Bringing in the Bugs

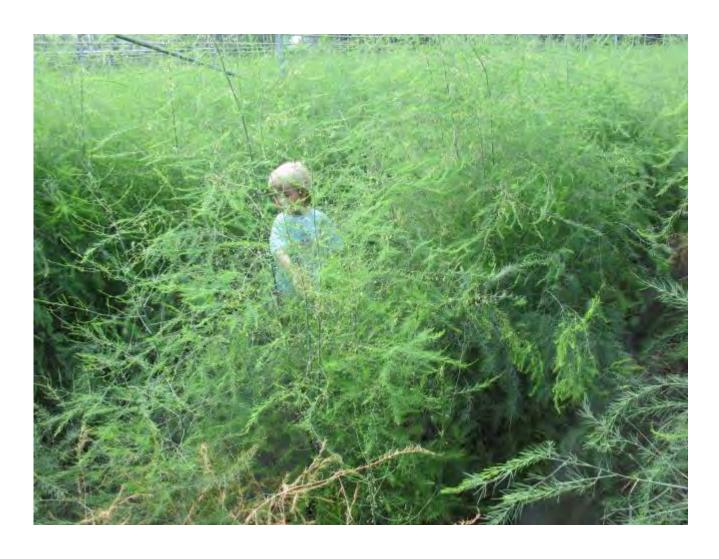
How can local biodiversity be harnessed in our greenhouses?

Peter Dollimore – Hankham Organics



Tetrastichus Asparagi

Parasitoid wasp of asparagus beetle, Crioceris asparagi.



Mature Asparagus Jungle



Tetrastichus Asparagi

Parasitoid wasp of asparagus beetle, Crioceris asparagi.



Cotesia glomerata

Parasitoid wasp of large white (butterfly) larvae *Pieris* brassicae



Cotesia glomerata



Cotesia glomerata



Cotesia glomerata

Felix L. Wäckers

- Optimizing field margins for biocontrol services
- Assessing the suitability of flowering herbs as parasitoid food sources
- Nectarivory by the plant-tissue feeding predator
 Macrolophus pygmaeus Rambur
- A comparison of nectar- and honeydew sugars with respect to their utilization by the hymenopteran parasitoid Cotesia glomerata
- Effects of flower attractiveness and nectar availability in field margins on biological control by parasitoids



Flowering coriander next to red russian kale



Flowering coriander next to red russian kale



Flowering rocket next to tomatoes and onions May 2014



Flowering rocket next to perpetual spinach (leaf beet) – May 2013



Hoverfly - Syrphidae spp



Hoverfly larvae amongst aphid



Hoverfly larvae amongst aphid



Hoverfly pupae



Spring greens with poached egg plant Limnanthes douglasii



Spring greens with poached egg plant Limnanthes douglasii



Predator / Nectar strip

Golden Rod (Solidago), Milfoil (Achillia), Marigold (Calendula), Borage, Nasturtium, Oregano, Thyme, Marjoram





Ladybird (Coccinella 7-punctata) larvae feeding on Yarrow Aphid (Macrosiphoniella millefolii)



Ladybird larvae feeding on Yarrow Aphid



Collecting ladybird larvae from perpetual spinach in late April





Ready for relocation

BioGreenhouse - WG3: Crop Health

- functional diversity of natural enemies,
- food sprays,
- banker plants,
- habitat and climate management, and
- induced plant resistance



Aphidius colemani – parasitoid wasp

Lays young into Aphis gossypii and Myzus persicae



A. Colemani ovipositing into Aphid



Parasitized Aphid



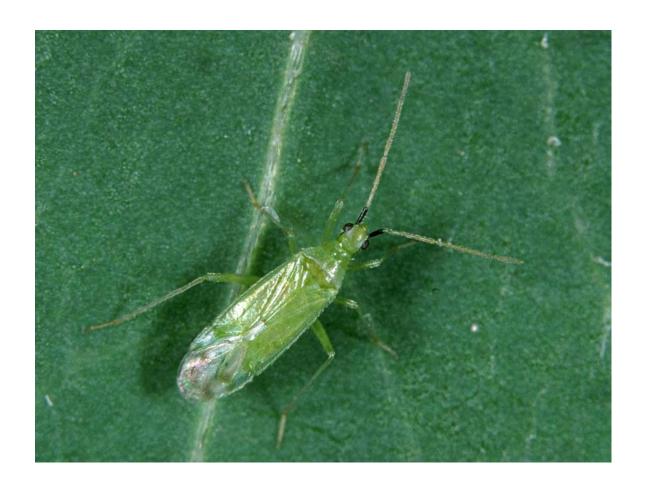
Flowering coriander....again!



Nectar = Energy



Macrolophus caliginosus



Macrolophus - Adult



Macrolophus - nymph



Calendula officinalis

Self seeded, Winter 2014-15



Outside – hedges and fields are more opportunities to improve biodiversity!



Cornfield annuals sown with clover/grass fertility building phase.



Corncockle, corn marigold, cornflower, poppy, corn chamomile





Phased cutting in strips



It's not just about the invertebrates y'know!