

## FIELD INFESTATION OF THE RICE WEEVIL IN WHEAT

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### SUMMARY

A preharvest sampling of grain from wheatfields over most districts of the Darling Downs of Queensland and part of the adjacent Lockyer district established that the rice weevil (*Sitophilus oryzae* (L.)), is present in wheat crops in the field and infests the grain prior to harvest.

### I. INTRODUCTION

The rice weevil (*Sitophilus oryzae* (L.)) is a major pest of stored wheat. The origin of the infestation in storage is usually attributed to lack of hygiene in or near the storage buildings or in harvesting and handling machinery.

The possibility of introducing the weevil from the field into storages with the grain has not been given serious consideration in Queensland, although field infestations in summer crops such as sorghum and maize are of common occurrence. The present survey of wheatfields in southern Queensland therefore was undertaken to investigate the incidence of field populations of the weevil in wheat. Such infestations would explain deterioration of stored grain in situations where the origin of the problem is unlikely to have been faulty hygiene.

### II. METHODS AND MATERIAL

Determination of the presence of the weevil in the field involved the collection of samples of wheat heads into insect-tight jars. Each sample comprised approximately 200 heads of wheat taken at random from a site within a paddock on each farm just prior to harvest. These were examined after being held in the laboratory for a period of 3 months to allow for the development of any eggs or immature forms to the adult stage.

The districts involved were widely spread over most of the Darling Downs, adjacent to roads radiating from Toowoomba to places such as Jandowae, Dalby, Cecil Plains, Millmerran, Leyburn, Clifton and Warwick, and included parts of the Lockyer Valley. Sampling was carried out over two seasons, from October 27 to November 27, 1967, and from October 30 to November 7, 1968. In 1967, 157 samples were taken, each representing a different site, and in 1968, 163 samples were taken.

### III. RESULTS

The examination showed that 14 of the 1967 samples and 28 of the 1968 samples were infested with the rice weevil. In most of the infested samples, only a few (less than 15) weevils were bred but some samples contained more than 100 weevils.

The districts from which infested wheat was obtained were as follows:

1967: Biddeston, Bongeen, Brookstead, Cambooya (2), Finnie, Jondaryan (3), Mywybillia, Nangwee, Oakey, Pampas and Westbrook.

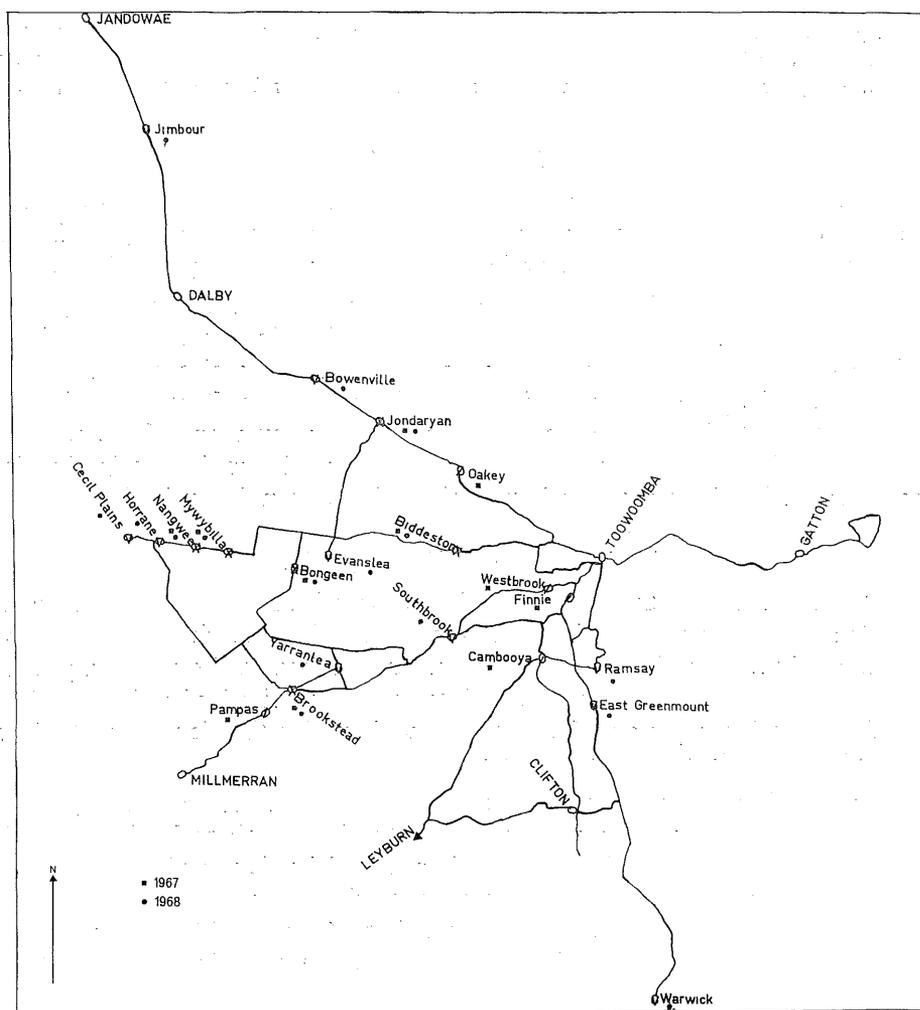


Fig. 1.—Centres from which infested samples were obtained.

1968: Biddeston, Bongeem (3), Bowenville, Brookstead (5), Cecil Plains, Greenmount East, Evanslea (2), Horrane, Jimbour (2), Jondaryan (2), Mywybilla, Nangwee (2), Ramsay (2), Southbrook, Warwick and Yarranlea (2).

A map showing the area covered in the collection of samples and the centres from which infested samples were obtained is given as Figure 1.

#### IV. DISCUSSION

The basic assumption in the sampling procedure was that, if sufficient samples were collected over a wide enough area, an infestation of the weevil in the field would be discovered if such existed. The sampling unit of 200 heads was small but proved sufficient for the determination of the presence of infestation in field samples. It was not intended to indicate the extent of infestation within a particular paddock or on any one farm. While it is not suggested that any significant damage is caused to the grain in the field, the number and the distribution of the samples which yielded weevils show that in each year a general low level of infestation in the field may be accepted as normal.

The introduction of the pest with the grain to storages constitutes an important problem, and emphasizes the need for the application of an effective grain protectant at, or as soon as practicable after, the placement of the grain into storage.

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