IMPACT: International Journal of Research in Applied, Natural and Social Sciences (IMPACT: IJRANSS)
ISSN(E): 2321-8851; ISSN(P): 2347-4580
Vol. 4, Issue 2, Feb 2016, 59-64

ROLE OF NEW WILD AND RUDERAL TYPES OF G.HIRSUTUML IN COTTON SELECTION

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ABSTRACT

This article studies the donor value of wild and ruderal species ofG.Hirsutum L from Mexico. Showing their stability tovertcillium wilt (race 2) and high technological properties of fiber quality and other economic - valuable attributes.

KEYWORDS: Maturity, Weight Boxes, Species, Variety, Yield, Metric Number, Length, Strength, Verticillium Wilt

INTRODUCTION

Climatic changes during thousands of years, diverse lifestyles of Indians led to the appearance of a wide variety of wild and cultivated forms of ruderal cotton in Mexico. Today it is the main global world's problem and different countries and cotton companies in them try to solve it.

Domestic breeding originally has been built mainly as the Mexican population "Acala". In 1959 already the first time on the basis of wild cotton ssp. Mexicanum (№ 06422 and its equivalent 02 758) belonging to the species G. hirsutumL. We had all varieties of cotton resistant to verticillium the first race of the fungus, which caused great epiphytoties on the fields of Uzbekistan. Grades in the production lasted 10 years. The ability to transfer resistance to wilt from the wild type of the cultural varieties of cotton has caused a great interest in the wild and ruderal forms [1,2]. However, the absence of sufficient evidence of their analysis of the influence of environmental conditions affect the success of their use in breeding. We have filled this gap by studying since 1959. all available wild and ruderal species existing in the collections of UzNIISSAVH, the Institute and the Institute of Plant Genetics and Experimental Biology of Plants ANUz. It was studied stability of them to verticillium wilt race 1 and 2. This enabled the author of this article for the first time to recommend some of them for inclusion in the breeding work, and in particular a kind ssp.punctatum (№ 05152iz El Salvador), which proved to be resistant to race 1 and 2 verticillium wilt, possessing to the same high quality fiber. Recommended samples were used by all laboratories NIISSAVH breeding and breeders of experimental stations in Uzbekistan and neighboring republics (Kyrgyzstan, Tajikistan and Turkmenistan), and on its basis were created all the time sown varieties some of which now occupies a key area in these republics. And today, on this basis, by grade C-6524, 77-Namangan in Uzbekistan occupy the main area of cotton seeds. All over the world the interest in Mexican cotton is not weakened. 1979-1981g already been organized. New expedition to Mexico, which allowed for the first time to collect new wild and ruderal native form growing in arid areas where rain falls 100-300mm a year and spread salt lakes. They have also been studied for the purpose of disclosure of their potential for use in further breeding work. It has been studied more than 105 specimens of these forms that have never been studied and are not used in domestic practice the results of the study and use of which are available in this article.

MATERIALS AND METHODS OF RESEARCH

Some wild and ruderal varieties of GhirsutumL were studied. - Ssp.yucatanense, punctatum, morilli, richmondi, marie-galante (105 samples). Since their photoperiodic plants were studied in terms of Tashkent region (NIISSAV) from April to late October, and also in terms of the duration of daylight 10h closing the plant 10 hours a black film, and in a greenhouse in the autumn and winter when the plants begin to bud , flowering and fruiting due to reduced daylight. This allowed us to study their wider at their Morfobiological features and economically valuable characteristics. Considering that now one of the most urgent tasks is the selection for the immune system and the decisive role in this regard belongs to the original material we have studied varieties for resistance to wilt race 2. Evaluation of resistance to verticillium given by browning vessels stems, observed with their longitudinal section, as well as necrosis of leaves and the number of deformed leaves (general and acute degree of susceptibility was carried out on October 1). Infection in a natural and short days was conducted by inoculation of the fungus Verticillium dahlia kleb (race 2) in the area of the root collar. At the end of the growing period, the samples were evaluated on a slice of the stem.

RESEARCH RESULTS

First samples were studied species mexicanum, from the Yucatan Peninsula in which the plants reached a height of not more than 190, see the forms while conversely variety punctatum represented the sprawling shape with a height of up to 1.5m. 2 and 3, the type of branching. At the same time for the studied species morilli contrary characterized by a tall upright shrub up to 124-140 cm. Wide III type branch. Variety richmondi occupies a very limited area, with spreading forms and very tall to 160-180sm. with type III branch. It highlights the variety of marie-galante monopod which aresympod. They are characterized by strong development of the stem up to 160-180sm.s short monopod.

The most part of represented types is the most late-shape with a long growing season of 140-149 days.

There are precocious type. Of all the most early ripening variety punctatum allocated to the length of the growing season from 122 to 135 days. What should pay attention to. Most of the samples were studied groups small boxed. This figure does not exceed 2 years.

The most large boxed form (4 g) high output (36.0%) were found only among species Latifolium (4,0g). Among other forms of fiber yield does not exceed 30.8%. For the length of the fiber more common long-haired form of the samples race richmondii (№ 437764. 32,0 mm.), Marie-galante (№ 437770-32,2m) and Latifolium № 437 779 - 437 775 32,8mm and -33.6 mm . There were also isolated samples of the fortress and fiber. They were mostly variations samples punctatum (№ 428892, 428877, 428884, 428891) in which this figure depending on the sample reaches a value of 4.5 - 6.7, when the issue of 4,400 metric - 6850.

At the same time samples were met with a good combination of strength 4.5d / s (Latifolium №437779 - 4,5c / g, yucatanense №397909) with the metric number 5900 - 7040 also drew attention that the majority of samples of species morie-galante can produce a metric room even to 10,800. On the possibility of a combination of strength and metric number can be seen from Table 1.

The technological characteristics of new models of species from Mexico

Table 1

№	Room Collection	Type	Theorigin (Mexico)	Metrical Number	Breaking Load(Г/С)	Relative Breaking Load (Г/Стекс)	Fiber Lengh (Мм)
1	3 97503	yucatanense	Yucatan	7040	4.5	31.6	21.7
2	428877	puctatum	Campeche	5660	5.2	29.2	27.1
3	428879	//	//	7300	4.0	29.2	27.1
4	428880	//	//	6700	3.9	26.1	25.3
5	428881	//	//	6810	3.5	23.8	25.0
6	428882	//	//	6200	4.4	27.5	25.3
7	428883	//	//	7170	3.6	25.8	25.0
8	428884	//	//	6850	4.5	30.8	25.9
9	428887	//	//	6970	4.2	29.3	26.6
10	428889	//	Yucatan	7020	4.3	30.2	27.0
11	428890	//	Quintano-ro	7150	3.4	24.3	26.6
12	428891	//	//	6110	4.5	27.5	25.8
13	482894	//	Campeche	7680	3.3	25.3	23.0
14	482905	morilli	Oahaca	6400	4.2	26.9	29.0
15	428896	richmondi	//	6820	4.0	27.3	25.3
16	428907	//	//	6670	4.3	28.7	30.1
17	454537	Maril-galante	//	10800	4.2	26.9	29.0

It is known that the replacement of resistant varieties unstable gives great opportunities to obtain high yields of raw cotton fiber with the best quality. Given the prevalence is currently in the soils of Central Asia race 2 all learning material has been tested on the race. The most interesting in this context the variety shown in Table 2.

The stability of various samples of new species from Mexico to verticillium wilt

Table 2

№	Room Collectiom	Tipe	The Origin (Mexico)	Affectedwilt (Race 2)	
				Total Degree (%)	Severedegree (%)
1	397501	yucatanse	Yucatan	40.0	0
2	397503	//	//	26.6	0
3	397504	//	//	35.4	0
4	397515	//	//	33.0	0
5	454550	//	//	26.7	0
6	397505	mexicanum	//	//	0
7	397506	//	//	38.1	0
8	428878	punctatum	Campeche	32.3	0
9	428883	//	//	33.3	0
10	428887	//	//	31.6	0
11	428893	//	//	30.2	0
12	428894	//	//	34.0	0
13	454500	//	//	0	0
14	454501	//	//	15.3	0
15	454508	//	//	24.0	0
16	454593	//	//	83	0
17	454583	//	//	0	0
18	454585	//	//	0	0
19	428906	morilli	Oahaca	11.1	0
20	454531	//	//	22.2	0
21	454532	//	//	10.0	0

Table 2: Contd.,					
22	397527	richmondi	//	37.5	0
23	454529	//	//	25.0	0
24	454540	//	//	54.0	0
25	454536	Marie-galante	Puebla	23.6	0
26	454537	//	//	30.0	0
27	397536	latifolium	Oahaka	46.6	0
28	437775	//	//	50.0	0
29	437777	//	//	58.3	0
30	428899	//	//	62.5	0

So yucatanense variety that was found only in the Yucatan Peninsula was the most resistant to this race. With the exception of one sample out of ten it is affected only by 26.6% to 40.0% and that only a total lack form with no acute. This trend has occurred and stability among samples collected mexicanum species there. They also were affected by 38.1% to only 50% overall shape. The most widely investigated variety punctatum was collected in various states (Tabasco, Campeche, Quintana Ro and Yucatan). Among this group has the highest differentiation. It draws attention to the fact that some samples of the external manifestation of the Yucatan were perfectly healthy, but were sick when testing shear. Individual samples were amazed how common and acute. However, samples from 35 of the studied quite amazed acute. There were examples of which are worth highlighting. They hit any general or acute (№454538 №454585) or hurt the overall shape of a small extent from 8.3% to 34.0%. The most interesting samples of all species are shown in Table 2. A similar picture we had of morilli varieties which are highly tolerance. In this regard, attracted the attention of the samples for №397527, №454529, №454590 who also didn't have diseased plants acute form and very little amazed acute (10% - 22%). This pattern occurred among varieties richmondi (10,0%). These are examples of such №397527, №454529, №454540s acute affection from 25% to 37.5%. The same was observed in samples of species Marie-galante, who fell ill in the same range, but only acute (25.0 - 37.5%) and with №454536 №454537.

The highest percentage of infected samples as a common and severe form of the samples we observed a variety latifolium from which later sprang directly cultural forms, but among them were also found examples of that, though heavily than other species hurt the overall shape of 46.6% - 52.5% but again no ill acute.

Thus, studies have shown that wild and ruderal species of special unusually polymorphic genetic branch of evolution with exceptional differentiation both in terms of morphology and biological differences.

The data we see is evidence of great potential use of this rich diverse source material which today is badly needed. He is in demand and in terms of their resistance to water scarcity and salinity, which is at this stage of development of cotton industry is very important and urgent.

This has proven our studies on their use in hybridization to create varieties that are resistant to water scarcity and salinity. They were used for each species on the same model with the above species. In particular, this species yucatanse (№397503), punctatum (№428889), richmondi (№428928), morilli (№428905), marie-galante (№45454537) which have the above characteristics.

CONCLUSIONS

Using these samples together at the Laboratory of water scarcity and salinity NIISSAVH possible to create varieties of Gulistan, S5706, S5707, S5708, S5709, resistant to these stress factors. All of them provide fiber IV III, II, I-type complex is resistant to water scarcity and salinity from irrigation B1 - 2 times, depending on the depth of groundwater.

As you can see on the basis of the foregoing used only a small part of the new species from Mexico the use of which has enabled us to solve a number of pressing issues currently facing the cotton growing. The bulk samples with its unique properties remain unused. Therefore, this article aims to draw attention to them in terms of their use in solving the many problems still facing the cotton growing.

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