

International Multidisciplinary
Research Journal

Golden Research
Thoughts

Chief Editor
Dr.Tukaram Narayan Shinde

Publisher
Mrs.Laxmi Ashok Yakkaldevi

Associate Editor
Dr.Rajani Dalvi

Honorary
Mr.Ashok Yakkaldevi

Welcome to GRT

RNI MAHMUL/2011/38595

ISSN No.2231-5063

Golden Research Thoughts Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial board. Readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

International Advisory Board

Flávio de São Pedro Filho Federal University of Rondonia, Brazil	Mohammad Hailat Dept. of Mathematical Sciences, University of South Carolina Aiken	Hasan Baktir English Language and Literature Department, Kayseri
Kamani Perera Regional Center For Strategic Studies, Sri Lanka	Abdullah Sabbagh Engineering Studies, Sydney	Ghayoor Abbas Chotana Dept of Chemistry, Lahore University of Management Sciences[PK]
Janaki Sinnasamy Librarian, University of Malaya	Ecaterina Patrascu Spiru Haret University, Bucharest	Anna Maria Constantinovici AL. I. Cuza University, Romania
Romona Mihaila Spiru Haret University, Romania	Loredana Bosca Spiru Haret University, Romania	Ilie Pinteau, Spiru Haret University, Romania
Delia Serbescu Spiru Haret University, Bucharest, Romania	Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	Xiaohua Yang PhD, USA
Anurag Misra DBS College, Kanpur	George - Calin SERITAN Faculty of Philosophy and Socio-Political Sciences Al. I. Cuza University, IasiMore
Titus PopPhD, Partium Christian University, Oradea, Romania		

Editorial Board

Pratap Vyamktrao Naikwade ASP College Devrukh, Ratnagiri, MS India	Iresh Swami Ex - VC. Solapur University, Solapur	Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur
R. R. Patil Head Geology Department Solapur University, Solapur	N.S. Dhaygude Ex. Prin. Dayanand College, Solapur	R. R. Yalikal Director Management Institute, Solapur
Rama Bhosale Prin. and Jt. Director Higher Education, Panvel	Narendra Kadu Jt. Director Higher Education, Pune	Umesh Rajderkar Head Humanities & Social Science YCMOU, Nashik
Salve R. N. Department of Sociology, Shivaji University, Kolhapur	K. M. Bhandarkar Praful Patel College of Education, Gondia	S. R. Pandya Head Education Dept. Mumbai University, Mumbai
Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai	G. P. Patankar S. D. M. Degree College, Honavar, Karnataka	Alka Darshan Shrivastava Shaskiya Snatkottar Mahavidyalaya, Dhar
Chakane Sanjay Dnyaneshwar Arts, Science & Commerce College, Indapur, Pune	Maj. S. Bakhtiar Choudhary Director, Hyderabad AP India.	Rahul Shriram Sudke Devi Ahilya Vishwavidyalaya, Indore
Awadhesh Kumar Shirotriya Secretary, Play India Play, Meerut (U.P.)	S. Parvathi Devi Ph.D.-University of Allahabad	S. KANNAN Annamalai University, TN
	Sonal Singh, Vikram University, Ujjain	Satish Kumar Kalhotra Maulana Azad National Urdu University

Address:- Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.aygrt.isrj.org

EFFECT OF POST-EMERGENCE HERBICIDES ON SPECIES-WISE WEED DENSITY AND YIELD IN SESAME [*SESAMUM INDICUM*(L.)]



Sourav Gupta

Department of Agronomy , RVSKVV, College of Agriculture, Gwalior (M.P.) , India.

Short Profile

Sourav Gupta is Department of Agronomy at RVSKVV, College of Agriculture, Gwalior (M.P.) , India.



ABSTRACT:

A field experiment was carried out at the Research Farm, Department of Agronomy, College of Agriculture, RVSKVV, Gwalior (M.P.) during *kharif* 2013. Treatment Two hand weedings at 20 and 40 DAS recorded significantly lowest weed density, followed by PoE application of treatment Propaquizafop 10% EC @ 100 g a.i./ha PoE but caused chlorosis in the sesame crop thus bad effect on yield parameters. Treatment Two hand weedings at 20 and 40 DAS also gave highest values for economical parameters viz., seed yield, net income and B:C ratio followed by treatment Propaquizafop 10% EC @ 50 g a.i./ha PoE.

KEYWORDS

Post-Emergence Herbicides , Species-wise Weed density , Sesamum indicum(L.)

INTRODUCTION

Sesame [*Sesamum indicum*(L.)] popularly known as Til, Tilli, Gingelly etc. is important oilseed crop and belongs to the family *Pedaliaceae*. India ranks second after Burma both in area and production of sesame in the world. The area under the crop in India is about 1901 thousand hectares and total production is 810 thousand tonnes [Anonymous (2011-12)]. In M.P. total cultivated area and production of sesame are 295 thousand hectares and 155 thousand tonnes; respectively [C. L. R. S. (2011-12)]. Severe weed competition is one of the major constraints in lower productivity of sesame.

METHODS AND MATERIAL

The present experiment was conducted under the edaphic and climatic conditions of Gwalior (M.P.). The topography of the field was uniform with proper drainage. The soil of the experimental field was sandy clay loam in texture. The experiment was conducted in randomized block design with 3 replications and 7 treatments. The treatments of weed control include Propaquizafop 10% EC (PoE) @ 50 g a.i./ha(T_1), Propaquizafop 10% EC (PoE) @ 62.5 g a.i./ha(T_2), Propaquizafop 10% EC (PoE) @ 100 g a.i./ha(T_3), Quizalofop-p-ethyl 5% EC (PoE) @ 50 g a.i./ha(T_4), Fenoxaprop-p-ethyl 9% EC (PoE) @ 100 g a.i./ha(T_5), Two hand weedings at 20 and 40 DAS(T_6) and Control/Weedy check(T_7). The sesame crop variety TKG-22 was sown on 01-07-2013 and was grown with all recommended practices except weed control measures which were applied as per treatments undertaken for investigation. The nutrients were applied at the rate of 60 kg N, 40 kg P_2O_5 and 20 kg K_2O /ha.

RESULTS AND DISCUSSION

Effect on crops :

The highest yield was observed in treatment Two hand weedings at 20 and 40 DAS, followed by propaquizafop @ 50 g a.i./ha. Whereas the application of propaquizafop @ 100 g a.i./ha gave best weed control result but had phytotoxic effects viz., chlorosis on growth of sesame resulting in decreased yield (Nadeem *et al.*, 2009). The highest yield and lowest weed density were recorded in treatment Two hand weedings at 20 and 40 DAS.

Effect on weeds :

Weeds are most limiting factor responsible for low yield of sesame. The weed flora was dominated by species including *Cyperus rotundus*(L.), *Cynodon dactylon*(L.) pers., *Echinochloa crus-galli*(L.) Beauv., *Echinochloa colona*(L.), *Dinebra arabica*(L.), *Digitaria longiflora*(L.) and *Dactylactenium aegyptium*(L.) in the experimental site. The population of *Cyperus rotundus* was not influenced significantly by all weed control treatments except treatment Two hand weedings at 20 and 40 DAS. Significantly lowest population of *Cyperus rotundus* was noted under treatment Two hand weedings at 20 and 40 DAS. Treatment Two hand weedings at 20 and 40 DAS gave complete control of *Cynodon dactylon* and *Echinochloa crus-galli*. The next effective treatment was Fenoxaprop-p-ethyl 9% EC (PoE) @ 100 g a.i./ha. Treatment Two hand weedings at 20 and 40 DAS gave complete control of *Echinochloa*

colona and *Digitaria longiflora*. The next effective treatment was Propaquizafop 10% EC (PoE) @ 62.5 g a.i./ha. Treatment Two hand weedings at 20 and 40 DAS done complete control of *Dinebra Arabica* and *Dactylactenium aegyptium*. The next effective treatment was Propaquizafop 10% EC (PoE) @ 100 g a.i./ha. Treatment Two hand weedings at 20 and 40 DAS gave complete total weed control. The next effective treatment was Propaquizafop 10% EC (PoE) @ 100 g a.i./ha. The highest total weed population was counted under control/weedy check. Similar, results were also obtained by Bhadauria et al. (2012).

ECONOMICS

The highest net return and B:C ratio were obtained under treatment Two hand weedings at 20 and 40 DAS, followed by treatments Propaquizafop @ 50 g a.i./ha, while lowest B:C ratio with control/weedy check. Under all weed control treatments B:C ratio were found low due to abnormal weather conditions in crop growth and maturity period. Such findings confirmed by the result of Vijayalaxmi et al. (2012).

CONCLUSIONS

On the basis of above findings, it may be concluded that treatment Two hand weedings at 20 and 40 DAS, followed by treatment Propaquizafop 10% EC (PoE) @ 50 g a.i./ha are most effective and remunerative weed control practices for controlling the weeds in sesame under sandy clay loam soils of Northern M.P.. The higher grain yield and net return were obtained from treatment Two hand weedings at 20 and 40 DAS.

Table 1: Effect of weed control practices on species-wise weed population, total weed population, grain yield, net income and B:C ratio of sesame

Treatment	Population/m ²								Grain yield (kg/ha)	Net income (/ha)	B:C Ratio
	<i>Cyperus rotundus</i>	<i>Cynodon dactylon</i>	<i>E. crus-galli</i>	<i>E. colona</i>	<i>Dinebra arabica</i>	<i>Digitaria longiflora</i>	<i>D. aegyptium</i>	Total weed			
T ₁ -Propaquizafop 10% EC (PoE) @ 50 g a.i./ha	3.83 (14.22)	2.37 (5.33)	2.29 (4.89)	2.37 (5.33)	1.94 (3.56)	2.19 (4.45)	2.20 (4.44)	1.78 (60.44)	515.83	36988.97	2.76
T ₂ -Propaquizafop 10% EC (PoE) @ 62.5 g a.i./ha	4.27 (17.78)	1.85 (3.11)	2.57 (6.22)	1.85 (3.11)	2.19 (4.45)	1.75 (2.67)	2.08 (4.00)	1.77 (58.22)	437.50	28034.06	2.32
T ₃ -Propaquizafop 10% EC (PoE) @ 100 g a.i./ha	3.88 (14.67)	1.94 (3.56)	1.85 (3.11)	1.96 (3.55)	1.85 (3.11)	2.11 (4.00)	1.85 (3.11)	1.70 (49.78)	416.94	25048.29	2.14
T ₄ -Quizalofop-p-ethyl 5% EC (PoE) @ 50 g a.i./ha	4.00 (15.56)	2.29 (4.89)	2.48 (5.78)	2.29 (4.89)	2.05 (4.00)	1.85 (3.11)	2.27 (4.89)	1.79 (61.78)	501.39	34761.79	2.61
T ₅ -Fenoxprop-p-ethyl 9% EC (PoE) @ 100 g a.i./ha	3.94 (15.11)	1.75 (2.67)	1.85 (3.11)	2.15 (4.44)	2.29 (4.89)	1.96 (3.55)	2.48 (5.78)	1.75 (55.56)	409.44	24194.6	2.10
T ₆ -Two hand weedings at 20 and 40 DAS	0.71 (0.00)	0.71 (0.00)	0.71 (0.00)	0.71 (0.00)	0.71 (0.00)	0.71 (0.00)	0.71 (0.00)	0.00 (0.00)	673.61	48703.32	2.81
T ₇ -Control/Weedy check	4.36 (18.67)	4.94 (24.00)	3.83 (14.22)	4.11 (16.45)	3.83 (14.22)	3.33 (10.67)	3.88 (14.67)	2.14 (138.67)	207.78	4060.36	1.21
S.E.(m)±	0.19	0.27	0.24	0.28	0.28	0.25	0.24	0.04	13.53	-	-
C.D. (P=0.05)	0.60	0.84	0.74	0.88	0.86	0.78	0.75	0.14	41.68	-	-
Transformation								Log (x+1)	-	-	-

REFERENCE

1. Anonymous (2011-12). Agricultural Statistics at a Glance, Ministry of Agriculture, GOI (New Delhi), p. 222.
2. Bhadauria, Nisha, Yadav, K.S., Rajput, R.L. and Singh, V.B. (2012). Integrated weed management in sesame {*Sesamum indicum* (L.)}. Indian Journal of Weed Science, 44 (4) : 235-237.
3. C.L.R.S. (2011-12). Commissioner Land Record and Settlement, Gwalior, Madhya Pradesh, p. 87.
4. Nadeem, Muhammad Ather, Abbas, Muhammad, Tanveer, Asif, Aziz, Ahsan, Wasaya, Allah, Babar, Babar Hussain, Rasheed, Muhammad (2009). Comparative performance of weed control options in sesame. *Herbologia*, 10(2) : 85.
5. Vijayalaxmi, G.S., Hiremath, S.M., Hosmath, J.A., Patil, P.L. and Doddamani, M.B. (2012). Sequential application of pre and post emergence herbicides in soybean {*Glycine max*(L.)}. *Karnataka Journal of Agricultural Sciences*, 25 (2) : 262-263.

Publish Research Article

International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished Research Paper, Summary of Research Project, Theses, Books and Book Review for publication, you will be pleased to know that our journals are

Associated and Indexed, India

- ★ International Scientific Journal Consortium
- ★ OPEN J-GATE

Associated and Indexed, USA

- EBSCO
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Database
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database
- Directory Of Research Journal Indexing

Golden Research Thoughts
258/34 Raviwar Peth Solapur-413005, Maharashtra
Contact-9595359435
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com
Website : www.aygrt.isrj.org