Podsucking bugs (green vegetable bug, redbanded shield bug, brown bean bugs, brown shield bug) in soybean, mungbean, navy bean, adzuki bean

	Pre-plant	Seedling and Vegetative	Budding/ Flowering	Podset	Podfill	Podripening/Harvest
Signs	Sequential plantings of summer legumes allow podsucking bugs to move progressively from early to later plantings - building to very high levels in later plantings.		No damage unless very high populations (>10 adults per m^2).	No damage unless populations are high. Damage will not be visible during podset.	**Critical stage for bug damage.** Deformed & shrivelled seed Reduced yield	Crops still at risk until pods are dry. Blemished seed is difficult to grade out and results in downgrades in quality. Damaged seed is also prone to weathering.
Monitoring	Check for overwintering adults in preceding season's crop and weed hosts		Monitor with a beat sheet twice weekly early to mid-morning (5 samples within 20 m radius). Repeat at 6 random sites as nymphs tend to be clumped. Also look for egg rafts on plants, and beneficial insects. Bugs can be found basking in the sun in the top of the canopy early in the day.			Pods most at risk are those containing well developed seed
Beneficials	A number of beneficals attack pod sucking bugs but rarely regulate populations. • *Trissolcus* wasps parasitize bug eggs • *Trichopoda* flies parasitize GVB adults & large nymphs. • Bug nymphs are attacked by ants, spiders and predatory bugs					
Cultural control	• Avoid sequential plantings. • Plant away from other hosts e.g. cotton, tomatoes, pecans • Eradicate weed hosts prior to planting		• Minimise overwintering hosts • Late summer plantings are at greater risk than spring planted crops, particularly in southern Qld and in NSW.			Set harvester up to screen out damaged seeds
Thresholds	Familiarise yourself with bug thresholds.	High numbers of young nymphs inflict very little if any damage until podfill.	Thresholds are based on seed quality and are typically low (<1bug/m^2), and are expressed in green vegetable bug equivalents (GVBEQ). Other podsucking species are converted to GVBEQ and totalled. • Maximum seed damage limits are usually 2% • Threshold ranges from 0.3-0.8 GVB/m^2 depending on crop size (seeds/m^2). Podsucking bug threshold at podfill (GVB/m^2) = number of seeds per square metre*0.25/1000. The more seeds a crop sets, the higher the bug threshold as damage penalties are based on % seed damage.			

Pesticides		Delay spraying until podfill, as no selective options are available Unless very high numbers, spraying before podfill has no economic benefit. Also, at flowering and early pod-set, many immature bugs are in the egg stage which is not well controlled by insecticide Delay bug sprays to conserve beneficials that attack podsuckers, helicoverpa, mites and whitefly. The addition of 0.5% salt (Na/Cl) to tank mixes of deltamethrin will control 60% of red banded shield bugs which are not controlled with the chemical alone.	Control at early to mid-podfill – Go at early podfill if high populations (>4 adults/m^2) Soft options for sucking pests are limited	If high sustained bug pressure, a late spray may be necessary but observe pesticide withholding periods
Considerations	To reduce the risk of flaring silverleaf whitefly, mites and helicoverpa, delay spraying for podsucking bugs until early podfill The addition of 0.5% salt reduces the need for full rates of insecticides and is less damaging on beneficials			
Communication	Good communication and sharing information with agronomists and other growers may provide initial indications of podsucking bug presence. Area wide coordination of management methods is useful, particularly weed control, crop selection, adjusting planting dates and spray management plans. Industry publications provide up to date information about regional pest issues			