

A versatile seeder for sowing conventionally tilled or direct drilled experimental plots

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Field experimentation in agronomy is often constrained by limitations of sowing machinery. The desire to conduct experiments under either cultivated or direct drilled conditions, with a range of crop and pasture seeds sown at precise rates and with good depth control, into various length plots, with variable row spacings, varying fertilizer rates, etc. necessitated us designing a seeder to cope with such diverse needs. A diagram of the machine developed is shown below in Fig. 1.

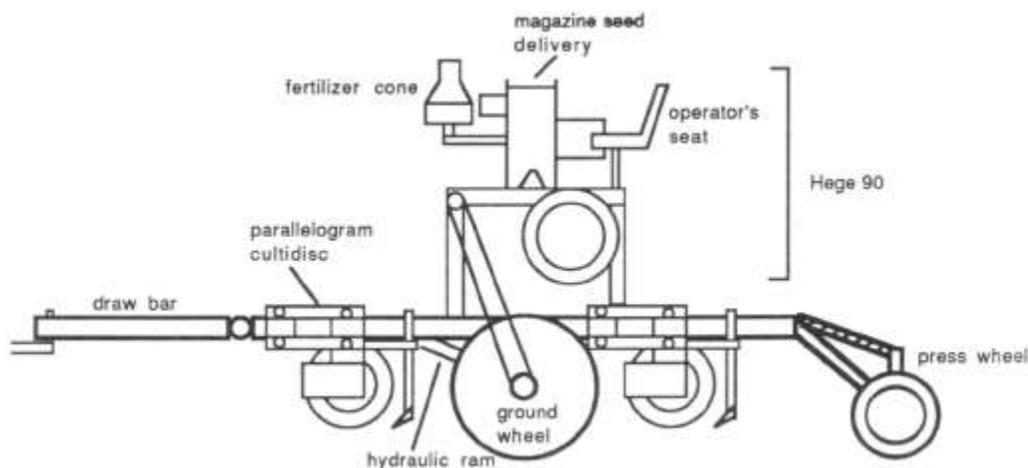


Fig. 1. Diagrammatic representation of research plot seeder comprising a direct drill frame carrying a Hege 90 plot seeder and fertilizer cone (not drawn to scale).

The machine consists of:

- a rugged direct drill frame (constructed by AgMurf Engineering, Dubbo, NSW) which has two gangs of 3 parallelogram cultidiscs (Janke Bros., Mt. Tyson, QLD.) with a third cross bar at the rear which carries three double press wheels (Janke Bros.). The tines can be lifted clear of the ground using hydraulic rams which adjust the height of the ground contact wheels in relation to the direct drill frame.
- a complete Hege 90 plot seeder (Hege Australia, Walpeup, VIC.) (which can still be used as a 3 pt. linkage machine for sowing cultivated plots), with its 6 seeding cones and magazine seed delivery system, is mounted on superstructure above the direct drill frame. When mounted on the direct drill frame, the drive for the Hege 90 is taken from the direct drill ground wheel which is geared to move the Hege 90 seeding cones at the same rate as the Hege 90 ground wheels.
- a single fertilizer cone with a 6-outlet spinner/divider (AgMurf Engineering) has been added to the Hege 90 to permit the distribution of accurately controlled quantities of fertilizer which are then combined with the seed at the sowing boots.

This machine has been named "Spronto" (abbreviation of Sperontotherion — creature that sows seeds). It was constructed using funds provided from the AMLRDC, the AWC, and the Department of Agronomy and Soil Science, UNE. Much of the final construction and assembly was carried out within the Department of Resource Engineering, UNE.