Rademacher, J.	PGR for Barley	21 December 2010	Efficacy and safety	Efficacy	Applicant	
64668	S	Ingram, B.	Comparison of the growth regulator trinexapac-ethyl aon crop	22 June 2010	Efficacy and safety	Efficacy	Applicant	

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
			development in barley cv. Gardiner. Carrick, Tasmania, 2009					
64669	S	Tibrook, S.	Moddus 250 EC ? Prevention of Lodging in Barley	18 January 2011	Efficacy and safety	Efficacy	Applicant	
64670	S	Somervaille, A.	Moddus 250EC: Prevention of Lodging in Barley (F). Report of Trial Conducted Near Dalby ? QLD	7 April 2011	Efficacy and safety	Efficacy	Applicant	
64671	S	Somervaille, A.	Moddus 250EC: Prevention of Lodging in Barley and Oats (E). Report of Trial Conducted Near Dalby ? QLD	27 April 2011	Efficacy and safety	Efficacy	Applicant	
64672	S	Bailey, L.	To determine the efficacy of Moddus 250 EC and Ethephon 720 SL for the control of lodging in barley cv. Commander. Wee Waa, NSW, 2010	19 April 2011	Efficacy and safety	Efficacy	Applicant	
64673	S	O'Connell, P.J.	Moddus 250EC: Prevention of Lodging in Barley and Oats	20 May 2011	Efficacy and safety	Efficacy	Applicant	
64674	S	Butler, T. and Kohler, D.	Comparison of plant growth regulators for effect on development and yield in barley cv. Gairdner. Symmons Plains, Tasmania, 2010-11	1 June 2011	Efficacy and safety	Efficacy	Applicant	
64675	S	Montagna, M.	Moddus 250EC: Prevention of Lodging in Barley. One Trial, Inverleigh, Victoria, 2010	3 June 2011	Efficacy and safety	Efficacy	Applicant	
64676	S	Macleod, S.	Evaluation of Moddus 250 EC for effects on the growth, maturity and yield of barley cv. Schooner. Arthurton, South Australia, 2010-2011	29 June 2011	Efficacy and safety	Efficacy	Applicant	
64677	S	Long, B.	Positive pointers from growth regulants	2004	Efficacy and safety	Efficacy	Public	
64678	S	Macleod, S.	Evaluation of Moddus 250 EC formulations for effects on the growth, maturity and yield of oats cv. Coolibah. Paskeville, South Australia, 2010	1 July 2011	Efficacy and safety	Efficacy	Applicant	
64679	S	Gallasch, S.	Moddus 250EC: Prevention of Lodging in Oats. One Trial, Point Pass, South Australia, 2010	26 May 2011	Efficacy and safety	Efficacy	Applicant	
64680	S	Clarke, R.	Moddus 250EC: Prevention of Lodging in Oats. One Trial, York, Western Australia, 2010	3 June 2011	Efficacy and safety	Efficacy	Applicant	
64681	S	James, D.	HTTP formulations (Trinexapac) in wheat in NZ, Chris Smith(Altonbrook Farm), Inwoods Rd, Southbridge	2011	Efficacy and safety	Efficacy	Applicant	
64682	S	James, D.	HTTP formulations (Trinexapac) in wheat in NZ, Craig Mackenzie, Reynolds Rd, Methven	2011	Efficacy and safety	Efficacy	Applicant	
64683	S	James, D.	HTTP formulations (Trinexapac) in wheat in NZ, Chirs Morrish, 463 Waterholes Rd, Springston	2011	Efficacy and safety	Efficacy	Applicant	

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
64684	S	James, D.	HTTP formulations (Trinexapac) in wheat in NZ, A. Innes(Innes Fields), Somerton Rd, Canterbury	2011	Efficacy and safety	Efficacy	Applicant	
64685	S	Neill, D.	A17600C: Evaluation of the new DC formulation of trinexapac-ethyl on wheat, Chris Morrish, 463 Waterholes Rd, Springston	2012	Efficacy and safety	Efficacy	Applicant	
64686	S	Neill, D.	A17600C: Evaluation of the new DC formulation of trinexapac-ethyl on wheat,A. Innes(Innes Fields), Somerton Rd, Canterbury	2012	Efficacy and safety	Efficacy	Applicant	
64687	S	Neill, D.	A17600C: Evaluation of the new DC formulation of trinexapac-ethyl on wheat, Brian Leadley(Bradley Fields), Stanley Rd, Ahsburton	2012	Efficacy and safety	Efficacy	Applicant	

* S = Data submitted with the application