Is seed set in white cockle (*Silene latifolia* Poir.) limited by insect pollination?

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Introduction

- Can the invasive ability of dioecious plants be limited by pollination?

Important Points

- White cockle has a dioecious breeding system
  - Separate male and female individuals
- Night-blooming characteristic (Young, 2002)
- Important perennial weed in forage and annual cropping systems (McNeill, 1977)

Conclusions

① Is white cockle exclusively insect pollinated?

→ White cockle is predominantly insect pollinated- some wind

② Is white cockle pollinated at night?

→ Most pollination of white cockle occurs at night

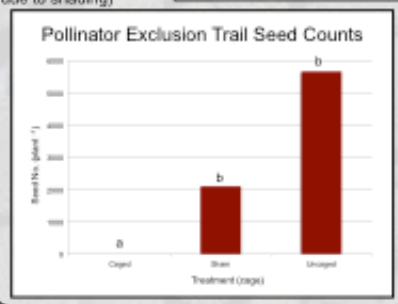
③ How far do insects carry pollen from male flowers to female in white cockle?

→ Up to 128m and possibly further; however, seed set is limited by distance of female from pollen source- limited invasiveness

- The invasive ability of dioecious weeds is at a considerable disadvantage when seed production is the predominant method for reproduction

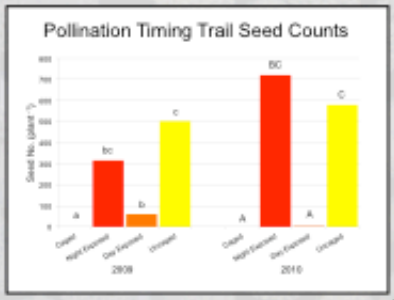
① Is white cockle exclusively insect pollinated?

- Female plants were randomly selected from a naturally occurring population of both male and female individuals then flagged
- Cage treatments were applied to single female individuals
- Treatments applied were caged, uncaged, and sham caged (sham cages were left north face open to account for yield loss due to shading)



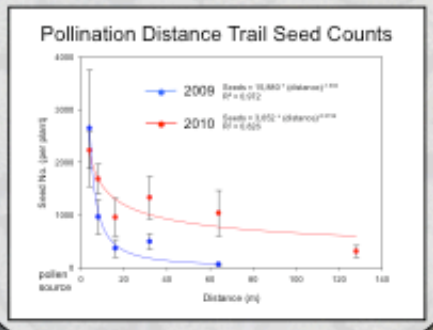
② Is white cockle pollinated at night?

- Female plants were grown in a controlled growth environment then introduced into a naturally occurring population of both male and female individuals outdoors
- Treatments were applied to single female individuals
- Treatments applied were caged, day caged, night caged, and uncaged



③ How far do insects carry pollen from male to female flowers in white cockle?

- Female plants were grown in a controlled growth environment then introduced adjacent to a naturally occurring population of both male and female individuals outdoors
- A 128 metre linear interval was measured moving away from the pollen source
- Five females were transplanted at each of six distances (4, 8, 16, 32, 64, and 128m) along the linear interval



References

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