



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

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Project Title
Can a Homemade Natural Herbicide Made out of Mistletoe Berries Control Unwanted Daisy Growth?

Abstract

Objectives/Goals
 My objective is to see if a homemade natural herbicide, can be used to help control unwanted daisy growth.

Methods/Materials
HERBICIDE MANUFACTURE:I blended mistletoe plants berries,w/1 gal.of soft. water to liquefied mixture(MTH)to meet exper'tal needs. I put 2 Tbsp liq. Soap w/ MTH in spray bottle, for surfactant.
HERBICIDE APPLIC#N:. In 4 pots I used seeds to test my herbicide#s pre-emergent treatment. In 4 pots Daisy plants tested my post emergent treatments. In pot 1&2 I put Daisy seed & grass seed. I applied the Mistletoe herbicide to the first pot PE1 & softened water to the second pot PE2. PE2 was the control for PE1.In pots 3 & 4,I put Daisy seed,no grass seed. I applied the Mistletoe herbicide to the 3rd pot PE3 & softened water to 4th pot PE4. PE4 was the control for PE3. In pots 5,6,7,8 I put Daisy plants, ea.w/ 10 flowers. I sprayed herbicide on the flowers & leaves in Pot (C1:contact herbicide tx.). I mixed the herbicide into the soil of Pot 6(SA1: soil applied tx.). In Pot 7 I did whole plant herbicide applica#n SY1:systemic tx.). In Pot 8: Cont., the Daisy got soft.water as my control for 1,SA1,&SY1. For 18 days, results were watched & recorded. **Materials:**Gloves,Pens&markers, Plastic Spray Bottle, Camera & Film, Scissors,Blender,Gallon Containers,Soften Water,8 Flower Pots,Mistletoe Berries,Potting Soil,MeasuringCup,Tablespoon, Large bowl,Labels,Ruler,Daisy Seed,Pencils,Grass Seed,Paper,Liquid Soap, Display Board.

Results
 My observations revealed the contact herbicide treatment as most successful against Daisy weeds killing 9 of 10 flowers. The soil applied treatment worked moderately well:killing 4 of 10 flowers &3 leaves.The systemic herbicide tx.was the least effective,killing only 2 of 10flowers, 2 leaves.

Conclusions/Discussion
 Mistletoe plants can be an effective natural herbicide on Daisies. Contact, systemic & soil applied treatments were effective, contact herbicide was most effective. I feel this resulted from its direct impact on plant parts cells. A reduced concentration of toxin reached the cellular level in the systemic & soil applied treatments thereby having a reduced ability to inhibit cell growth. I concluded that the mistletoe herbicides# inhibition of pre-emergent Daisy Seeds growth came from the Grass Seeds presence & neutralization of the mistletoe 's lectin/alkaloid toxin on the Daisy seeds, while providing nutrients aiding the growth of Daisy Seeds.

Summary Statement
 To see if a homemade natural herbicide, can be used to help control unwanted daisy growth.

Help Received
 My mother and father helped me take pictures for my board. My neighbor helped me procure Mistletoe Berries.