ЗЕМЛЕДЕЛИЕ, АГРОХИМИЯ, КОРМОПРОИЗВОДСТВО, АГРОЭКОЛОГИЯ, ЛЕСНОЕ ХОЗЯЙСТВО И ВОДНЫЕ РЕСУРСЫ

UDC 632.954:633.63(574)

Agibaev A.Zh., Alimkulova M.K., Zhunussova A.S., Rayumbekova B.T., Duissenbek Z.S.

Kazakh national agrarian university,
Almaty University of Power Engineering and Telecommunications

THE EFFECIENCY OF THE HERBICIDE HACKER V.D.G. IN THE FIGHT AGAINST ANNUAL AND PERENNIAL DICOTYLEDONOUS WEED ON CROPS OF SUGAR BEET

Annotation

The article presents the results of biological and economic efficiency of Hacker herbicide, V. R. G. (0.12 kg/ha I0,16 kg / ha), which is highly effective against annual and perennial dicotyledonous sugar beet weeds, applied in the phase of 1-3 pairs of real leaves of culture. The biological effectiveness of the herbicide in 20 days after treatment was made against Marie white – 82,6%-88,2%, common cocklebur – for 84.0%-88,0%, field bindweed – 82,2%-86,6%, sow-Thistle field – 73,9%-82,6% and other weeds of 81.3%-85,3%. The increase in the harvest of sugar beet was 26.9-33.1 t / ha.

Key words: sugar beet, weed, white pigweed, common cocklebur, field bindweed, field sow Thistle or sow Thistle, herbicide, hacker, efficiency, productivity.

Introduction

Sugar beet is the most important sugar-bearing culture of the temperate zone. Modern varieties of sugar beet contain 18-20% sugar. Sugar beet loves heat, light and moisture. The optimum temperature for seed germination is 10-12°C, growth and development is 20-22°C. the Seedlings are sensitive to frost (die −4−5°C). The amount of sugar in the fruit depends on the number of Sunny days in August-October. Thediplomat: sugar beet pulp used as cattle feed, molasses - a food product defecation mud - lime fertilizer.Growing sugar beet is a very laborious process. Land before sowing beet requires special training: harrowing, blocking, block, loosening. Terms of irrigation and fertilization should be carried out in strict accordance with the schedule and terms of vegetation, otherwise the yield will be reduced. All these features indicate high costs for the cultivation of this crop.

Materials and methods of research

In 2017 in the South-East of Kazakhstan providentially experiments to test the effectiveness of insecticidal, V. R. g. (0.12 l/ha 0.16 l/ha) against annual and perennial dicotyledonous weeds of sugar beet in phase 1-3 pairs of true leaves of culture. The experiments were laid on the sugar beet crops of Kazakh Sri of arable farming and plant breeding (S. Almalybak, Karasai district Almaty region). The experience was laid in 4-fold repetition, the area of each plot is 25 m2. Spraying of sugar beet crops was carried out in the phase of 1-3 pairs of real leaves of culture, the standard was the herbicide Lontrel Grand 75, VD (0.12 kg/ha and 0.16 kg/ha). In 20 and 40 days after treatment, as well as before harvesting in experimental variants and standards in 4-fold repetition, weed plants were taken into account[1, 2]. Each option and the standards were taken at four sites with an area of 1 m2, where counted all dicotyledonous weeds.

In the experimental plot was observed all the regulations of the cultivation of sugar beet. In the treatment of herbicides used knapsack sprayer OPP-12, flow rate of the working fluid-at the rate of 200 l / ha.

Methods of accounting crop. Harvesting of sugar beet was carried out at the end of the growing season (17.09. 2017) with each experimental plot of 25 m2 in 4-fold repetition [3].

Research result

Today, it's no secret that the cultivation of sugar beet the biggest costs fall on the fight against weeds. This culture is extremely sensitive to the purity of the crop, as it grows very slowly. If 4-5 weeds are located on 1m2 of sowing this crop, it can lead to the loss of the crop by 4-5 t/ha, and more powerful clogging can lead to the complete destruction of crops.In the field experiments the predominant weed plants on sugar beet are annual and perennial dicotyledonous weeds, including: white pigweed (ChenopodiumalbumL.), cocklebur ordinary (XanthiumstrumariumL.), field reel (ConvolvulusarvensisL.), field sow Thistle or sow Thistle (SonchusarvensisL.) etc.

Mar white-stem straight, branched, height 30-120 cm Leaves regular, lower diamond-shaped-ovate. The flowers are collected in spicate inflorescences, individual glomeruli which are located in the leaf axils. Root branched, rod.Rises from March to October. Blooms in July-August. The seeds ripen in August - October.It infests all agricultural crops, mainly technical, and sugar beet.

Common cocklebur - weed annual dicotyledonous plant of the family Compositae (Asteraceae).The stem is straight with a height of 20-100 cm, branched, pubescent. The leaves are alternate, with long petioles. The root is stalky. The depth of germination of freshly ripened seeds is not more than 18-20 cm Shade crops with its powerful appearance, depriving them of light and moisture, is a competitor to crops in the fight for nutrients (nitrogen, phosphorus, potassium and trace elements).

Convolvulus arvensis is a perennial herbaceous composite plant . Stem: creeping or twisted, thin, branched. Length 120 cm Has a deep taproot and numerous root-shoots, covered with buds. Stem leaves: regular, petiolate, oblong-ovate, glabrous. Flowers: blue-purple, with short pedicels, collected in loose, axillary brush on long stalks. One of the main weeds of all field crops. The most common crops are sugar beet and potato.

Field sow Thistle or sow Thistle roots are long, well developed (adventitious buds). The root system of the field axis is characterized by a surface location. The main taproot was lowered into the ground deeper than 50 cm is moving away From him a long horizontal roots that reach one meter or more in length, which lies no deeper than 6-12 see Sakorafa system osota autocallables fragility, precentage small fragments of the roots (up to 3 cm in length) to able to take root and form shoots. The reproduction of this weed in crops is almost exclusively due to the formation of root suckers. The stem is straight. Burdensome weed plant, one of the most painful weeds of sugar beet [4].

Table 1 – Biological efficacy Hacker V. D. G. in the fight against annual and perennial dicotyledonous weeds on crops of sugar beet (Almaty region, S. Almalybak, Kazniizr, 2017)

Experience options	Types of weed									
	Pigweed white		common cocklebur		field reel		sow-Thistle field		Other weeds	
	PCs / m2	daqmage, %	PCs / m2	damage, %	PCs / m2	damage, %	PCs / m2	damage, %	PCs / m2	damage, %
Control (without	5,1	-	2,5	-	4,5	-	2,3	-	7,5	-

processing)1 account										
2 account	8,6	-	5,0	-	7,5	-	4,0	-	10,5	-
3 account	14,8	-	8,8	-	9,0	-	8,5	-	18,5	-
Lontrel Grand 75, V. D. G. – 0.12 kg/ha (reference) 1 account	1,0	80,4	0,5	80,0	1,2	73,3	0,6	73,9	1,4	81,3
2 account	2,0	76,7	1,2	76,0	2,5	66,7	1,4	65,0	2,2	79,0
3account	4,6	68,8	2,8	68,2	3,3	63,3	3,1	63,5	5,5	70,3
Lontrel Grand 75, V. D. G. – 0.16 kg/ha (benchmark) 1 accounting	0,9	82,6	0,4	84,0	1,0	77,8	0,4	82,6	1,2	84,0
2 account	1,9	77,9	1,0	80,0	2,3	69,3	1,2	70,0	1,8	82,9
3account	4,2	71,6	2,4	72,7	3,0	66,7	2,8	67,1	5,0	73,0
Hacker, B. R. G. and 0.12 kg/ha 1 account	0,9	82,6	0,4	84,0	0,8	82,2	0,6	73,9	1,4	81,3
2 account	1,8	79,1	1,1	78,0	2,4	68,0	1,3	67,5,	2,1	80,0
3account	4,4	70,3	2,8	68,2	3,2	64,4	3,1	63,5	5,3	71,4
Hacker, B.R.G.– 0.16 kg/ha 1 account	0,6	88,2	0,3	88,0	0,6	86,6	0,4	82,6	1,1	85,3
2 account	1,5	82,6	0,9	82,0	2,1	72,0	1,1	72,5	1,8	82,9
3account	4,0	73,0	2,4	72.7	2,9	67,8	2.8	67,1	4,9	73,5

Therefore, against the above mentioned weeds was tested herbicide Hacker, B. R. G. (0.12 l/ha 0.16 l/ha). The results of biological efficacy of this insecticide are presented in table 1.

Biological efficiency Hacker, B. R. g. (0.12 kg/ha and 0.16 kg/ha) in the first level of weed infestation, i.e. 20 days after treatment, was against Mary white – 82,6%-88,2%, common cocklebur – for 84.0%-88,0%, field bindweed – 82,2%-86,6%, sow-Thistle field – 73,9%-82,6% and other weeds of 81.3%-85,3%. Materials data of table 1 show that the hacker, V. D. G. its herbicidal property retains quite a long time-the death of weeds before harvesting sugar beet compared to the control was respectively: 70,3%-73,0%, 68,2%-72,7%, 64,4%-67,8%, 63,5%-67,1% and 71,4% -73,5%. These data are close to the results of the standard (Lontrel Grand 75, VD - 0.12 kg / ha and Lontrel Grand 75, VD - 0.16 kg / ha.

The increase in the yield of sugar beet as a result of the use of Hacker, VDG (0.12 kg/ha and 0.16 kg/ha) against annual and perennial dicotyledonous sugar beet weeds in the phase 1-3 of these leaves of the crop was 26.9-33.1 t/ha.it is Necessary to constant that with an increase in the dose of Hacker, VR from 0.12 kg/ha to 0.16 kg/ha there is an increase in the death of weeds, as well as the yield of sugar beet increases (tables 1 and 2).

Table 2 – Economic efficiency Hacker, V.D.G. in the fight against annual and perennial dicotyledonous weeds in crops of sugar beet (Almaty region, Karasai district, Kazniizr, 2017)

Experience options	The harvest of the replications, t/ha				Average yield		
	1	2	3	4	C / ha	in % to control	increase in yield, C / h
Control (without treatment)	341,4	342,2	337,9	332,5	338,5	-	-
Lontrel Grand 75, V. D. G.-0.12 kg / ha (standard)	362,5	359,4	368,4	364,1	363,6	107,4	25,1
Lontrel Grand 75, V. D. G.-0.16 kg / ha (standard)	368,6	371,5	366,6	372,9	369,9	109,3	31,4
Hacker, B. R. G. and 0.12 kg/ha	360,7	372,2	362,8	365,9	365,4	107,9	26,9
Hacker, B. R. G. – 0.16 kg/ha	372,2	375,6	368,1	370,5	371,6	109,8	33,1

Conclusions

Herbicide Hacker, B. R. g. (0.12 kg/ha and 0.16 kg/ha), annual and perennial dicotyledonous weeds of sugar beet showed a high biological effectiveness in the fight with 1-3 pairs of true leaves of culture in the phase when it is applied. The increase in the rate of consumption, Hacker, B. R. G. from 0.12 kg/ha and 0.16 kg/ha and yield increase of sugar beet and increase leads in the death of weeds.

References

1. The guidelines for conducting registration trials of herbicides, defoliants, desiccants and plant growth regulators. Almaty - Akmola, 1997.- S. 32.

2. Rules for registration, production tests and registration of pesticides (agricultural chemicals) in the Republic of Kazakhstan. Astana, 2015

3. *M. Fedin.* Methodology state strain testing of crops. M., //Kolos, 1985. – 263 p.

4. Harmful and especially dangerous harmful organisms of agricultural lands guidelines for counts and identification. Astana, 2009.- S. 310.

Ағыбаев А.Ж., Әлімқұлова М.Қ., Жүнісова А.С., Раимбекова Б.Т., Дүйсенбек З.С.

ҚАНТ ҚЫЗЫЛША ЕГІСІНДЕГІ БІРЖЫЛДЫҚ ЖӘНЕ КӨПЖЫЛДЫҚ ҚОС ЖАРНАҚТЫ АРАМШӨПТЕРГЕ ҚАРСЫ ҚОЛДАНҒАН ХАКЕР С.Д.Т. ГЕРБИЦИДІНІҢ ТИІМДІЛІГІ

Аңдатпа

Мақалада қант қызылшасының 1-3 жұп нағыз жапырақтары шыққан фазасында зиян келтіретін біржылдық және көпжылдық қос жарнақты арамшөптерге қарсы тиімділігі жоғары, тіркеу сынағына берілген Хакер с.д.т.(0,12 кг/га и 0,16 кг/га) гербицидінің биологиялық және шаруашылық тиімділік нәтижесі көрсетілген. Өңдеуден 20 күннен кейін гербицидтің биологиялық тиімділігі ақ алабұтада – 82,6%-88,2%, кәдімгі арамсояуда – 84,0%-88,0%, далалық шырмауықта – 82,2%-86,6%, егістік қалуенде – 73,9%-82,6% және тағы да басқа арамшөптерде – 81,3%-85,3% көрсетті. Қант қызылшасының қосымша өнімділігі 26,9-33,1 ц/га болды.

Кілт сөздер: қант қызылшасы, арамшөптер, ақ алабұта, кәдімгі арамсояу, далалық шырмауық, егістік қалуен, гербицид, хакер, тиімділік, өнімділік.

Агибаев А.Ж., Алимкулова М.К., Жунусова А.С., Раимбекова Б.Т., Дуйсенбек З.С.

ЭФФЕКТИВНОСТЬ ГЕРБИЦИДА ХАКЕР, В.Д.Г. В БОРЬБЕ С ОДНОЛЕТНИМИ И МНОГОЛЕТНИМИ ДВУДОЛЬНЫМИ СОРНЯКЯМИ НА ПОСЕВАХ САХАРНОЙ СВЕКЛЫ

Аннотация

В статье приведены результаты биологической и хозяйственной эффективности гербицида Хакер, в.р.г. (0,12 кг/га и 0,16 кг/га), который высокоэффективен против однолетних и многолетних двудольных сорняков сахарной свеклы, примененный в фазе 1-3 пар настоящих листьев культуры. Биологическая эффективность гербицида через 20 дней после обработки составила против мари белой – 82,6%-88,2%, дурнишника обыкновенного – 84,0%-88,0%, вьюнка полевого – 82,2%-86,6%, осота полевого – 73,9%-82,6% и прочих сорняков – 81,3%-85,3%. Прибавка урожая сахарной свеклы составила 26,9-33,1 ц/га.

Ключевые слова: сахарная свекла, сорняки, марь белая, дурнишник обыкновенный, вьюнок полевой, осот полевой или осот желтый, гербицид, хакер, эффективность, урожайность.

УДК 504.064.36:546.296

Альжанова Л.А., Абдирахымов Н.А.

Казахский национальный аграрный университет

МОНИТОРИНГ СРЕДНЕГО УРОВНЯ КОНЦЕНТРАЦИИ РАДОНА НА МЕСТНОСТИ

Аннотация

В работе представлены данные о среднем уровне концентрации радона на местности в Жамбылской области.

Ключевые слова: средний уровень концентрации, радиация, радиоактивное излучение, радон.

Введение

Как известно, радиация всегда присутствовала в Космосе и на Земле. Эволюция всего живого и человека происходила на фоне периодического усиления радиационного фона [1]. Природный радиационный фон обычно относительно постоянен. Помимо природных существуют еще и техногенные источники радиации и в отличие от других видов загрязнений (химических, биологических), радиоактивные считаются более опасными. Чернобыль, Фукусима и Семипалатинский ядерный полигон являются примерами загрязнения радиоактивными изотопами с длительным периодом полураспада, оставаясь опасными в течение всего времени своего существования [2]. Однако на основной части Семипалатинского ядерного полигона радиоактивные изотопы оказалось промытыми в глубокие подпочвенные горизонты [3].

Человеческая деятельность приводит к перераспределению и концентрированию естественных радионуклидов. Это происходит при добыче и сжигании каменного угля, различных горючих ископаемых, использовании фосфатных удобрений, добыче и переработке руд. Но основную дозу излучения, население Земли получает от природных источников, среди которых газ радон занимает от 30 до 60% радиоактивности выделяемой из земной коры. Радон накапливается в помещениях из трещин и щелей в фундаменте. Различные строительные материалы содержат естественные радионуклиды, при распаде которых образуется радон.

Материалы и методы

В связи свыше сказанным на основании радоновой карты Жамбылской области нами сделан анализ, среднего уровня концентрации радона на местности.

На территории Жамбылской области находятся три объекта бывших уранодобывающих предприятий: Восточное рудоуправление (п. Аксуек), Западное рудоуправление (п. Мирный) Мойынкумского района и урановое месторождение «Курдай» (п. Музбель) Кордайского района. На данных территориях по выполнению Постановления Правительства РК №1006 от 25.07.01 «Программа консервации уранодобывающих предприятий и ликвидации последствий разработки урановых месторождений на 2001-20010 годы» [4] в течение 2001-2008 годов были произведены рекультивационные работы по ликвидации указанных месторождений. Ликвидационные