Fact Sheet
TILLAGE No. 9

Teagasc
Agriculture and Food Development Authority

Willow Weed Control

TILLAGE SPECIALISTS 2010

Pre-Ploughing

It is important that this application is carried out effectively particularly on old pasture land where the presence of perennial weeds such as docks and nettles is more likely. A translocated (systemic) herbicide (e.g Glyphosate at 4-6 l/ha) should be applied to actively growing vegetation from January 15th. To allow the herbicide to fully translocate, a period of ten days post herbicide application should be allowed before ploughing.

Post-Planting

A mix of pre-emergence residual herbicides should be applied immediately after rolling, certainly no later than 5 days after planting, for broad spectrum early season weed control. The quality of the seedbed is critical to this operation. A good, fine seedbed will allow a seal on the soil surface to be created and help reduce the need for further herbicide applications. However, depending upon the weeds present it may be necessary to apply follow up contact sprays for specific problems. The aim is to eliminate competition so that the crop can grow and develop to its maximum potential. There are a number of residual herbicides which can be used but a mixture of pendimethalin (e.g Stomp at 3.3 l/ha) and isoxaben (e.g Flexidor at 2 l/ha) has been found to be an effective mix on a range of sites. The residual herbicide should be applied within fourteen days after planting at the very latest.

Another alternative is metamitron which is a soil acting residual herbicide for the pre-emergence control of germinating annual herbaceous and grass weeds in farm woodland only. Soil must be moist, and rainfall must occur after application for effective weed control. Do not apply to sands, stony or gravelly soils or soils containing more than 10% organic matter. In small scale trials, survival and height growth of willow was not affected by overall sprays while trees were dormant. Transient scorching did occur with cherry and larch and for this reason, only treat dormant trees for maximum safety.

Insecticide

In order to control leatherjackets, the larval stage of the cranefly or 'daddy-long-legs' (Tipula) a chloropyrifos insecticide (e.g Dursban at 1.5 l/ha) should be included with the post-planting herbicides. High volumes of 500 l/ha should be used to give good surface coverage of the herbicide and adequate penetration of the insecticide

Pre Emergent Herbicide List for Willow

Active Ingredient	Product	Mode of Action	Product Rate
Isoxaben	Flexidor 125	Residual pre-emergent	1.5 - 2 l/ha
Metamitron	Target SC Target WG	Residual pre-emergent /foliar	5 – 7 l/ha
Pendimethalin	Stomp 400 SC Alpha Bromotril P 4 l/ha	Residual pre-emergent 3.3 l/ha	5 – 7 kg/ha

During establishment

There are also a small number of herbicides that can be applied to the growing SRC through a normal agricultural sprayer that are crop safe. These generally have a small (but useful) range of target species (e.g. grasses or thistles). Extreme care must be taken when using any broad-leaf herbicides within the growing crop to prevent serious damage.

Products During Establishment

Active Ingredient	Product	Mode of Action	Product Rate
Cycloxidim$_1$	Stratos Ultra	Foliar	0.75 - 2.25 l/ha
Fluazifop-p-butyl	Fusilade Max	Foliar	1.5 – 2.5 l/ha
Propaquizafop	Falcon	Foliar	1.5 l/ha
Clopyralid	Various	Foliar	0.5 - 2 l/ha

$_1$Always apply with an adjuvant oil at 0.8% of final spray volume

Following Establishment

After cutback a further herbicide application will be necessary to keep the crop weed free till it achieves canopy closure usually in mid-summer of the second growing season. The use of a contact herbicide, glufosinate ammonium (Basta) for example, together with an additional application of a residual herbicide – (eg pendimethalin) will provide the necessary control and should be applied before significant flushing but delayed sufficiently after cutback to allow for wound sealing. If weed cover is significant a delayed cutback will ensure that the weeds are actively growing when they will take up the active ingredient more effectively. Mechanical weed control is also effective and a number of implements are available which till weeds between the rows of willow.

Once canopy closure occurs, usually within a couple of months after cutback, the coppice controls its own weeds due to reduced light levels reaching the ground surface. At maturity the crop can reach 8m in height and is too dense to easily walk through. The underlying vegetation is usually no more than a ground cover and does not cause any detrimental effects on crop growth or yield. The ground flora is beneficial in that it provides habitat for invertebrates and small mammals, many of which predate pest species.

Further information:

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