

## Scenario 2<sup>nd</sup> Assessment

### Farm enterprise data:

Victoria, Wimmera. Winter cropping wheat in rotation with lentil.

Cropping area: 1250 ha; Climate: winter dominant rainfall; 600 mm average annual, very variable

Soil type: cracking clay vertisol

Enterprises: grain production for wheat and lentils

The farm had grown wheat each winter season for many years, and only recently moved to a rotation with lentil as a legume. Summers are fallowed or grazed by sheep. There seems to be a serious weed problem developing with annual ryegrass (*Lolium rigidum*) becoming resistant to a number of herbicides used previously such as Group A ('fops') and later also Group A ('dime'). Recently, there are also clear indications of glyphosate resistance in *Lolium rigidum* populations on the farm. Wild oats (*Avena fatua*) also seems to become a resistance problem. There are no records of treatments from the previous owner and it is likely that the same herbicides were used for too long.

The lentil crops had been damaged by Lucerne seed moth (*Etiella behrii*) and once also significantly by native budworm (*Helicoverpa punctigera*). Virus disease was occasionally observed in wheat crops (barley yellow dwarf virus – BYDV), and leaf rust (*Puccinia triticina*) seems to be an occasional problem.

Average wheat grain yields on this farm were 3.5 tons per ha and lentil 2.1 tons per ha.

### The specific brief for your consultancy report:

The farm has a new owner who would like to continue with wheat – legume rotations and asks you to advise on an appropriate crop protection plan. The plan must address the resistance developments observed in weeds and also give recommendations on the pests and diseases recorded on the farm previously. The new owner would like to see an integrated management approach to minimise chemical use, as she is concerned not only about the enterprise sustainability, but also about environmental and health effects of agrochemicals.