A Research of determination of effects on morphological, physiological and technological properties of cotton grown under plastic mulch in Çukurova region

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Recent years, climatic changes, effecting fibre quality and yield of cotton plant, have caused the vegetation period of cotton to be short in Turkey. Recently in our region, being late of finishing sipring rainfall and early autumn fall has made planting of cotton. Some cotton growers, repeating sowing of cotton several times because of this problem, were run against in Çukurova Region in 1998 and 1999. Furthermore, rain fall during the harvesting time spoils fibre quality and also causes spoting, contaminating fibre thus decreases the industrial value. This exhibits the there should be some changes in the cotton growing rules. As a result, both growers and industrialists suffer and national fortune is wasted.

Through applying this tecnique used in the world in our country, sowing time will be pulled to a month earlier and by mulching, emerging of the cotton plant will be uniform perfectly and thus the crop will be guaranteed.

By this method, since planting and harvesting times are pulled to a month earlier, both employee of the region will be easier and it will be advantaged in terms of the price because of the crop's going to the market a month earlier. Furthermore, this will be an advantage for the plant from the point of harmful insects and diseases.

Material:

In this study conducted under the conditions of Yüreğir Plain of Çukurova Region, standart cultuvar of the region, Çukurova-1518 and commercial cultuvar, Deltapine 5409 were used

Methods:

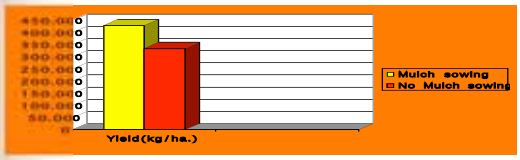
The trial was carried out in the field of Çukuroca Agricultural Research Institute Directorate. the research fields of Çukurova Agricultural Research Institute, located in Dogankent, Adana. The trials were conducted in split split plots design. Main plots were devoted to planting dates (15 Feb., 01 March, 15 March, 01 April, 15 April), cultuvars were distributed to sub-plots (Ç.1518 and Del 5409), and mulch application was applied or not applied in sub-subplots. Seed was applied against diseases and harmful insects. Sowing was done by developed machine and finally, rows were covered by transparent plastic covers. In advance, plastic covers were opened in related with climatic conditions.

Cotton Yield (kg/ha.) :

According to the variance analysis results, in terms of the cotton yield; while the difference betweens sowing with and without mulch, times of sowing and cotton yield were found statistically important, the differences between cultuvars in terms of sowing with mulch and time interaction, sowing time and cultuvars interaction, and sowing with mulch-time-cultuvars interactions were found not to be statistically important.

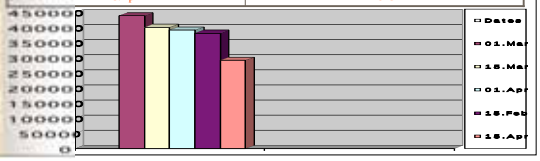
At the end of Duncan Test, carried out to find the statistically importance level of the difference between fiber yields in terms of a decare, two different yield groups were determined, and sowing with mulch was found to be dominant in point of the yield.

MATTER	YİELD (kg/ha.)
Mulch sowing	4286
No Mulch sowing	3342



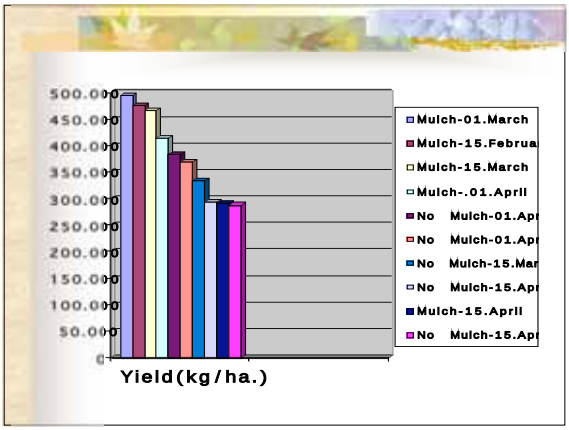
At the end of Duncan Test, carried out to find the statistically importance level of the difference between fiber yields and subjects in terms of a decare at sowing times, three different yield groups were found, the highest unginned fibre yield was obtained from the sowing date of 1st March, and the least fibre yield was obtained from the sowing date of 15th April.

Dates	Yield (kg/ ha.)
01.March	4395
15.March	4013
01.April	3919
15.February	3819
15.April	2925



At the end of Duncan Test, carried out to find the statistically importance level of the differences between unginned fiber yields and subjects in terms of a decare at the interactions of sowing with mulch and times, different yield groups were found, the highest unginned fibre yield was obtained from the sowing with mulch and date of 1st March, and the least unginned fibre yield was obtained from the sowing without mulch and date of 1.April.

Matter and Date	Yield (kg/ha.)
Mulch-01.March	4944
Mulch -15. February	4753
Mulch -15. March	4677
Mulch -01. April	4149
No Mulch -01. March	3846
No Mulch -01. April	3689
No Mulch -15. March	3348
No Mulch - 15. April	2942
Mulch -15. April	2908
No Mulch -15. April	2884



At the end of the study, it was concluded that sowing with mulch effected significantly both unginned yield and pulling to the earlier time the sowing date. Sowings with mulch on the date of 15th February, 1st March and 15th March occured in the same group, and 4944 kg/ha.- 4753 kg/ha. ve 4674 kg/ha unginned yields were obtained, also, on the dates of 13- 24. 08 the best result was obtained with the rate of averagely 73 % at first hand picking.

In the trial, from the sowing without mulch on the generally same date 15th April, 2884 kg/ha unginned fibre yield was obtained, also, according to the date of sowing with mulch of the highest yield, only first hand harvest could be done 30-40 days later (25.09).

At the end of economically analysis, according to the data of the yaers of 2003 the cost of mulching was 170 dolars /ha. This cost was equivalent to averagely 260 kg/ha unginned fibre.