

Gourmet Leeks Kover Trial 2025

Aim:

The aim of this trial is to assess the effectiveness of combining **Kover** (Pinene (terpene) Polymers, petrolatum, alkyl amine ethoxylate – 100%) with **Pendimethalin** (Stomp Xtra - 455 g/L Pendimethalin) as a pre-emergent herbicide treatment for weed control in leeks. The replicated trial will evaluate the efficacy of this combination in suppressing weed growth while ensuring the safety and health of leek plants. Key objectives include determining the optimal application timing and rates, assessing compatibility between the two products, and monitoring their impact on leek yield and overall crop development under typical field conditions.

Protocol:

The trial involved six replicated plots, with three different Kover application rates (1 L/ha, 1.5 L/ha, and 2 L/ha) paired with a constant rate of 1 L/ha pendimethalin (Stomp Xtra). Adjacent untreated rows, Stomp Xtra Pre Planting, will serve as the control. Application 24th January 2025.

1 plot x 3 sites are Peat soil with higher organic matter, and the other plot with x 3 sites are on a sedimentary / sandy soil. 2 sites at 1L/ha, 2 at 1.5L/ha and 2 at 2L/ha on each soil type.

Trial Sites:



Figure 1: Peat Soil Trial Site x 3 Replicas



Figure 2: Sandy Soil Trial Site x 3 Replicas

Application:

Application Rate (L/ha)	Kover (ml in 5L Tank)	Pendimethalin (ml in 5L Tank)	Number of Passes
1L/ha	28ml	28ml	2
1.5L/ha	42ml	28ml	2
2L/ha	56ml	28ml	2

Table 1: Trial Application Volume Protocol



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Results:

4th February - 11 Days Post-Application Results.



Control – Stomp Xtra Pre-Planting



1L Kover + 1L Stomp Xtra



1.5L Kover + 1L Stomp Xtra



2L Kover + 1L Stomp Xtra

10th February - 17 Days Post Application Results



Control – Stomp Xtra Pre-Planting



1L Kover + 1L Stomp Xtra



1.5L Kover + 1L Stomp Xtra



2L Kover + 1L Stomp Xtra

17th February – 24 Days Post Application Results



Control – Stomp Xtra Pre-Planting



1L Kover + 1L Stomp Xtra



1.5L Kover + 1L Stomp Xtra



2L Kover + 1L Stomp Xtra

27th February - 34 Days Post Application Results



Control – Stomp Xtra Pre-Planting



1L Kover + 1L Stomp Xtra



1.5L Kover + 1L Stomp Xtra



2L Kover + 1L Stomp Xtra

3rd March - 38 Days Post Application Results



Control – Stomp Xtra Pre-Planting



1L Kover + 1L Stomp Xtra



1.5L Kover + 1L Stomp Xtra



2L Kover + 1L Stomp Xtra

38 Days Post Application Results – Weed Results

When comparing the weed emergence at 38 days post-application, it was evident that the treated blocks all had reduced prolonged weed control, although the signs of re-emergence had become visible in the plots, indicating that the efficacy of the Kover in holding the Pendimethalin in the upper soil profile had been reduced. The weeds below had been minimized in the treated block when compared to the control plots.

- Fathen
- Twin Cress
- Shepherds Purse
- Scrambling Speedwell
- Spurrey
- Hawkes Beard



Figure 3: Fathen

Control (Left) vs Treated (Right)

Figure 4: Shepherds Purse

Control (Left) vs Treated (Right)

Figure 5: Twin Cress

Control (Left) vs Treated (Right)

The above images represented the weeds found in both the control and treated plots. The difference in the size of weeds after 38 days, post-application of Kover, clearly indicated that the Pendimethalin had been held in the weed germination zone for prolonged periods, as staggered emergence and smaller weed volumes were visible in the plots treated with 1L, 1.5L, and 2L of Kover.



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Trial Plots	Peat Soil – Higher Organic Matter Weed Count	% Difference in weed Count	Sedimentary/Sandy Lower Organic Matter Weed Count	% Difference in weed Count
Control Stomp Xtra	86	Control	98	Control
1L Kover	22	74.5%	54	44.9%.
1.5L Kover	17	80.23%	44	55.1%
2L Kover	11	87.27%	46	53.1%

Table 2: Weed Control across the 6 replicated sites.

Overall Summary:

Peat Soil:

The Kover treatments (1L, 1.5L, and 2L) significantly reduced the weed count, with the 2L Kover showing the most effective reduction, **87.27%**. Peat soils, rich in organic matter, may have enhanced the effectiveness of Kover due to better retention and interaction with the herbicide, leading to higher weed suppression.

Sedimentary/Sandy Soil:

While the Kover treatments still reduced the weed count, the percentage reductions were less dramatic than in peat soil, with the highest reduction being **55.1%** at **1.5L Kover**. Sandy soils, with larger particles and lower organic matter, may have resulted in faster leaching and reduced herbicide retention, potentially leading to lower efficacy in weed control.

Final Notes:

In this trial, the combination of **Kover** and **Pendimethalin** (Stomp Xtra) proved effective in reducing weed counts across both soil types. Kover, when used as part of a pre-emergence herbicide application, enhanced the efficacy of Pendimethalin by reducing weed stress and improving herbicide uptake. Kover helped keep the herbicide in the active zone for a longer period, enhancing its effectiveness by improving herbicide retention and reducing the potential for leaching. The higher organic matter in peat soil likely enhanced the treatment's effectiveness, with increased soil moisture and nutrient availability supporting better herbicide action. In sedimentary/sandy soils, while the results were more moderate, the combination still provided notable reductions in weed populations. This demonstrated the broad utility of this product combination for pre-emergence weed control across different soil types.

Overall, the trial highlighted that **Kover + Pendimethalin** offered a balanced approach, providing effective weed control without the risk of overapplication, making it suitable for various soil conditions. For general use across all soil types, the **1.5L Kover** rate will be recommended. This rate provided the most consistent weed reduction, achieving a significant reduction in both peat soil and sedimentary/sandy soil.