



Irrigation Research &  
Extension Committee

# 2020/2021 IREC Kikuyu Establishment on Channel Bank Trial

## Agricultural Trials with an Agronomic Focus

### An Area Wide Management of Weeds Project trial targeting establishment techniques of Kikuyu on channel banks.

#### Aim

To determine the effectiveness of Kikuyu along channel banks for the prevention of fleabane and ryegrass establishment in comparison to chemical control.

#### Trial Establishment

Located in Nericon, in the months of September 2020-March 2021, the application of Kikuyu seed and turf were applied along the MI channel bank to monitor the incidence and spread of tough to control weeds.

After the trial completion, visual assessments were made on a 3 monthly basis and monitored through to January 2023

#### Assessments

An assessment period of 6 months, September 2020 – March 2021, was conducted to monitor weed populations and Kikuyu establishment. A randomised layout of bare earth, Kikuyu seed and Kikuyu turf were placed along the channel banks. Periodically since the completion of the trial, assessments have been conducted visually.

Annual ryegrass is one of the main hard to manage weeds that was assessed throughout this trial. Naturally a winter dominant weed, the pressure had decreased during the summer months and had very little population to assess.

Fleabane was not present throughout the trial period.

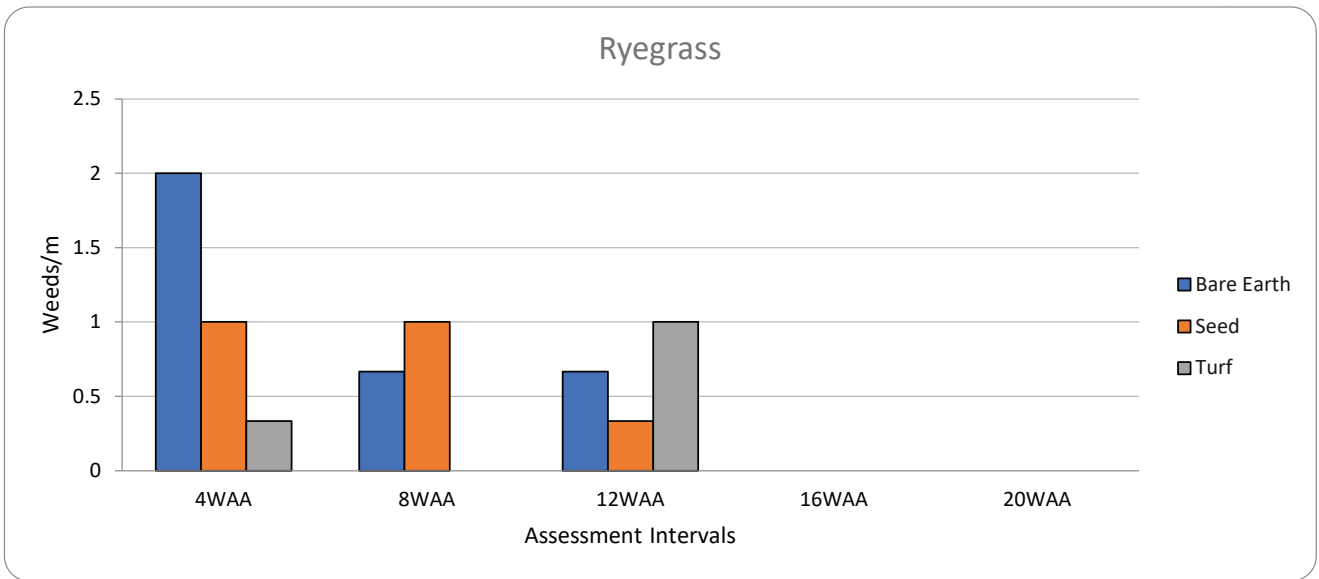
In the month of November 2021, the MI applied herbicide to the trial site as a routine weed control. Kikuyu and weeds appeared to be 100% controlled by this application.

Upon the next visual assessment, 3 months later in February 2022, Kikuyu turf and weeds were re-establishing.

Bare Earth	Seed	Turf	Seed	Bare Earth	Turf	Bare Earth	Turf	Seed
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Table 1: Trial treatments along channel bank





**Table 2: Ryegrass plant counts/m in each treatment — weeks after application**



**Above: Kikuyu turf treatment 1 month after application**



**Above: Kikuyu seed treatment 1 month after application**





Above: Kikuyu turf treatment at completion of trial



Above: Kikuyu seed treatment consumed by weeds at completion of trial



Above: November 2021 post herbicide application



Above: Bare earth vs Kikuyu turf – May 2022, 6 months post herbicide application





**Above: Kikuyu turf treatment at completion of trial**



**Above: Kikuyu seed treatment consumed by weeds at completion of trial**

## Cost Comparison

For the control of hard to kill weeds, the suppression from Kikuyu was compared to untreated earth where weeds were of an abundance.

To control the weed population within the untreated areas would require a chemical application. During the trial period no chemical was applied to control the untreated. If chemical was applied to untreated areas within the trial site a monthly application of, Roundup Ultramax + Hammer + Hasten, ideally allows the assessment of existing weeds and newly emerging weeds to be conducted. Chemical applications can also be seen as very cost effective.

The initial cost to establish Kikuyu turf is of a much higher price than the establishment cost of Kikuyu seed and multiple applications of chemical. Kikuyu, once established, does not require a large amount of maintenance, reducing the long-term cost.

Kikuyu seed shows a reasonable, cost-effective way of controlling weeds once established and as dominant as Kikuyu turf. Unfortunately, Kikuyu seed is difficult to establish in warmer months and would require higher maintenance. In cooler months, rainfall is more frequent and Kikuyu seed would have a better establishment rate with less maintenance.

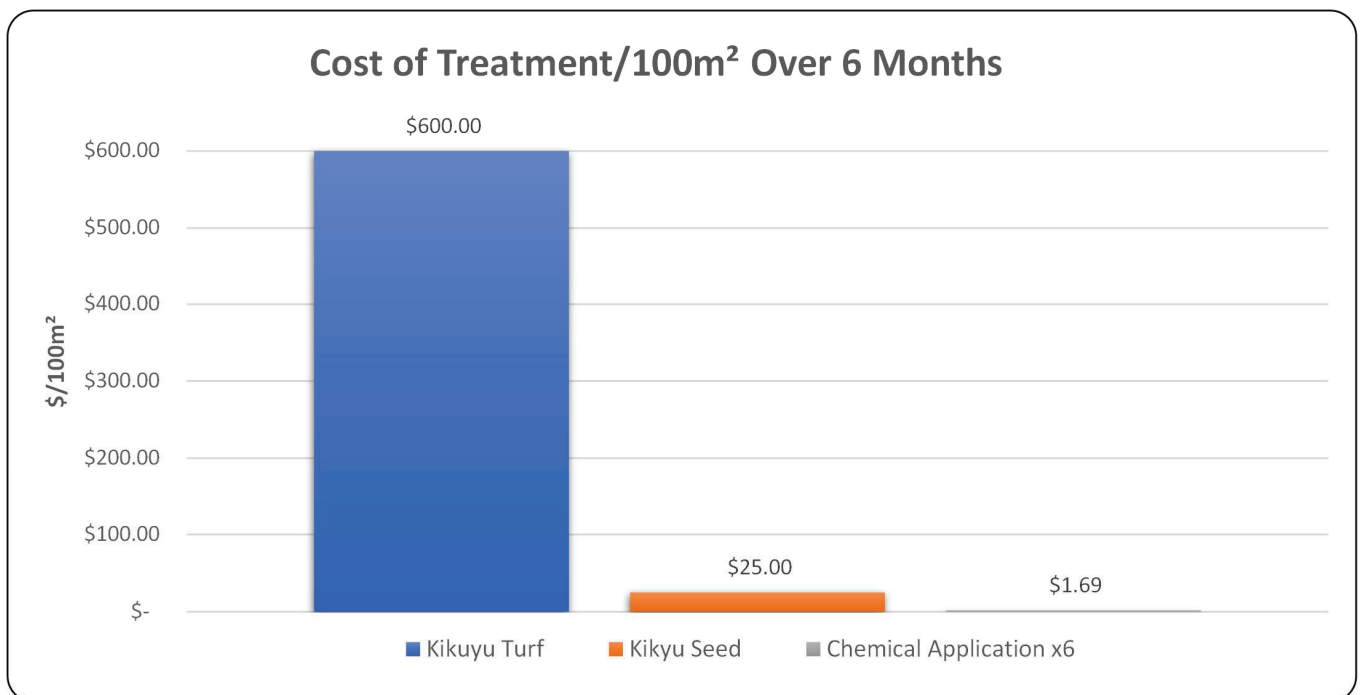


Table 3: Cost of Treatments over a 6-month period for the control of weeds

## Conclusion

Turf along channel banks has the potential to suppress and reduce the movement of weeds. It has the capability of surviving extreme weather conditions, will continue spreading along banks and obtain water from the channel for self-management.

The placement of turf in comparison to spreading Kikuyu seed proved to be the better option. Due to environmental conditions throughout summer and winter, turf applied had a good survival rate. Kikuyu seed was very dependent on rain to assist with emergence and did not survive in low rainfall months.

Residual herbicides are a major weed controller. To apply residual herbicides on farm with a turfed channel bank may see a major effect on weed suppression. Applying a knockdown herbicide along the channel banks saw temporary control of both kikuyu and weeds. Kikuyu proved strong enough to reproduce post herbicide application.

Removing the annual ryegrass assessments and concentrating on visual assessments containing multiple weed species, it is clear the turf applied had progressed significantly and provided suppression to most weed species present.

Moving forward, the recommendation for a long term, non-chemical weed control is the laying of Kikuyu turf in the month of September and spreading Kikuyu seed throughout the months of late autumn through winter in higher rainfall seasons.

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