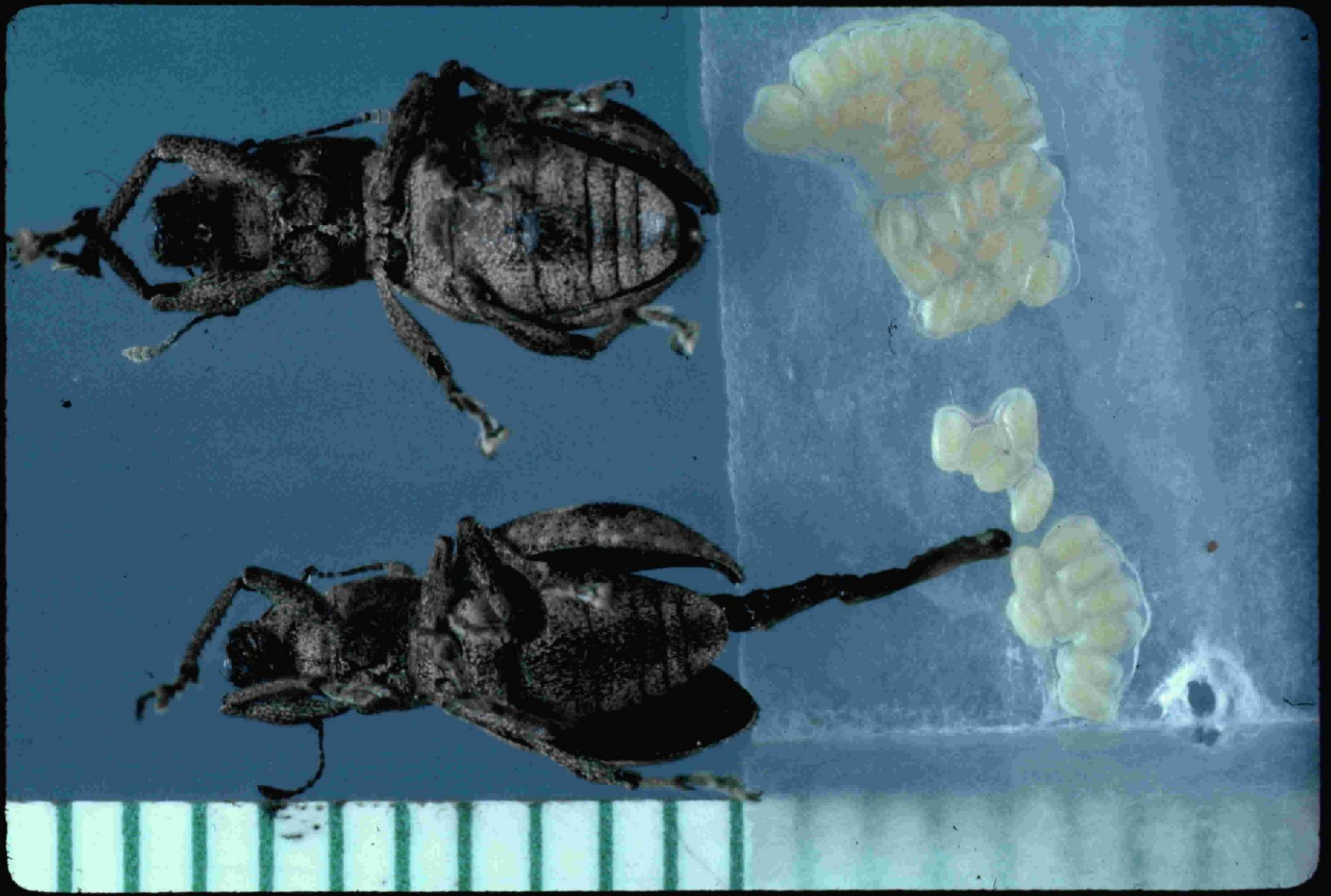


Testing New Microsprinklers for Resistance to Clogging Due to Fuller Rose Beetle Egg Laying

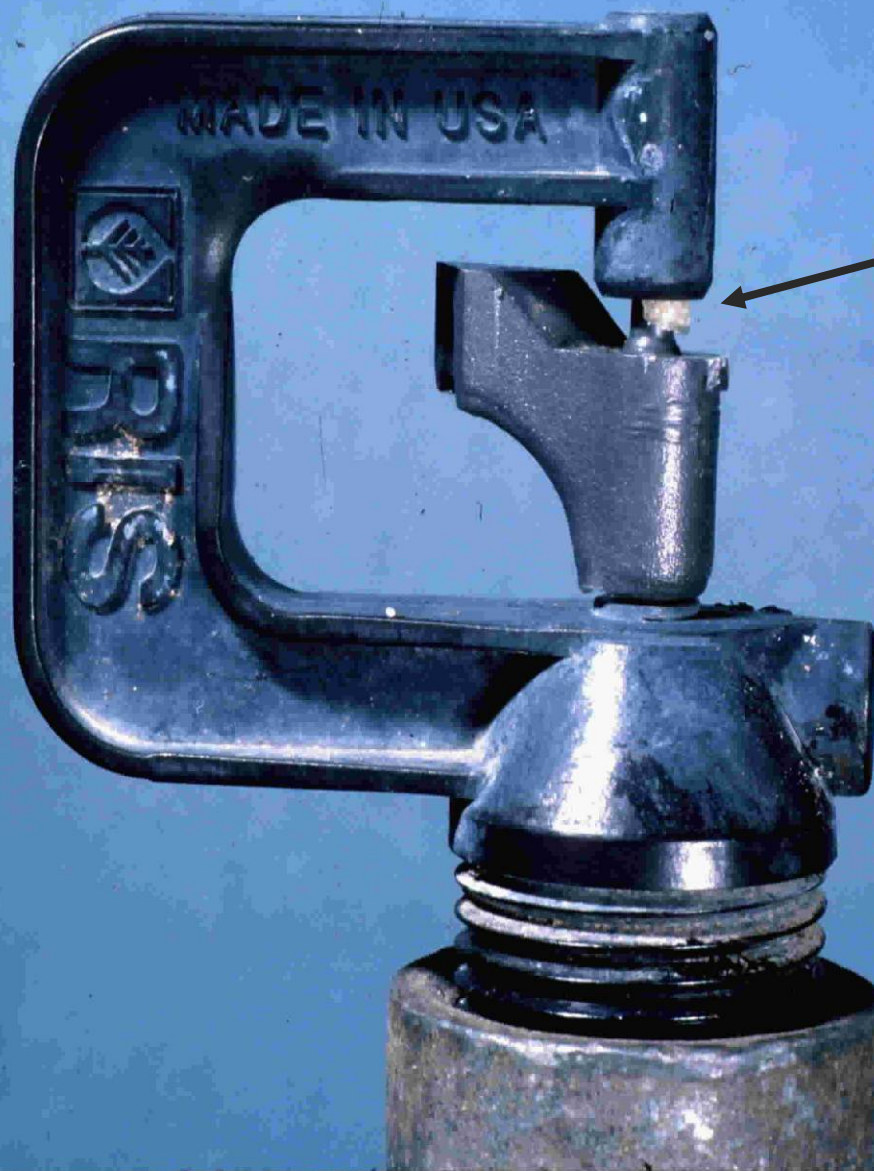
Roger Duncan
UC Cooperative Extension
Stanislaus County

Adult Fuller Rose Beetle





Fuller rose beetle with extended ovipositor



Egg Mass

Egg masses prevent
microsprinkler from opening
fully and prevent them from
spinning



Fuller Rose Beetle Biology

- Snout Beetles (not weevils)
- *Nocturnal*
- *One generation per year*

Fuller Rose Beetle

- *Adults can be present at any time but most adult activity is from August - October*
- *Adults cannot fly*
- *All adults are females*



Fuller Rose Beetle

- *Adults live 2 - 4 months (?)*
- *Feed on leaves - results in notched leaves in lower canopy of trees*
- *Must feed for 1-2 weeks prior to egg laying*



Leaf feeding by Fuller rose beetle

Fuller Rose Beetle

- *Lay eggs parthenocarpically (no mating)*
- *Search out protected crevices (sprinklers!)*
- *Eggs are laid in a sticky mass of 10-60*
- *Eggs hatch in about 3 weeks*

Fuller Rose Beetle

- *After hatching, larvae drop to ground*
- *Located in surface foot of soil*
- *Feed on roots in soil for 6-10 months*
- *Pupate in soil for 1-2 months*



Recently hatched FRB neonates next to tip of pin



4 month old FRB larva next to neonates



FRB pupal cell

Chemical control has not been
highly successful

Best chance at long-term success is
finding FRB-proof sprinkler

Bowsmith Fan-jet 'plus'



'Eliminator' from Naan Dan Jain

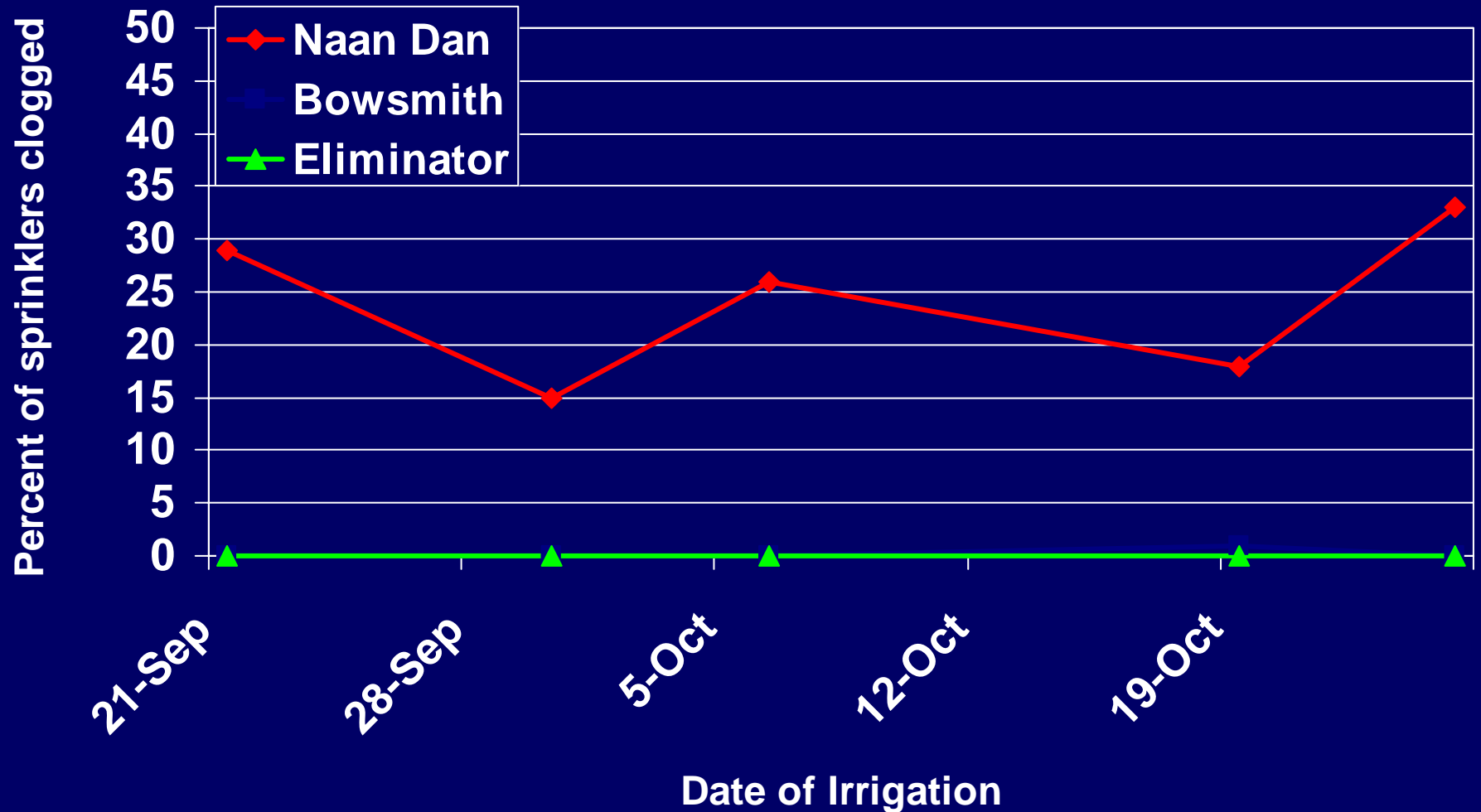




Compared
clogging of the
Eliminator and
Bowsmith fanjet
to Larry Carter's
"old" NaanDan
micros

Percent Clogging of Microsprinklers due to Fuller Rose Beetle

Roger Duncan, UCCE Stanislaus County



Summary

- On average, about $\frac{1}{4}$ of Larry's "conventional" older Naan Dan microsprinklers were clogged each time he irrigated in September and October
- During the same time, one Bowsmith clogged (not due to FRB) and no Eliminators clogged

Contact Information

- Bowsmith Fan-Jet
 - Bowsmith (800-269-7648)



- NaanDanJain Eliminator
 - Point Source Irrigation; 877-228-9774

