



IPAB Intellectual Property Appellate Board
balancing ip-protection

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OA/10/2020/PT/KOL

MONDAY, THIS THE 21ST DAY OF DECEMBER, 2020

**HON'BLE SHRI JUSTICE MANMOHAN SINGH
HON'BLE DR. B.P. SINGH**

**CHAIRMAN
TECHNICAL MEMBER (PATENTS)**

1. UPL LIMITED

HAVING ITS REGISTERED OFFICE AT: 3-11,
GIDC, VAPI – 396195, STATE OF GUJARAT, INDIA
AND ALSO HAVING ITS OFFICE AT
UNIPHOS HOUSE, 11TH ROAD, C.D. MARG, KHAR
(WEST) MUMBAI – 400 052, STATE OF
MAHARASHTRA, INDIA

...APPLICANT/APELLANT

(Represented by: Mr S Majumadar)

Versus

**1. THE CONTROLLER GENERAL OF PATENTS,
DESIGNS**

MUMBAI, PATENT OFFICE, MUMBAI, BOUDHIK
SAMPADA BHAWAN, S. M. ROAD, NEAR ANTOP
HILL POST OFFICE, ANTOP HILL,
MUMBAI – 400 037.

**2. ASSISTANT CONTROLLER OF PATENTS &
DESIGNS**

KOLKATA, THE PATENT OFFICE, BOUDHIK
SAMPADA BHAWAN, CP-2, SECTOR V, SALT
LAKE CITY, KOLKATA – 700 091, WEST BENGAL

...RESPONDENT

(Represented by - None)

ORDER

Hon'ble Shri Justice Manmohan Singh, Chairman

Hon'ble Dr. B.P. Singh, Technical Member (Patents)

1. The present appeal is filed under Section 117A of the Indian Patents Act, 1970, against the order dated 27/02/2020, passed by the

Respondent NO. 2, being the Assistant Controller of Patents & Designs, under Section 15 of the Indian Patents Act, 1970, refusing to grant the Appellants' Indian patent application no. 201631044687.

2. It is the case of the appellant that the Respondent No. 2 acted arbitrarily and contrary to the provisions of The Patents Act, 1970 having failed to appreciate the Appellant's case and consider the submissions made by the Appellant in response to the First examination Report qua its objections raised in respect of inventive step and also failed to consider the written notes of arguments filed by the applicant along-with the amended claims as filed with the written submissions. The Respondent No. 2 did not take into account the detailed submissions of the applicant in respect of the prior arts cited by the patent office, more particularly Prior Art D2. The Respondent No. 2 not only failed to appreciate section 2 (1) (ja) of The Patents Act, 1970, in its true perspective and misinterpreted the same while delivering the judgment, but also misjudged the prior arts in as much as he has relied upon a single document D2 as the basis of rejection without referring to the clarifications given by the Appellant qua the same.

3. The appellant invention is as follows:

3.1 The invention provides a herbicidal composition comprising metamitron (in short MTM) and chlorpropham (in short CHP) in a ratio of about 4:1 that surprisingly controls the population of *Chenopodium album*. Thus, the composition which is a combination of two specific herbicides in a specific ratio namely 4:1 which provides a resistance management against *Chenopodium album*.

3.2 *Chenopodium album* is an annual weed which is responsible for important economic losses in agriculture around the world. Among the weeds implicated with the losses attributed to weeds, *Chenopodium album* has been classified as one of the world's worst. This weed is a very successful colonizer of disturbed soil and causes damage in cultivated crops such as sugar beets, corn, soybeans, potato and cereal crops.

3.3 Experiments show that metamitron and chlorpropham, was ineffective in the control of weeds such as *Stellaria media* and *Lamium purpureum* and several others as shown in the specification in the form of experimental results, but demonstrated excellent synergistic control on *Chenopodium album*. The experimental results further go to show that when the herbicides MTM and CHP were used alone demonstrated results which cannot be said to be efficient resistance management against *Chenopodium album*. The combination controlled the weed both pre and post emergently. As demonstrated by the examples, the combination of metamitron and chlorpropham synergistically controlled *Chenopodium album* as compared to other weeds at a particular locus. The current invention therefore provides advantageous methods of controlling *Chenopodium album* both pre and post emergently. The present method also provides a broader spectrum of controlling weeds that helps in resistance management, thus preventing the weed from becoming resistant to either of the herbicides whilst providing a broader spectrum of control.

4. The appellants have shown the improvement of their invention over prior art as follows:

4.1 The weed *Chenopodium album* is known and so is the herbicides MTM and CHP but a specific combination of MTM and CHP and in the ratio of 4:1 was not known and metamitron alone was found to be unsuccessful in the control of *Chenopodium album* in sugar as apparent from J Aper, Jan De Riek, B De Cauwer, Dirk Reheul, Communications in agricultural and applied biological sciences 77(3):335-42, January 2012.

4.2 The learned counsel of the appellant has shown that the technical advancement of the Appellant's invention as claimed is that it provides compositions comprising metamitron and chlorpropham in the ratio of 4:1 for controlling *Chenopodium album*. It has surprisingly been found by the present inventors that *Chenopodium album* can be completely controlled by the combination of metamitron and chlorpropham, as adequately demonstrated by data in the Appellant's specification (page 7 of Complete Specification), showing comparison of efficacy in a wide range of weeds. The experimental data further goes to show the management profile against *Chenopodium album* from which one can clearly see that the management pattern is significantly higher compared to individual use of MTM and CHP. It is also evident from the said experimental data that the composition of the invention does not have the same or similar beneficial effect on a large number of other weeds. Moreover, chlorpropham when combined with metamitron not only impart beneficial herbicidal effect but also nullifies the resistance against metamitron in *Chenopodium album* and this clearly a technical advancement.

5. The hearing notice inter alia had following main objections:

5.1 *Non-Patentability u/s 3*

5.1.1 *Claims 11-14 attract the provision of section 3(e) of the Act.*

5.1.2 *The claims 1-10 attract the provision of section 3(h) of the Patent Act as it is method of agriculture and is not patentable.*

5.2 *Invention u/s 2(1)(j) :*

5.2.1 *Without prejudice to the above objections Claims are not novel in light of the prior art document D3. The cited document D3 discloses In trials carried out in sugar-beet on a range of mineral soils during 1977-80, selective pre-em. weed control was obtained with propham + chlorpropham + fenuron at 0.58 - 1.18 kg mixture/ha in a tank mixture with metamitron at 1.14-1.17 kg/ha. This tank mixture at these normal rates compared favourably with metamitron alone at 3.5 kg/ha in terms of crop emergence and vigour, while twice the normal rate of application still resulted in excellent emergence and only a 7% reduction in vigour.*

5.2.2 *Claims of the alleged invention lacks inventive step in view of prior art documents u/s 2(1)(ja) of the Patents Act. D1 : ONAS APER ET AL, "Absorption, translocation and metabolism of metamitron in Chenopodium album", PEST MANAGEMENT SCIENCE, BOGNOR REGIS; GB, (20110728), vol. 68, no. 2, pages 209 - 216, (29/05/2011) D2 :CA2965466A1 (28/04/2016) D3: The control of annual weeds pre-emergence in sugar beet, with a mixture of propham, chlorpropham, fenuron and metamitron, 1977-1980 Elliott, R.A.; Jung, K.U. Proceedings 1980 British Crop Protection*

Conference Weeds: 523-530 The cited document D1 discloses common lambsquarters (Chenopodium album L.) populations THE PATENT OFFICE Page 1 of 2 from sugar beet fields in different European countries have responded as resistant to the atriazinone metamitron. The populations have been found to have the same D1 point mutation as known for atrazine-resistant biotypes (Ser264 to Gly). However, pot experiments revealed that metamitron resistance is not as clear-cut as observed with triazine resistance in the past. The objectives of this study were to clarify the absorption, translocation and metabolic fate of metamitron in C. album. Root absorption and foliar absorption experiments showed minor differences in absorption, translocation and metabolism of metamitron between the susceptible and resistant C. album populations. A rapid metabolism in the C. album populations was observed when metamitron was absorbed by the roots. The primary products of metamitron metabolism were identified as deamino-metamitron and metamitron-N-glucoside. PABA, known to inhibit the deamination of metribuzin, did not alter the metabolism of metamitron, and nor did the cytochrome P450 inhibitor PBO. However, inhibition of metamitron metabolism in the presence of the cytochrome P450 inhibitor ABT was demonstrated.

5.2.3 The cited document D2 discloses a highly active herbicidal composition that controls undesirable plants via a synergistic herbicidal effect. The

herbicidal composition contains: (A) metobromuron or a salt thereof; and (B) at least one herbicidal compound selected from the group consisting of chlorpropham, S-metolachlor, flufenacet, pyroxasulfone, nicosulfuron, fluazifop-P-butyl, prometryn, ioxynil, pendimethalin, trifluralin, prosulfocarb, thiobencarb, and indanofan, or an alkylester or salt of said at least one herbicidal compound. Also provided is a herbicidal method using the herbicidal composition.

From the teachings of prior art documents D1-D3controlling weeds at a particular locus using a synergistic combination of metamitron and chlorpropham is very obvious to the person skilled in the art having common general knowledge hence the claims are not allowable u/s 2(1)(ja) of the Patents.

6. The operating portion of the order of the respondent no. 2 is as follows:

6.1 *In view of the applicant's submission to the objection u/s 2(1)(ja), the office has reached to the following conclusion:-*

The instant application discloses a composition for controlling Chenopodium album comprising Metamitron and Chlorpropham; whereas document D2 (as cited in hearing notice) discloses a composition of metobromuron and Chlorpropham for the same use. The applicant has argued (p-11 of reply) that, there is no motivation to replace metabromuron (urea derivative) with metamitron (triazine). The attention of the applicant has been drawn to the fact that, both the compounds are being used as herbicide and most importantly, the mode of action of both the compounds, is to

*disrupt photosystem II by inhibiting electron transport. Although, both the compounds are structurally quite different, but because of their same mode of action, a person having ordinary skilled in the art could easily replace the metobromuron (of prior art), by the Metamitron. **Therefore, the office considers that the applicant has not complied the objections raised in hearing notice, and the present claimed subject matter (claim 1-7) does not meet requirements of section 2(1)(ja) of the Patent Act, 1970.***

Under this circumstance, I hereby refuse to proceed further with this instant patent application number 201627011758 for grant of patent in accordance with Section 15 of The Patents Act, 1970 (as amended). [Emphasis added]

7. A close look on the hearing notice and the order of the respondent no. 2 will reveal that while he has retained the objection of lack of inventive step, all other objections such as that on novelty and non-patentability under section 3 were considered and waived off by him though the order do not mention anything specific about these objections.
8. It is evident that the order is void of proper reasoning and is totally subjective. No method of determination of inventive step has been adhered to, by the respondent no.2 either. The method of determination of inventive step has not only been emphasized in various judicial pronouncements but is also clearly described in *Manual of Patent Office Practice and Procedure -2019¹*, *Guidelines for Examination of Patent Applications in the Field of Pharmaceuticals²* and *Guidelines for Examination of Computer*

¹ Available at

http://www.ipindia.nic.in/writereaddata/Portal/Images/pdf/Manual_for_Patent_Office_Practice_and_Procedure_.pdf

² Available at http://www.ipindia.nic.in/writereaddata/Portal/IPOGuidelinesManuals/1_37_1_3-guidelines-for-examination-of-patent-applications-pharmaceutical.pdf

*Related Inventions (CRIs)*³; wherein the method of determination of determination of inventive step has been clearly explained with the help of several case laws. This Board, in recent past, has elaborated the method of determination of inventive step in PHARMACYCLICS, LLC vs LAURUS LABS PVT. LTD⁴ and choose not to repeat for the sake of brevity.

9. The arguments of the learned counsel of the appellants are as under:

9.1 D2 discloses a herbicidal composition comprising (A) metobromuron (MBN) or its salt and (B) at least one herbicidal compound selected from the group consisting of chlorpropham, S-metolachor, flufenacet, pyroxasulfone, nicosulfuron, fluazifop-P-butyl, prometryn, ioxynil, pendimethalin, trifluralin, prosulfocarb, thiobencarb, and indanofan, or an alkylester or its salt against a large number of weed plants including *Chenopodium album*.

9.2 Appellant's invention on the other hand is a composition of metamitron and chlorpropham in the ratio of 4:1 and this composition shows additive or antagonistic effect for other weeds while a surprising synergistic effect against *Chenopodium album* only.

9.3 D2 discloses that the composition as disclosed therein is effective against a broad range of weeds and such a list of weeds runs over two pages (pages 5 to 7 of D2, page 216 to 218 of Appeal Paper Book) and provides an almost exhaustive list of around 85 weeds. Whereas, it has been tested that the present composition of metamitron and chlorpropham do not show synergistic activity against any weeds other than

³ Available at

http://www.ipindia.nic.in/writereaddata/Portal/IPOGuidelinesManuals/1_86_1_Revised__Guidelines_for_Examination_of_Computer-related_Inventions_CRI__.pdf

⁴ OA/46/2020/PT/DEL

Chenopodium album. For ease of reference, the table below compares the activity of the compositions of D2 with the present composition for a few weeds from the list in D2:

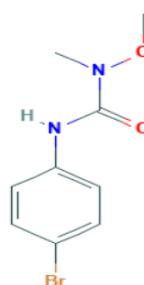
Weeds	D2: Metobromuron + Chlorpropham or others	Present: Metamitron + Chlorpropham
<i>Chenopodium album</i>	Yes	Yes
<i>Stellaria media</i>	Yes	No
<i>Laminum purpurea</i>	Yes	No
<i>Lamium amplexicaule</i>	Yes	No
<i>Solanum nigrum</i>	Yes	No
<i>Galium aparine</i>	Yes	No

9.4 Metobromuron is an essential herbicide of D2 but there is no teaching that metobromuron can be substituted with metamitron, more so because metabromuron is a urea derivative and metamitron is a triazine derivative and are structurally different. The structures of metamitron and metobromuron are as below:

Metamitron



Metabromuron



9.5 Disrupting photosystem II by inhibiting electron transport signifies inhibiting photosynthesis in weeds and there are many other herbicides which also exhibit the same mode of action of inhibiting photosynthesis. The mode of action in the present case is by way of inhibiting Photosystem II of

photosynthesis. There are multiple herbicides that work in this way. **If according to the Respondent, metamitron can replace metobromuron only because they have the same mode of action, then all other herbicides and fungicides having the same mode of action can replace metobromuron, and there is no reason as to why one would specifically stick to metamitron.** Each of the aforesaid families have number of members; metamitron is a member of triazines, whereas metobromuron is a member of urea family. Besides triazine and urea, other classes such as triazinones, uracils, phenylcarbamates, anilides, cyanophenols, dinitrophenols can also inhibit photosystem II and these classes encompass various compounds. Accordingly, there cannot be any motivation that **only** metamitron that is a triazine can replace metobromuron.

- 9.6 Moreover, there is no motivation for a person skilled in the art to replace metobromuron with metamitron, since previous studies such as in D1 showed that *Chenopodium album* has gained resistance specifically against metamitron. D1 states that “*In recent years, common lambs quarters(Chenopodium album L.) populations from sugarbeet fields in different European countries have responded as **resistant to the as-triazinone metamitron**” and “*The investigated Belgian metamitron-resistant C. album populations have the same Ser264-to-Gly mutation in the psbA gene of the chloroplast genome as atrazine-resistant populations*” It is also stated by D1 that “*The unsatisfactory control was caused by resistance to a key herbicide in this crop:metamitron(4-amino-3-methyl-6-phenyl-1,2,4-triazin-5(4H)-one), an as-triazinone that inhibits photosystem II (PSII) electron transport.*” (Abstract and*

Introduction of D1, Page 200 of Appeal Paper Book) . It is concluded by D1 that *C. album* metabolise metamitron in presence of Cyt P450 enzyme and thus does not allow metamitron to inhibit the PSII of the plant and thus no herbicidal effect has been found against *C. album*. **There cannot be any justification of holding the interchangeability of MBN and MTM when MTM is categorically reported to have resistance against *Chenopodium album*, which is the subject matter of the invention of the Appellant and rejection of the application on that basis.** Also it may be appreciated that when the success of the invention stands on the demonstrated synergy between a reported ineffective herbicide qua MTM and a second herbicide namely CHP, the applicability of D2 collapses straightaway.

9.7 To arrive at the present invention from D2, a person skilled in the art would have to firstly replace essential herbicide Metobromuron of D2 with a structurally different herbicide Metamitron towards which there is no teaching and then combine with specifically Chloroprotham among the other 13 herbicides disclosed in D2 which is undue experimentation since other herbicides in combination with metobromuron also show activity against *C. album* and all these cannot be achieved unless the blue print of the present invention is with the person skilled in the art i.e., it is not possible to reach the present invention from such prior art without **impermissible hindsight approach.**

9.8 It is further shown in all the Tables (Complete specification on Page 118 to 148 of Appeal Paper Book) that the actual effect of the combination of metamitron and chloroprotham in the ratio of 4:1 against *Chenopodium album* is more than the

expected efficacy which goes on to show the synergistic action of the combination. More surprisingly, the combination does not work against any other weed, even for those for which the herbicides are known to be effective. The effects are visible in all the field trials as disclosed in subject specification on pages 21 to 49. The composition shows additive or antagonistic effect for other weeds while a surprising synergistic effect against *Chenopodium album*. The composition was found to show additive effect for *Stellaria media* while antagonistic against *Lamium purpur* (Table 1 and Table 2 on pages 21 and 22). Additionally, Tables 3-6 (Trial 2), Trials 3 and 4 at pages 23-49 signify surprising and unexpected synergistic activity in the claimed combination in controlling *Chenopodium album*.

9.9 On the issue of Synergy as well , the learned counsel of the appellatant submits as under:

9.10 The composition of Metamitron and Chlorpropham in a ratio of 4:1 has been demonstrated to have a surprising and synergistic effect on *Chenopodium album* but shows merely additive or antagonistic effect on other weeds, a data which is also provided in the specification (Complete specification on pages 21 to 49, Page 118 to 148 of Appeal Paper Book). Therefore, when synergistic combination of Metamitron, which is known to be ineffective against *C. album*, with Chlorpropham in a specific ratio of 4:1 against *C. album* is found then there cannot remain a question whether metamitron could or would have replaced another herbicide of a prior art.

9.11 There is no teaching in D2 if MBN, the essential herbicide of the D2 alone is ineffective against *Chenopdoun album* whereas MTM is known to be ineffective against *Chenopdoun album*. Therefore, there can be no motivation to replace MBN with MTM which is known to have no activity against *Chenopdoun album*. The Respondent having acknowledged the unexpected and synergistic effect of the composition of MTM, has not acknowledged the inventive step of the composition which is totally unfounded.

10. We have analysed the order of the respondent no. 2 and the arguments of the appellants and are inclined to accept the arguments of the appellant since there is no teaching in the cited document D2 to arrive at the present invention except the hindsight biasing which cannot be accepted. Further, the amended claims are well within the teachings of section 57 read with section 59 of the Patents Act 1970.

11. We, therefore, set aside the order of respondent no.2 and direct him to grant the patent on the amended set of claims 1-7 within 3 weeks from the issuance of this order.

12. Keeping in view the above facts and circumstances, the instant appeal is allowed. No cost.

-Sd/-

(Dr. B.P. Singh)
Technical Member (Patents)

-Sd/-

(Justice Manmohan Singh)
Chairman

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