A new herbicide (GF-839) for long-term control of annual and perennial broad-leaved weeds in grassland

S.A. Egerton, A.D. Bailey and L.A. Brinkworth
Dow AgroSciences, Latchmore Court, Brand Street, Hitchin, Hertfordshire, SG5 1HZ, UK, Email: segerton@dow.com

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Introduction The new herbicide GF-839 is a combination of a new active substance aminopyralid and the fully approved active substance fluroxypyr in the quantities 30 g ae/l aminopyralid + 100 g ae/l fluroxypyr. It is an emulsion, water in oil formulation (EO), and will be sold as a foliar acting herbicide for the long-term control of annual and perennial broad-leaved weeds in grassland. Globally aminopyralid can be used for weed control in range and pasture situations and plantations; in addition, uses in oilseed rape and cereals are also being explored. Aminopyralid is the most active halopyridine yet discovered and as a synthetic hormone it poses a low risk of resistance. *Rumex obtusifolius* (broad-leaved dock), *R. crispus* (curled leaf dock), *Cirsium arvense* (creeping thistle), *C. vulgare* (spear thistle), *Urtica dioica* (common nettle), *Ranunculus repens* (creeping buttercup), *Taraxacum officinale* (dandelion) and *Stellaria media* (common chickweed) are all pernicious, persistent weeds of grassland in Europe. If left unchecked they can lead to significant reductions in sward quality and quantity as well as spreading to neighbouring areas. In the UK 1.1M ha of grassland are infested with thistles, and 400,000 ha with more than 1/m^2, equating to a potential loss of 1Mt DM / year. Docks at an infestation level of 10% cause potential silage losses of 10%. There are currently various products on the market for control of these weeds but GF-839 differs in that it is the first new compound to be developed primarily for the grassland market for over 30 years, and offers reliable long-term control of all of these weeds, in combination with good grassland management practice, whilst also offering a high degree of selectivity to grass.

Results During 2002 and 2003, 125 trials were carried out in established grassland (grass more than 1 year old) to evaluate the spectrum of activity and dose rate of GF-839. All field trials were carried out in accordance with EPPO guidelines. In season control of all target weeds from 2 l/ha GF-839 was over 95%. Figure 1 shows that long-term control (12-18 months after application) of perennial weeds was also excellent compared to market standards.

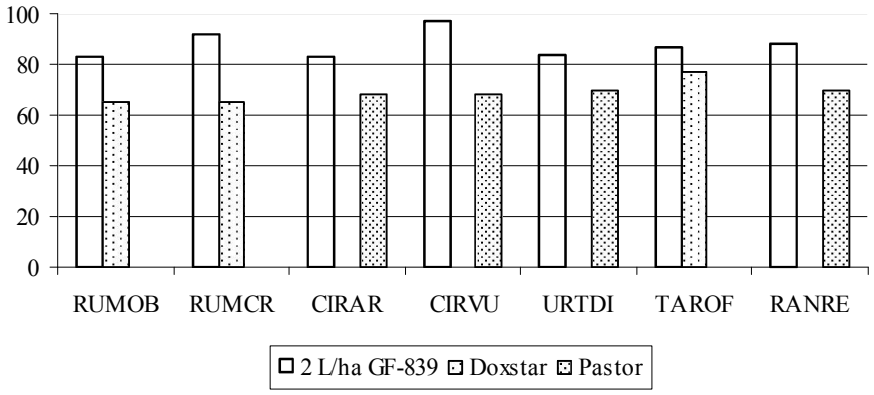

Figure 1 Long term percent control of Perennial weeds in grassland

Doxstar contains 100 gae/l fluroxypyr + 100 gae/l triclopyr. Pastor contains 50 gae/l clopyralid, 75 gae/l fluroxypyr + 100 gae/l triclopyr

Yield and quality data from 20 trials in established grassland and new leys (which included the label rate of 2 l/ha and the double rate of 4 l/ha of GF-839) demonstrated that GF-839 may be used on new or established grass from the three true leaf stage. Phytotoxicity data from 145 trials showed no serious long-term injury in any trial and data from 6 species screens on 14 of the most commonly sown and invasive grass species in the UK showed that GF-839 at the label rate and 2n rate is safe to apply to new and old grass pastures. Data from 9 cutting interval trials show that to allow maximum translocation of GF-839 to the roots the grass may be cut 7 days after application.

Conclusion Together with good husbandry and management techniques, GF-839 is a novel, useful and effective tool to be used in an integrated approach to improving the quality of grassland.