

Project Title : Investigation on Resistance to Trifluraline and Population Activity of Some Weeds on Cotton Fields in Aegean Region

Start /End Date : 1995-1999

Supporting Body : GDAR

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Summary : In Aegean Region (İzmir, Manisa, Aydın, Balıkesir and Muğla) the seeds of Bristly foxtail (*Setaria verticillata*), Awnless barnyardgrass (*Echinochloa colonum*) and fruits of Hearleaf cocklebur (*Xanthium strumarium*) had been collected between the years of 1995-1997 in total 27 cotton fields.

In 1996 the studies for determining the resistance had been conducted with seeds of Bristly foxtail (*Setaria verticillata* collected from Aydın (Merkez- Nazilli), İzmir (Bergama, Menemen; Bornova) provinces and with seeds of Awnless barnyardgrass (*Echinochloa colonum*) collected from Muğla (Dalaman, Kemer, Fethiye) provinces. As a result of investigation of radicle and shoot length growth of this two weeds species in the dark room at 24 °C and in the room conditions at 0.05; 0.1, 0.2; 0.3; 0.4 and 0.6 ppm concentrations of trifluralin it was determined that with the increase of the trifluralin dosages radicle and shoot length growth was decreased.

In 1997 the studies for determining the resistance had been conducted with seeds of Bristly foxtail (*Setaria verticillata*) collected from Nazilli, Bergama, Menemen and Balıkesir provinces and with seeds of Awnless barnyardgrass (*Echinochloa colonum*) collected from Muğla (Dalaman, Kemer, Fethiye) provinces . As a result of investigation of radicle and shoot length growth of this two weeds species at 30 ° C and 35 ° C concentrations of trifluralin it was determined that with the increase of the trifluralin concentrations radicle and shoot length growth was decreased, but this decrease was not in right proportional rate.

In 1998 the studies for determining the resistance had been conducted with both overwintered in natural condition seeds of Bristly foxtail (*Setaria verticillata*) collected from Aydın, Nazilli, Bergama, Menemen and Balıkesir(Altınova) provinces and Awnless barnyardgrass (*Echinochloa colonum*) collected from Aydın Dalaman and Kemer provinces in 1997. For investigation of radicle and shoot length growth of this two weeds species at 30 ° C and 35 ° C temperature, in dark and light conditions, and in water as a control and at 0.05; 0.1, 0.2; 0.3; 0.4 and 0.6 ppm concentrations of trifluralin pregerminated seed was used. It was determined that with the increase of the trifluralin

concentrations generally the radicle and shoot length growth was decreased but at 30 o C temperature at Menemen radicle and in Aydın shoot length growth had not inhibited.

With obtained result there is no resistance in Bristly foxtail (*Setaria verticillata*) Awnless barnyardgrass (*Echinochloa colonum*) on cotton areas of Aegean region.

The another aim of this research the monitoring of population dynamics of Bristly foxtail and men Seyrek y and Manisa-Muradiye provinces. Bristly foxtail was found only in Seyrek y cotton fields where it germinated after first irrigation and before harvest its density was 273 per square meter.

The depth studies carried out in Institute garden with Hearleaf cocklebur fruit sowed to 0; 5; 10; 15 and 20 cm soil depth showed that Hearleaf cocklebur fruit can germinated from 15 cm soil depth, but with increase of depth the germination rate decreased. It was determined 2,2 to 5,5 % capable to germinate, while this rate was 79-93 % for mature plants.