

Unit Value Factor (UVF) Process

Overview and Background

The Unit Value Factor is a critical component of calculating CAVAT.

The UVF is vital to the basic calculations of CAVAT and the process that goes into quantifying the UVF is essential and wouldn't be possible without information and support from UK tree nurseries / growers / suppliers.

The UVF is unique to CAVAT and represents the full cost of a newly planted tree on a per unit of trunk cross-sectional area basis (i.e. £ per cm²) and is derived from both nursery gate price and the planting cost. The history to the derivation of the UVF is available in the CAVAT literature, including: <https://doi.org/10.1080/03071375.2018.1454077>

A summary of calculations required as part of the UVF methodology is shown in 'Table 1'. These can be found in the 'Calculations' tab of the UVF spreadsheet (Appendix 4).

<u>Input / Output</u>	<u>Value (cm)</u>	<u>Symbol</u>	<u>Equation</u>
girth/circumference =	13	C	
Pi	3.141592654	π	
Radius	2.06901426	R	$r = C / 2\pi$
Area =	13.44859269	A	$A = \pi r^2$

Table 1

Specifically, the unit area cost is determined as the cost, at trade prices, of the top 10 most commonly purchased species/varieties as 12–14 cm diameter (hence the mid-point of 13cm in Table 1), standard containerised trees.

An annual calculation of the UVF should be undertaken to ensure the UVF remains accurate. Where a nursery-based calculation is not able to be completed, the increased UVF is calculated by the annual mean average RPI for the year, published each April at: <https://www.ons.gov.uk/economy/inflationandpriceindices/>.

Contacts and Information

To perform the calculation, nursery information is critical. Nurseries need to be contacted in early April in order to prompt them for their sales information by the start of May. There is a contact list of potential nurseries that could supply data sets and have been contacted before, although only three nurseries for both the last two UVF calculations (2017-18 & 2022-23) provided data based on the CAVAT Group's request.

The nurseries (Contact List in Appendix 1) engaged are from across the UK and were chosen due to the following factors:

- regular Local Authority supplier;
- sell 12-14, container grown stock;
- Plant Healthy certified.

Each nursery is sent a letter from the CAVAT Group explaining the UVF, CAVAT and the need for support and information. Nurseries will be coming to the end of their busy period, which is why the UVF is updated in May, to avoid adding pressure to nurseries during their peak period resulting in an increased response rate. Nonetheless, nurseries will still be busy and therefore, they may need to be reminded to provide the information requested. A sample letter can be found in Appendix 2.

The key information requested from each nursery:

- sales to Local Authority only;
- per tree trade price for the **top 20** selling species/varieties;
- 12-14 cm containerised trees only;
- quantity of stock sold for each species/variety.

Each nursery is provided with an Excel spreadsheet (Appendix 3) to aid easy delivery of the information in a standardised format, requesting only that data required to complete the calculations.

Data Collation and Output UVF

Details requested from nurseries are outlined below in 'Table 2' for reference and are the same as those in Appendix 3:

Best selling	Genus	Species	Variety (if applicable)	Quantity Sold	Price per tree (£)
1					
2					
3					
4					
5					
...					
20					

Table 2

Following receipt of the completed spreadsheet from the nurseries, each submission is added to a workbook (Appendix 4 for example) as a worksheet and each worksheet is labelled as Nursery A, Nursery B, etc, to ensure the information from each nursery is anonymised.

Once all the relevant responses have been received and added to the workbook, each work sheet is sorted by 'Quantity sold' to determine the top 10 selling tree from each nursery, and these are then collated into a combined worksheet in alphabetic

order of genus, species and variety. An example is below in 'Table 3' to illustrate the calculation and the output.

Best selling	Genus	Species	Variety (if applicable)	Quantity Sold	Price per tree (£)	Total (£)
A2	Betula	Pendula		285.00	115.00	32,775.00
B8	Betula	Pendula		212.00	104.79	22,215.48
C2	Betula	Pendula		350.00	98.00	34,300.00
B7	Betula	Utilis	Jacquemontii	239.00	119.47	28,553.33
C6	Betula	Utilis	Jacquemontii	210.00	120.00	25,200.00

Table 3

This figure is then divided by the stem area of our 12-14 tree (*Table 1*), and adjusted for planting cost, to provide the updated UVF.

Appendix 1 – Nursery Contact List

Nursery contacts UVF (Valid May 2023)



[REDACTED]

[REDACTED]

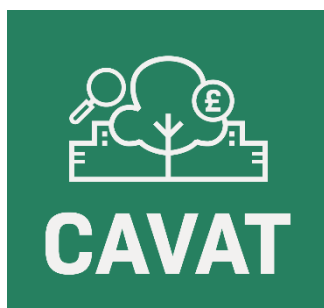
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Appendix 2 – Sample Letter to Nursery Suppliers



{INSERT Date}

Dear XXXXXXXXXXXX,

Thank you for your ongoing support to the CAVAT Group, the development of CAVAT for valuing trees and helping us with our periodic review of the Unit Value Factor (UVF).

The UVF is vital to the basic calculations of CAVAT and the process that goes into quantifying the UVF is essential and wouldn't be possible without your help and support.

You may recall that the UVF is novel to CAVAT, and that it represents the full cost of a newly planted tree on a per unit of trunk cross-sectional area basis (i.e.. £ per cm²) and is derived from both nursery gate price and the planting cost.

Specifically, the unit area cost is determined as the cost, at trade prices, of the top 10 most purchased species/varieties as 12–14 cm diameter standard, containerised trees.

Using nursery supplied information, the UVF is calculated. To maintain the accuracy of the UVF, this is now updated annually.

We appreciate that November to March is a very busy period for your business, which is why we've taken the step to defer the UVF calculation to May, in the hope that you will be able to continue to support this unique step for CAVAT.

Based upon your sales to **Local Authorities** for financial year {INSERT financial year}, we request your:

- per tree trade price for your top 20 selling species/varieties
- 12-14 cm containerised trees only
- quantity of stock sold for each.

Please provide the information using the attached Excel spreadsheet. (Appendix 3_UVF_Nursery Supplier Return)

All information provided will be treated as confidential, no information will be shared with any third party. The information will only be used to determine the mean weighted average for the UVF.

Please can we receive the information before close of play Monday {INSERT DATE}. The updated UVF will be presented on the LTOA CAVAT webpages. If you would like to be named on the webpage

as a contributing nursery, please confirm this in your return. Please do not hesitate to contact us if you have any questions relating to this request.

Yours Sincerely for the help and support,

The CAVAT Group

Appendix 3 – See Excel document (Appendix 3_UVF_Nursery Supplier Return)



Appendix
3_UVF_Nursery Suppli

Appendix 4 – See Excel document (Appendix 4_UVF_Combined_Master)



Appendix
4_UVF_Combined_Ma: