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SULFUR AND SPIDER MITES

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Abstract. This article provides information on sulfur-containing preparations (lime sulfur solution) and surfactants (surfactants) used against dangerous spider mites on cotton plants. It was found that when these preparations were used in the prescribed doses on the Bukhara-6 variety of cotton, an additional 4.2-4.4 centners of yield were obtained per hectare.

Key words: Cotton, spider mite, SFM, OOQ, sulfur, drug, yield, allatrope, fungicide, insecticidal, powder, nodule bacteria, surfactant.

Agriculture is one of the main sectors in our country, and special attention has been paid to this sector since the independence. The main criteria and norms for the use of harmless chemical preparations, mainly for plant protection, have been introduced. Sulfur is needed for the normal growth and development of plants. Sulfur is a nutrient along with nitrogen, phosphorus, and potassium [1,2,3,4,5].

The continuous use of chemical drugs leads to a sharp decrease in the resistance of spider mites to these drugs and the mass extinction of beneficial insects. Taking this into account, one of the important tasks of today is the production and practical application of selective drugs using local raw materials that simultaneously satisfy the need for sulfur of plants and are highly effective in controlling pests [6,7,8].

In today's modern conditions, the problem of feeding plants with sulfur is one of the most urgent problems, since most of the sulfur in the soil is removed with plant growth, and the rest falls into the lower layers of the earth when the soil is washed away.

Sulfur is necessary for plant growth and development. Compounds such as sulfur, methionine, cystine, and cystine in plants perform various functions and are important in their vital activity [1,2].

Sulfur is of great importance in the oxidation and reduction reactions that occur during protein metabolism in plants. It helps to fix nitrogen from the atmosphere and form nodular bacteria.

The annual replenishment of sulfur reserves to a certain extent through rainwater in the soil has somewhat satisfied the problem of the need for this element in agricultural crops. However, as a result of the leaching of sulfur from the soil and its removal with the harvest, a large amount of it is lost every year. Since the agricultural crops do not have enough compounds of this element, the areas where such crops are grown need to replenish sulfur reserves. Sulfur powder and sulfur lime slurry not only effectively protect agricultural crops from spider mites and diseases, but also accelerate the physiological processes of crops [3,4,5,6].

It is known that sulfur is one of the most widely used and low-toxic drugs in the agriculture of our country. Sulfur and some of its compounds simultaneously exhibit insecticidal, acaricidal and fungicidal properties. At first it was used only as sulfur.

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Currently, it is widely used as a fungicide and acaricide. However, we do not have complete information about its properties. Currently, natural sulfur ores or simple sulfur are isolated from waste gases from factories and factories. In these gases, the element sulfur is in the vapor state. In Germany, simple sulfur is isolated from gases from metallurgical plants and from gases from gypsum processing. Today, large quantities of sulfur are also produced in Uzbekistan and exported to foreign countries.

Ordinary sulfur. In nature, sulfur occurs mainly in two allotropic forms; in the orthorhombic and monoclinic states, and in large quantities in other crystal forms. The orthorhombic form has a specific gravity of 2.07, and evaporates at 112.8 degrees. It is stable at ordinary temperatures, insoluble in water. It is difficult to dissolve in alcohol. The monoclinic form transforms into the orthorhombic form during storage. In addition to the orthorhombic and monoclinic forms, there are other crystal forms, which are also divided into other crystal forms. Monoclinic irregular sulfur is obtained by cooling orthorhombic sulfur in the vapor state. At a temperature below 95.5 ^{0} C , it transforms into orthorhombic sulfur becomes Monoclinic Sulfur vaporizes at 119 ^{0}C.

Comparison weight 1.96. This form above 95.5 ^{0} C to the temperature durable . Ordinary sulfur natural in case sulfur from the mines dig is taken and natural product is considered Natural Sulfur is part of the earth 's crust in parts Volcano magmas in the composition and volcano remains in the case of occurs . Sulfur in MHD mines Karakum , Govurdak , Shorsuv , Crimea , Povolje and other in places available . big sulfur reserves of AQ Sh 's Texas and Louisiana in the States , on the Italian islands of Sicily there is First of all sulfur drug as insecti ts id Crystal L in the form of to powder relatively effective blood detected .

Current in time grind and sieve passed powders as insecticides and fungicides for sale issued Scientists as determined microscopic of the fungus to conidia impact to do , to do how much that it is crushed related it is Sulfur powder how much chopped if fruit so much good will be and plant leaf over rain waters or wind under the influence washed it becomes difficult to leave . If sulfur powders adults are 27 in size if leaves on top of caught there will be no more or far term is not saved . Crushed sulfur contains up to 35% diameter 10 less than particles exists , therefore to crystalline sulfur for relatively fruit is high . That sulfur shapes in the water does not get wet , that's why for them spraying us u lida in use various additions add recommendation will be allowed .

What is sulfur ? Is it lime ? irrevocable Extinguished and chopped sulfur boiled polysulfide cal ts iy harvest will be and this liquid What is sulfur ? Is it lime ? not boiled because . The first time OA was recommended in 1833 for the destruction of the mealybug; it used 4.4 kg of quicklime, 0.27 kg of powdered sulfur, and 0.11 kg of lamp oil. In 1851, an otager gardener first used lime and sulfur in equal amounts in water. This liquid was called "Grison" liquid. This liquid has been widely used in the eastern part of the United States since 1900.

Currently, in many countries, AOCs are sold, which contain from 8% to 25% polysulfide and from 1% to 4% thiosulfate, the ratio of polysulfide to monosulfide is from 3:1 to 4:1, their strength is 20-25 Be (Bome). In the USA, the highest quality AOC sample should contain 30-32% calcium polysulfide. In this case, their relative gravity is 1.283-1.925 (32-33 Be). In Germany, 100 15-18 g in ml of OD polysulfide from 18.5% k am not to be and comparison weight is 1,300 to do need .

Conclusion as that to say possibly in preparation of OOQ their to the composition added additions , boiling duration and to keep deadlines important to the point is calculated to e . If above said to the standards compliance if done preparation of quality OOQ possible [7 , 8].

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Taking into account the above, the most dangerous pest that damages cotton plants is the spider mite. The "common spider mite" species is widespread in cotton fields, and this pest destroys 30-40% of the crop.

F.M. According to Uspensky, if the spider mite falls on cotton in June, it kills 50-60% of the crop, 35-40% in July, and 2-6% in August [9, 10, 11].

In recent years, these indicators have averaged 10-12%, and since the most dangerous pests are multiplying rapidly and causing excessive damage, it is necessary to look for measures to combat them. Taking this into account, four replicates were conducted in one variant for experiments on cotton, which consisted of the following variants: 1. SFM surfactant (1; 1.5% and 2%), 2. OOQ sulfur-lime solution (1% by volume) (comparative variant) 3. When spraying with control water, 600 liters are consumed per hectare. Spider mites and other pests on the lower, middle and upper leaves of each plant taken in the experiment are taken into account. The experiment was conducted on July 19, 2021, during the period of budding of cotton. To study the duration of the drug's effect, spider mites are counted every 5 days. Table 1 shows the average effect of the surfactant on spider mites in field conditions. The 2% concentrate liquid gives the highest efficiency, while the remaining variants have a relatively high efficiency of 89.1% after 20 days of spraying. The highest biological efficiency of the sulfur surfactant against spider mites is 2%, while the biological efficiency of 1% is 71.3% after 15 days of spraying, and 76.6% after spraying 1.5%.

Comparator and The results of the control option are presented in Table 1 . "Zhondor Olimjon land farm" in Khumin Mahalla Citizens' Assembly of Zhondor District, Bukhara Region

Table 1

Effect of surfactant against spider mite

o.	Options	Drug concentration	Average of 100 leaves number of spider mites					For days looking at biological efficiency			
			Until processing	From processing next one days				5	0	15	0
					0	5	0				
	External active substance (SFM)	1%	290	25	2	6	7	37.3	39.8	37.1	38.5
	External active substance	1.5%	281	19	14	1	2	39.9	38.4	36.6	42.6
	External active substance	2%	596	27	66	7	8	68.8	65.2	83.2	89.1
	OO K comparative	1%	267	5	20	56		46.6	43.2	13.1	
	Control water with	-	318	12	55	14	38	-	-	-	

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"Zhondor Olimjon land" farm in Khomin neighborhood of Zhondor district, Bukhara region

Table 2.

No.	Options	Worker liquid norm	1 bowl theft	1 plant of the pelvis number	Plant number	Cotton fertility	Consumption done drugs norm	dditional
	Sulfur (SFM) 1%	400	4.3	7.0	98.9	29.7	4	.8
	Sulfur (SFM) 1.5%	400	4.4	7.2	100.2	31.0	6	.1
	Sulfur (SFM) 2%	400	4.8	6.7	99.7	32.3	9	.4
	Comparative OOQ (1% bome)	400	4.8	6.8	98.9	32.1	1	.2
	Control (water) with)	400	4.0	6.9	101.0	27.9	-	

Cotton to fertility sulfurous external active of the article Creatures district Humin neighborhood citizens at the meeting " Jondori Olimjon " farmer " land on the farm this thing known it happened experience in options fertility difference is 29.7-32.3 cents and additional productivity is 1.8-4.4 t.ha owner it happened So , modern chemical from the drug sulfurous external active article to the spider's web against in the fight effective drug is considered , it tractor with 2% whether as when sowing , 400 l/ ha worker liquid concentration with poisoning impact valid until 25th day goes , lime sulfurous from the broth and (OOQ) is of better quality , therefore for work with 2% sulfur to release external active suspension of substance (SFM) 400l/ ha worker liquid with sprayer recommendation we will do and this drug harmless and economic in terms of is effective .

Conclusion as that to say maybe in the composition sulfur stored OOQ and SFM in preparation their to the composition added additions boiling duration and to keep deadlines important to the point owner h is calculated . If above said to the standards compliance if done quality OOQ and SFM preparation possible .

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