

Findings from the spring survey of biomass availability with a focus on rushes 2022

The survey targeted people who had rushes on their land. A total of 124 people responded to the survey representing 24 counties with 23 respondents from Clare, 13 from Limerick, 11 from Kerry and 10 from Galway.

Of the 124 who responded 121 stated that they had rushes on their land and 49% had up to 5 ha.

ANSWER CHOICES	RESPONSES	
▼ 1-5 hectares	49.59%	60
▼ 6-10 hectares	21.49%	26
▼ 11-15 hectares	10.74%	13
▼ 16-20 hectares	7.44%	9
▼ 21-25 hectares	3.31%	4
▼ 26-30 hectares	3.31%	4
▼ 31-35 hectares	1.65%	2
▼ More than 35 hectares	2.48%	3
TOTAL		121

When asked if they managed their rushes

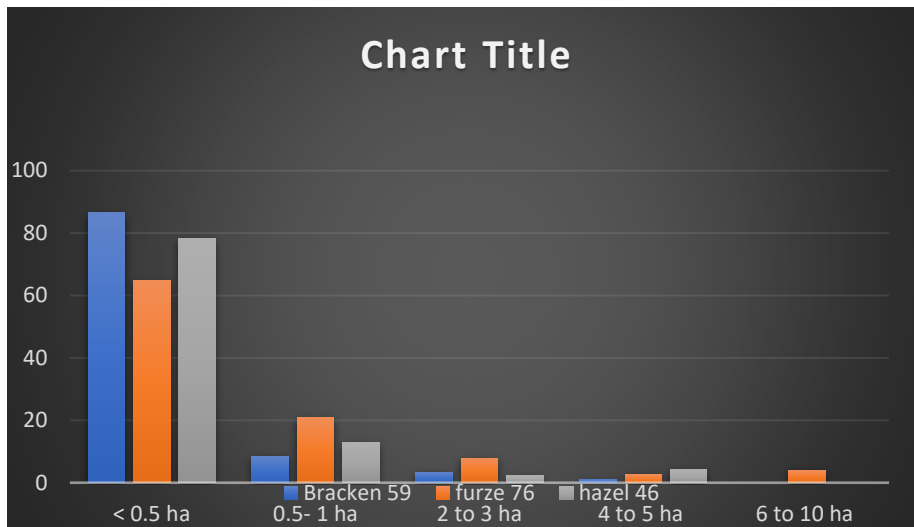
Of the 114 who responded, 84% said they top their rushes, 30% spray their rushes and 24% harvest and bale their rushes.

Of the 35 that answered that they harvested their rushes, the numbers of bales harvested ranged from less than 10% harvest up to 10 bales per year to 3.5% harvest more than 50 bales per year.

Of the 35 that harvested the rushes, 50% of these respondents store their bales in a shed and a further 33% store in their yard, indicating that 83% of the respondents were already using the rushes for either bedding or fodder rather than allowing them to rot in the field.

We also asked about other biomass such as Bracken, Furze, and Hazel

Furze appears to be the most dominant biomass of the 3 probably because Bracken is associated with uplands and hazel with eskers karst landscapes.



Conclusions

Rush is pretty widespread throughout the country but more so on the western part of the country.

Of the 124 respondents 121 had rushes of anywhere between 1 hectare to over 35.

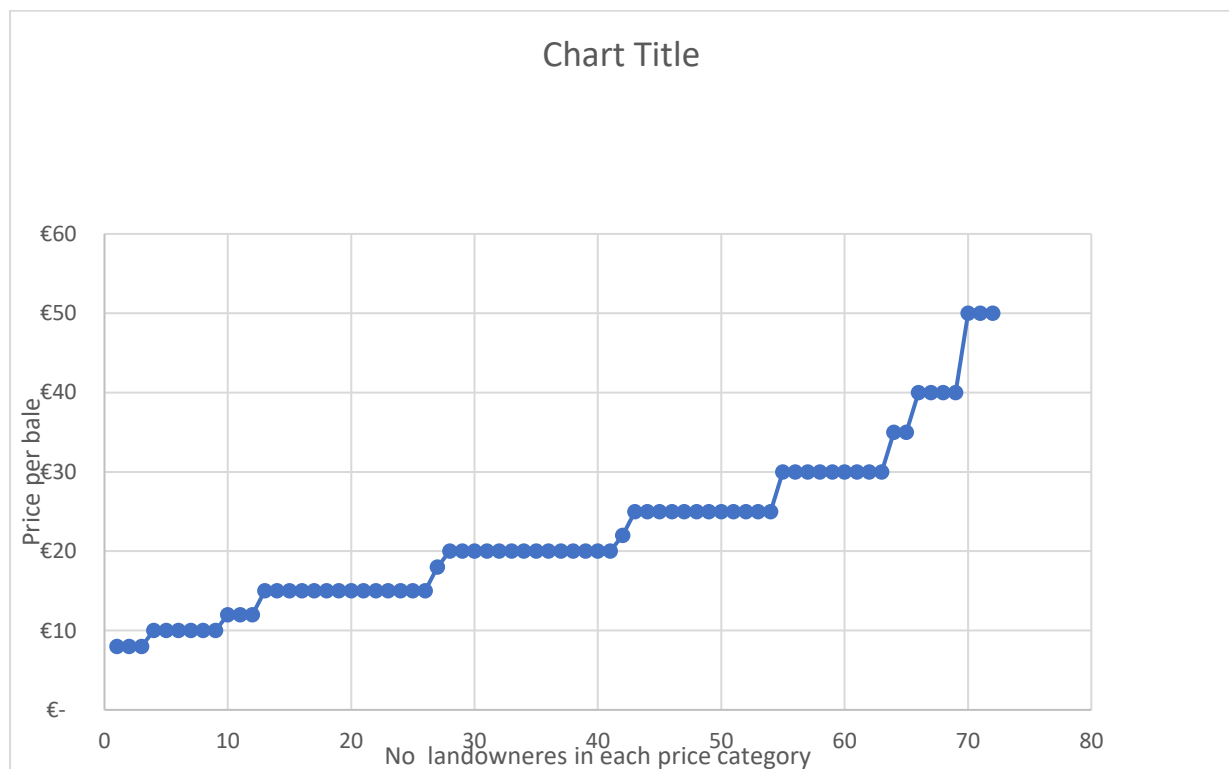
The table2 below shows what percentage of landowners had land with rushes in each hectare range. Using a conservative yield of 7 bales per ha/year the median bales yield was determined. Based on the Teagasc information, a heating oil equivalent of 393L/ ton of dry hay was used to calculate the potential heating oil yield. The biochar yield was based on a 20% conversion factor.

Table 2

Range Ha	Respondents %	Median Bale yield	Heating oil equivalent Litres	Biochar yield Tons
1- 5 ha	49.6	35	3,439	1.75
6-10 ha	21.5	57	5,600	2.85
11-15ha	10.7	91	8,941	4.55
16-20ha	7.4	126	12,380	6.3
21-25 ha	3.3	161	15,818	8.05
26-30 ha	3.3	210	20,633	10.5
31-35 ha	1.7	231	22,696	11.55
35 ha+	2.5	231	22,696	11.55

84 % (from 114 respondents) actively manage their rushes via topping, which means they are using tractors and the ground is traversable. Currently 35 % of these landowners are harvesting their rushes and baling them. Whilst some of this land would be limited by damp and rough terrain for balers, it still suggests that a higher percentage of these rushes could actually be harvested dependent on the usual restrictions such as weather.

When asked about what price they would require to bale the rushes the price ranged from 'don't know' to €50 per bale. The average amount was €19. Based on survey of contractors and farmers in 2017 the project agreed a price of €11 per bale. Prices tracked on Done Deal over the last 3 years show that bales are been sold on average between €8 and €15.



Based on this survey there is an untapped biomass resource on our doorstep, with vast amount of money both machinery and fuel to control them and a negative impact on the environment by using chemical to control them. Whereas an alternative model is to harvest these rushes for biomass and via pyrolysis or gasification convert them into clean energy with the motion to capture carbon via the biochar produce

Based on this survey rushes are an untapped biomass resource on our doorstep, which currently requires a great many resources (money, machinery, fuel,) to control them and which has a negative impact on the environment if using chemicals to spray the rushes (30% of our 114 respondents).

The alternative model is to harvest these rushes for biomass and via pyrolysis or gasification, convert into clean energy and capture carbon via the biochar produce.

1.<https://www.teagasc.ie/rural-economy/rural-development/diversification/straw-for-energy/>