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# Logistics of vine-shoots harvesting in Treviso province

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## Acknowledgments

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I would like to thanks everyone who were involved, but I know I won't remember all the names: may they know they are in my mind. To everyone I forgot to mention: sorry, you are in my heart.

I think it's all, just a thing more...

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*"Avete ragione di parlare di "inferno", giacché da quando vi ho lasciato, vivo in una specie di inferno intellettuale, ossia in un paese ove l'intelligenza e la scienza sono reputate cose infernali da chi ha la bontà di governarci".*

Camillo Benso, conte di Cavour; da una lettera a De La Rive

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Happy Birthday, Italy

Conegliano, March 18th, 2011

**INDICE**

# 1 Background

## 1.1 The rule of the wood biomass for energy production

Dependence on fossil fuel energy supply and use is neither sustainable nor renewable. Of all the renewable energy sources which will ultimately displace the use of fossil fuels over time, the largest contribution, especially in the short to medium term, is expected to come from biomass.

Development of a successful bioenergy sector in both developed and developing countries, will make a useful long-term contribution to diversity, security and self-sufficiency of energy supply. Biomass will play a leading role in mitigating the environmental effects of fossil fuel energy use as it can offer major reductions in harmful emissions particularly greenhouse gases and sulphurous oxides.

The use of biomass to produce energy, in order to provide a wide range of energy services (heat, light, comfort, etc.), and to produce substitutes for petro-chemicals, is an integrating response to a number of global problems. These include equity, development, energy supply security, rural employment, and climate change mitigation. (Sims, 2004)

Biomass provides fuel flexibility to match a wide range of energy demands and is a renewable energy source that can be stored, which is an advantage over several other forms of renewable energy. Currently solid biomass represents 45% of primary renewable energy in OECD countries (IEA, 2002; Sims, 2004).

There has been a long tradition of wood fuel use in the North-eastern Italian Alps, the use of wood for heating was diminished to some extent in the second half of the last century because of the spread of fossil fuels. Now use of wood is rising once more, because of major awareness of the need to reduce fossil fuel use and to limit environmental impacts such as greenhouse gas emissions.

Moreover, this growth is strengthened by political initiatives. For example, European and regional funds provide incentives and support for the development of District Heating (DH) and wood-fuelled boilers as sources of renewable thermal energy. Biofuel (e.g. wood chip) use in this context is mainly connected to grants (Emer et al., 2010).

The term "biomass" includes:

- crop residues (e.g. cereal straw, rice husks and bagasse for cogeneration);
- animal wastes (e.g. anaerobic digestion of sewage sludge to produce biogas or interesterification of tallow to give biodiesel);
- woodlot arisings (e.g. from agro-forestry and farm woodland silviculture after log extraction and used mainly for heating);
- forest residues (e.g. arisings remaining after log extraction or wood process residues at the sawmill or pulp plant);
- municipal solid waste (either combusted in waste-to-energy plants or placed in landfills with the methane gas collected); and
- energy crops (e.g. vegetable oil crops to produce biodiesel, or sugarcane, beet, maize and sweet sorghum for bioethanol, or miscanthus and short rotation coppice for heat and electricity generation).

Italian agriculture today lives a phase of change in manufacturing guidelines, with the primary aim of giving substance to multifunctionality. The farms are seeking new directions of production, supported by new EU and national legislation, which are able to produce an adequate income through non-conventional production activities, which reverses the trend away from agriculture.

## 1.2 The energy utilization of vine-shoot

Among the productive chains that can contribute to activate the multifunctionality of agriculture, linked to the protection and redevelopment of the land, the wood energy supply chain is one of the most mature and practical. In this context, vine-shoots in recent years receive particular attention because of their possible use of energy, especially in large Italian wine-growing basins.

In Italy, the area cultivated with vineyards covers about 838,000 ha (ISTAT, 2005). The remains of pruning represent for most of these areas a cost of production. In many cases the vine-shoots are left among the rows and intended to be shredded, or taken on the field side and burned. Both solutions can give phyto-sanitary issues and environmental impacts.

In fact, while on the one hand the shredding of vine-shoots left in the field may play a role in nutrition and organic matter to the soil, the other - where the vineyard is not healthy and subjected to *Phomopsis viticola* attacks or root rot – the burial of shredded shoots could be problematic for the pest control (Costacurta et al., 2004, Vieri, 2006).

At present, moreover, one must consider that burning the vine-shoots on field side is often banned from many municipalities, both for dust emission issues and for preventing forest fires (even if there is a failure to comply with those regulations).

In accordance with Legislative Decree No. 22 of 1997 (Ronchi decree), when this material has to be disposed of, falls into the category of waste. If, on the contrary, to this material is given an energy production use, in accordance with Legislative Decree no. 152/2006, they are considered as fuel in all respects

Among the various options for collection systems, the system of tractor and medium-sized round baler is the most promising for an organized collection at supra-company.

### 1.3 Objectives

- Study of a large scale supply system, suited to the organizational needs of wineries and agricultural cooperatives or consortia, and based on the collection and densification of the vine-shoots in round bales.
- Identification of critical issues in the organization of a platform for the collection and processing of woodchips in vine-shoots.

# 2 Materials and methods

## 2.1 Description of the supply chain

### *2.1.1 Elements*

The identified system provides for the harvesting of vine-shoots through round baler, temporary storage of round bales near vine-growing unit or in deposit close to wineries, and their transport to a chipping and storage platform (Figure 1).

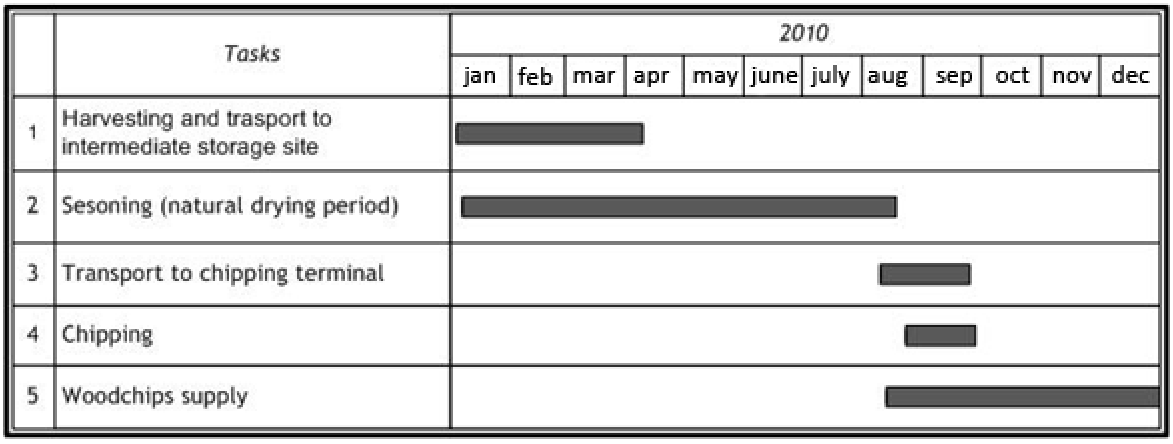


Figure 1 - Gant diagram of the workflow phases.

### *2.1.2 Case study*

The work development has considered the experience of the Cooperativa Agricola Alto-Livenza (COOAL) of Motta di Livenza (TV), because of their three-year practice in this activity and so of their consolidated work system.

The choice was motivated by the interest to study the organization of a collecting activity in a flat area on a large scale, because right in this area of the Treviso province is recorded the largest extension of vineyards (17,737 ha) with 80% of the availability of shoots (56,790 t valued at 50% water content).

The study firstly focused on the evaluation of the vine-shoots collection system, through the use of round balers and the transport of the round bales to temporary storage areas (February-April 2010). Later we studied the transport of round bales to the platform of chipping and stocking (August-September 2010).

## 2.2 The harvesting system

The harvesting machine consisted of a Gallignani fixed-volume compression chamber round baler, with chains and ties, and with a specific collector (Figure 2). The machine had a width of 2.4 meters and width of the harvesting head of 1.5 m. The round bales produced had a diameter of 1.5 m and a width of 1.2 m (Figure 3).

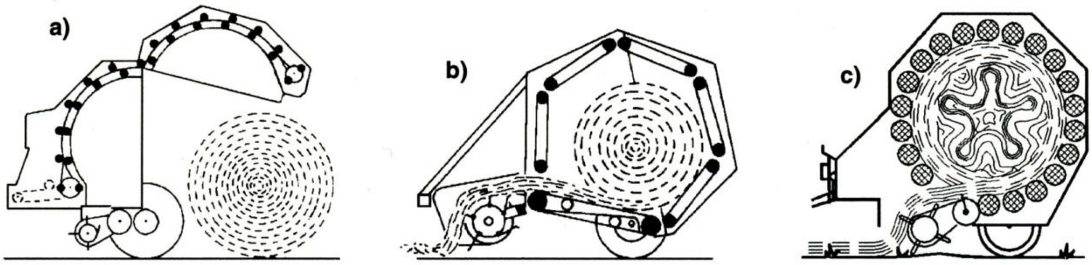


Figure 2 - Rotation and compression systems used in a fixed-volume round baler: transversal bars chain transporter (a); belts (b); metallic cylinders (c).

The round baler was pulled and driven by a 4WD tractor (power 59 kW). The transport of round bales to the point of temporary storage was carried out by a second tractor (power 64 kW) with a front loader equipped with forks.

*Figure 3a, b - Details of the vine-shoots harvesting unit used in the surveyed fixed-volume Gallignani round baler.*

The vine-growing unit which are covered in the vineyard register of Veneto, for the Treviso province, were then analyzed and classified, in relation to the collection and treatment system designed on the basis of the width among the rows, the form of farming and the average slope of the surface (derived from the model Digital terrain with resolution 25 m).

To complete of the analysis -besides the economic considerations (Table 1) - were also considered other methods of collection and treatment that are currently fairly spread in Veneto. The minimum standards of operation of these systems were evaluated based on recent research (Cavalli e Grigolato, 2007; Cavalaglio e Cotana, 2007; Spinelli et al., 2010) or other research projects (Francescato et al., 2007).

Table 1 – Evaluation of the costs for harvesting system

| MACHINE | TRACTOR – ROUND BALER | TRACTOR - HANDLING |
|---|---|---|
| PRICE (NEW) (€) | 55 000 | 60 000 |
| Power (kW) | 59 | 68 |
| Duration (years) | 12 | 12 |
| Salvage value (€) | 5 500 | 6 000 |
| Reintegration share (€ year$^{-1}$) | 4 125 | 4 500 |
| Maintenance share (€ year$^{-1}$) | 619 | 675 |
| Fuel cost (€ l$^{-1}$) | 1.20 | 1.20 |
| Fuel consumption (l h$^{-1}$) | 12.35 | 14.35 |
| Fuel cost (€ h$^{-1}$) | 14.82 | 17.23 |
| Insurance costs (€ year$^{-1}$) | 600 | 600 |
| Lubricant unit cost (€ kg$^{-1}$) | 3.00 | 3.00 |
| Lubricant consumption (kg h$^{-1}$) | 0.35 | 0.41 |
| Lubricant cost (€ h$^{-1}$) | 1.06 | 1.23 |
| Annual cost | 5 360 | 5 794 |
| Workable hours per year | 700 | 800 |
| Workable days | 88 | 100 |
| **COST PER HOUR** | **23.53** | **25.70** |

| MACHINE | ROUND BALER |
|---|---|
| PRICE (NEW) (€) | 28 000 |
| Duration (years) | 10 |
| Salvage value (€) | 1 500 |
| Reintegration share (€ year$^{-1}$) | 2 650 |
| Maintenance share (€ year$^{-1}$) | 400 |
| Insurance costs (€ year$^{-1}$) | 30 |
| Lubricant unit cost (€ kg$^{-1}$) | 2.00 |
| Lubricant consumption (kg h$^{-1}$) | 0.50 |
| Lubricant cost (€ h$^{-1}$) | 1.00 |
| Annual cost | 3051 |
| Workable hours per year | 500 |
| Workable days | 62.5 |
| **COST PER HOUR** | **7.57** |

The vine-growing unit which are covered in the vineyard register were classified in relation to the collection system and treatment of vine-shoots, through a GIS procedure which has provided the logical query of the vineyard register itself and the interpretation of the slope of the land.

The considered systems are below:

- RTA: tractor with large round baler system, ≥ 2.6 m among the rows , not limited in height, flat terrain
- RTB: tractor with medium size round baler system - distance among the rows between 2.0 and 2.6 m me, not limited in height, flat terrain
- RTC: tractor with small round baler system, distance among the rows between 1.6 and 2.0 m, not limited in height (> 1.8 m), flat terrain
- TS: tractor and shredder system, distance among the rows between 1.6 and 2.0 m, all forms of farming, even in gently sloping terrain
- ND: For installations where it can be applied to mechanized pruning and thus a potential of vine-shoots unavailable for the collection
- NC: planting distance on sloping ground, or ≤ 1.6 m among rows

As for the TS system this can also be applied to areas classified as RTA and RTB, as well as the RTB system can also be applied to areas RTA. The RTA system can be instead applied only to areas assigned to it from GIS processing.

With the aim to verify the productivity of the RTA system on the vine-growing unit classified as suitable for this system, we proceeded to analyze the vineyard register in relation to the regularity of the shape of the plots, the length of the rows, the number of turnings and the density of vine-shoots.

The parameters has been extracted considering that the geometric form of the cadastral unit – area that represent the enveloping surface (A), where is inscribed the sum of the vine-growing units surfaces, coded for that cadastral unit (Ai) - represent the geometric form of the vine-growing surface aimed to the vine-shoots harvesting.

So to find out the length of the rows a GIS procedure has been applied, able to determine the length of the longer and shorter side of the cadastral geometric form.

Then, the algorithms used in the GIS procedure - needed to determine the operative parameters of the vine-growing unit (rows length, number of turnings, density of vine-shoots along the row) - have been set.

The identified geometric parameters (Figure 4) are:

- Lesser dimension (a)
- Major dimension (b)
- Distance among the rows (d)
- Envelope surface area (Ai)
- Vine-growing surface area (A)
- Vine-shoot covered surface area (As)
- Number of turnings needed to harvest the considered field (nv)

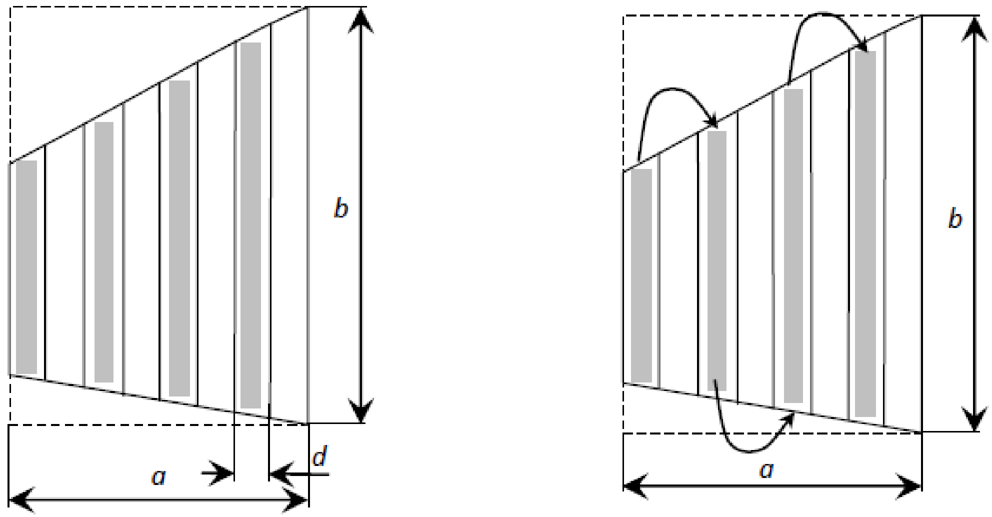


Figure 4a, b - Schematic of a generic vine-growing area in the cadastral surface (envelope surface) where the gray hatching indicates the area of accumulation of vine-shoots.

The number of turnings (nv) can be found in the scheme from the projection of the field's width (a, expressed in m) on the side of the enveloping rectangle, with the turning radius equal to d (distance among the rows, expressed in meters):

$$n_v = \frac{a}{2d}$$

The enveloping surface area (expressed in $m^2$), which represents the cadastral surface, is equal to:

$$A_i = ab$$

Supposed γ the a-dimensional ratio of the vine-growing surface area over the enveloping surface area, we have:

$$\gamma = \frac{A}{A_i}$$

So the vine-shoot covered surface area of the rows is equal to:

$$A_s = \frac{A}{2} = \frac{\gamma A_i}{2} = \frac{\gamma ab}{2}$$

Supposed m the mass of the vine-shoots (expressed in kg) quantified for every vine-growing surface, the density of the wine-shoots over vine surface unit (expressed in kg $m^{-2}$) is:

$$\rho_s = \frac{m}{A_s} = \frac{2m}{\gamma ab}$$

The equivalent length (expressed in m) of the distance among the rows covered by vine-shoots corresponds to:

$$l_{eq} = \frac{A_s}{d} = \frac{A}{2d} = \frac{\gamma A_i}{2d}$$

And so the vine-shoots density over length unit of the rows (expressed in kg · $m^{-1}$) is defined by:

$$\rho_l = \frac{m}{l_{eq}} = \frac{md}{A_s} = \frac{2md}{A} = \frac{2md}{\gamma A_i} = \rho_s d$$

### 2.2.1 *Work and time study*

The time study concentrated on three areas and considered the same harvesting system and the same operator. The first two sites presented broadly the same area, while site C was smaller. On the contrary for all the three sites we encountered almost the same vine-shoot density, probably because only white wine species were planted on these fields (Prosecco, Pinot bianco) (Table 2).

Table 2 - Brief summary of the three sites data

| | Unit | A | B | C | Total |
|---|---|---|---|---|---|
| Site surface | ha | 5.41 | 5.33 | 3.05 | 13.79 (total) |
| Vine-shoots density | t ha-1 | 3.04 | 3.09 | 3.01 | 3.04 (mean) |
| Water content | % | 49.3 | 50.1 | 49.8 | 49.73 (mean) |

The study of work time for harvesting and baling of vine-shoots has identified the minimum parameters of operation of the working system. The use of large round balers requires a minimum distance among rows of 2.60 m and a form of farming which is not limited in height (it has been excluded tent and arbour form).

Were recorded working times for the phases of advancement, tying, discharge time and turning time. In addition, for each site were recorded the size and shape of the land plot, the density of vine shoots in rows - for each row covered, the routes of collection system and the subsequent paths for the transport of round bales produced to the temporary storage areas.

The study of the times was, in fact, associated with the monitoring of the paths through the placement of GPS receivers in data-logger mode.

The study of times needed to collect the vine-shoots and to bale them in the field, has considered the following phases of work:

- Advance phase: the tractor with the round baler moves along the row, collecting vine-shoots.
- Tying phase: after completing the filling of the compression chamber, and once the compression of the material is over, the tractor and round baler stop for tying.
- Unloading phase: after the tying phase, starts the unloading of the bale. This stage ends with the resumption of the progress of the vehicle and the round baler along the row.
- Turning phase: this stage consider the manoeuvre done between the arrival at the end of the row and the beginning of progress along the next row.

The density of the vine-shoots has been outlined as an important parameter for the determination of the round baler speed and efficiency along the vine rows (Figure 5).

To determine the density of vine-shoots in the rows were used the following tools: an electronic dynamometer with a maximum capacity of 25 kN, a support for collecting and measuring the weight of the vine-shoots (consisting of a stretcher), a thread of known length and two small poles for the determination of the sampling area, a metric string and pruning shears.

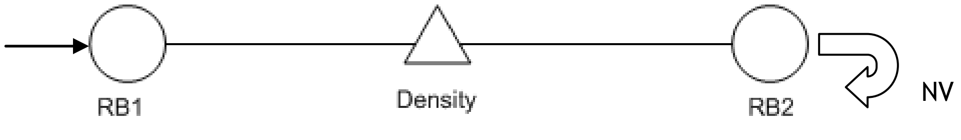


Figure 5 - RB = round bale; Density = sampled density of the vine-shoots by the use of a stretcher, NV = Turning

For the system of handling and transport of round bales to the temporary storage areas the times of transport and return were observed, and the time required for loading and unloading tractor with front loader. In particular, for determining the travelled distance, was used a GPS in data-logger mode.

### *2.2.2 Statistical analysis*

The recorded time study data and the measured data of each operation were combined as a dataset. The statistical data analysis on effective productivity time concerned the following working phases:

The productivity time consumption study of each work phases was formulated by applying regression analysis. Different transformations and curve types were tested to obtain the best possible symmetrical distributions of residual of the regression models and to achieve the best values for the coefficient of determination of final models. The regression analysis was performed by SPSS 17 (IBM, 2010).

### *2.2.3 Control of the moisture content*

In order to check the progress of the water content of the vine-shoots during storage in round bales has been set up a sampling of the variation of the weight of round bales in two types of storage: round bales uncovered, and round bales covered with plastic, non-breathable fabric.

From temporary storage facilities were then taken 12 round bales that were later transported to the storage facility of Cooperativa Agricola Alto-Livenza (COOAL).

## 2.3 Transport system

After the maturation period - second half of August - the round bales are transported by a tractor (power 107 kW) and a three-axle trailer (carrying capacity of about 12 t) at the platform for the operation of chipping, and subsequent storage of the woodchips under a shed.

### *2.3.1 Costs of delivery to the platform*

The hourly cost of the tractor and trailer was calculated € 63.88, including the labour cost equal to € 20 (Table 3).

The productivity of the transport system depends on the distance of delivery. Assessments of productivity and cost of transport are based on the consideration that vine-shoots during transport to the platform (August) have a water content around 11%.

Table 3 – Hourly cost for tractor and trailer

| MACHINE | TRACTOR |
|---|---|
| PRICE (NEW) (€) | 85 000 |
| Power (KW) | 145 |
| Duration (years) | 12 |
| Salvage value (€) | 8 500 |
| Reintegration share (€ $year^{-1}$) | 6 375 |
| Maintenance share (€ $year^{-1}$) | 956 |
| Fuel cost (€ $l^{-1}$) | 1.20 |
| Fuel consumption (l $h^{-1}$) | 22.38 |
| Fuel cost (€ $h^{-1}$) | 26.86 |
| Insurance costs (€ $year^{-1}$) | 600 |
| Lubricant unit cost (€ $kg^{-1}$) | 3.00 |
| Lubricant consumption (kg $h^{-1}$) | 0.64 |
| Lubricant cost (€ $h^{-1}$) | 1.92 |
| Annual cost | 7 960.03 |
| Workable hours per year | 800 |
| Workable days | 100 |
| COST PER HOUR | 38.73 |
| EQUIPMENT | TRAILER |
| PRICE (NEW) (€) | 20 000 |
| Duration(years) | 12 |
| Salvage value (€) | 1 500 |
| Reintegration share (€ $year^{-1}$) | 1 542 |
| Maintenance share (€ $year^{-1}$) | 150 |
| Insurance costs (€ $year^{-1}$) | 30 |
| Lubricant unit cost (€ $kg^{-1}$) | 2.00 |
| Lubricant consumption (kg $h^{-1}$) | 0.1 |
| Lubricant cost (€ $h^{-1}$) | 0.2 |
| Annual cost | 1 721 |
| Workable hours per year | 800 |
| Workable days | 100 |
| COST PER HOUR | 4.15 |

### *2.3.2 Work and time study*

The analysis provided the times observation by means of separate survey of the times, for different stages like work, transport and time of loading and unloading of round bales.

A GPS was mounted on the tractor responsible of the round bales collecting from the dislocated storages. The GPS was set in *data logger* mode, so that it recorded a waypoint every 10 seconds.

## 2.4 Chipping at terminal

The need for a study on the management and organization of the platform for the chipping of vine-shoots comes mainly from two requirements.

The first need is to maintain the chipper always operative in the chipping phase, and so to avoid stops to wait for the chipping material. The chipping operation, in this context of organized chain, sees the use of high power chippers and in the form of service, usually by subcontracting companies. The hourly cost of service for a chipper with power above 200 kW is about € 200 $h^{-1}$.

The second need is to have indications of the time needed to transport the round bales from the temporary storage facilities, located on farms or in areas planted with vines to the platform (Figure 6), in the days before chipping, in order to provide a minimum quantity necessary to ensure the continuity of chipping, whereas on the other side some of the round bales are transported in a manner "just in time" during the days of chipping.


Figure 6 - Aerial photo of the chipping platform site.

In the specific case study, the interest assumes additional significance because the chipping service is operated by a German company, with a chipper with a power supply system suitable for handling round bales of dimensions 1.50x1.20 m, and available to work only for the minimum time required to perform the work.

For this reason, the study of the chipping site was then arranged in order to include the handling operations (Figure 7).

The study of the site provides the times observation by means of separate survey of the times, for the application of the method of relief separate timelines for work stages (Berti et al., 1989). The recorded time for the phases of transport, were then added to the times recorded for the task of chipping at the platform.

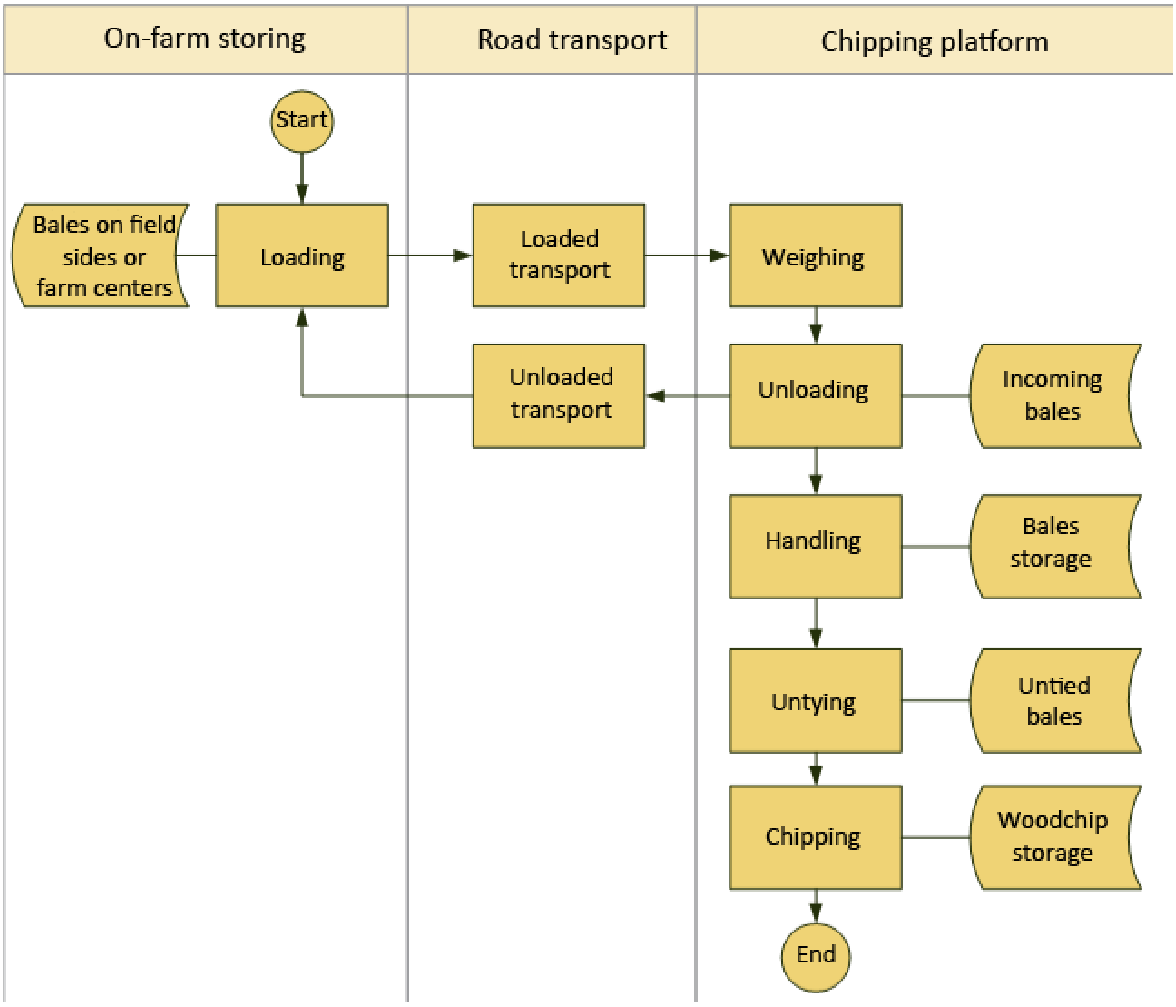


Figure 7 – Flowchart of the chipping process

The logistics of the platform in its complexity, dynamics and randomness was studied with the approach of a simulation model for the study of complex systems.

This approach was considered suitable for the study of a system for processing / management consisting of a set of operations that take place in succession and influence each other (Banks et al., 2005; Busato, 2007).

A separate analysis of individual transactions (handling, transport, untying, and chipping) and its components (tractor and trailer operators, tractor handling, and chipper) would instead merely describe a set of operations not connected between each other.

The developed model is stochastic because the input parameters are defined on the basis of statistical distributions and parameter values are taken as random values extracted from set distributions. The model is also discrete as it has a temporal dimension that varies the parameter values at each change of state of the system.

The model inputs for the definition of the scenario are based on extracting a random number of temporary storage facilities, characterized by the number of round bales stacked and distributed within a distance of 40 km (calculated on road network of the province) from the chipping platform.

Is then simulated the transport of round bales to the platform, their handling and preparation and simultaneous management of the chipping operation.

The chipping process considers as a priority the supplying of the chipper with the incoming round bales (transport mode just in time). During the simulation, the model evaluate as an option, in case the continuity of the operation if the chipping is prejudiced by the late arrival of the round bales from the centers of temporary storage, even the supply with the round bales already present and stacked in the platform in the days before filing.

### *2.4.1 Work and time study*

The rational and systematic collection of information about the productive process has the aim of identifying the distribution of the working times of the following work phases:

- Chipping time
- Complementary work time
- Delay time, avoidable
- Delay time, unavoidable

Video equipment (digital video camera mounted on a tripod) was used to record an entire day of work at the chipping terminal.

Activity sampling (frequency study) was the method of finding the percentage of occurrence of activities by the statistical sampling.

The work sampling method was used in the time study; according to this method, the percentage occurrence of each activity was found by statistical sampling and random observations (ILO 1979). This method is easy to use and rather quick: times and activities can be recorded manually (Harstela 1991; Rantala et al. 2003).

The used sampling interval was of two minutes and the total recorded time 8 hours. The time study data consisted of 240 observations that recorded the working times of the considered working phases, according to Berti et al. (1989) and ILO procedure. The frequency and the percentage occurrence of machine interruptions, idle times and rest pauses were also recorded.

#### *2.4.2 Chipper machine*

The chipper used was a Heizomat® machine, model Heizohack HM 14-800 KL, mounted on a Mercedes truck. The chipper was powered by the truck engine (257.3 kW – 350 HP), and has a value of € 350 000 (new).

### 2.5 Chipping evaluation by Discrete Event analysis

#### *2.5.1 Discrete event simulation (DES)*

Discrete event simulation (DES) is a powerful tool to help understand and manage complex processing system. A system is defined as a collection of entities - usually workers and machine - that act and interact toward the accomplishment of some logical end (Law and Kelton, 1991).

Discrete event modelling leaded to the creation of an assumed system. According to Banks et al. (2005), the model has the following characteristics:

- it is dynamic, therefore it has a temporal dimension (its variables evolve over time);
- it is stochastic, hence with inputs non-deterministic but described by statistical distributions;

- it represents discrete-event systems in which the state of the system can only change instantaneously at a discrete set of points in time (events), not continuously (Law and Kelton, 2000).

The DES model was built using WITNESS 1.02 (Lanner, 2007). Witness is a graphical interactive simulation package with artificial intelligence features, such as automatic program generation and debugging, and graphic interactive programming interface, which enable no-simulation specialist to build models of complex system.

According to the investigated situation the model was divided in blocks. The layout and the material flow of the processing system were therefore reproduced by using several elements (parts, buffers, machines, labours, paths, vehicles) interacting each other through rules, expressions and actions deduced by data collection and statistical analysis.

The model was constructed interactively in three steps through graphics interface:

- Define step: the names and quantities of the elements to be used in building the model were specified.
- Display step: it enables the modeller to specify how many elements must be displayed on the screen.
- Details step: it allows the user to supply the parameters of each element, such as the cycle time, set up time, etc.

The data taken from the time study allowed defining the elements and the conceptual aspects of the model.

The logical proceeding of work sequences was tested by running the model step by step and observing the interaction between all the elements by graphic and value outputs, in a sort of iterative building and verification activity (Bank et al. 2005).

The collected data of about transports, handling, delay times and chipping of the round bales were used to evaluate the optimal distribution for the same data on the probability plots and goodness-of-fit tests for the generating a realistic dataset of loads as input for the DES model.

The goodness-of-fit testes were evaluated with the test of Kolmogorov-Smirnov by SPSS 18 statistical package software at the confidence interval of 0.05.

Randomly occurring delays have an important influence on machine and operations. In this study the cause of the delays were also recorded. To describe the delay pattern of delay times (excluded waiting time generated by the interaction between the system elements) the distribution of the registered delay times in terms of time between delays and delay time were defined.

# 3 Results and discussion

## 3.1 Harvesting

### *3.1.1 Cost of the harvesting operations*

The total hourly cost for the gathering of vine-shoots is equal to € 48.60, including cost of labour set at 17.5 € $h^{-1}$. The hourly cost of handling has been evaluated € 43.19 $h^{-1}$. On the basis of productivity estimates for the harvesting site, the unit cost per ton of mass to 50% water content can vary from € 4.90 to 10.80 $t^{-1}$ by the density of vine-shoots, the regularity and size of the land parcels, and soil conditions.

The cost of round bales handling, including cost of labour set at 17.5 € $h^{-1}$, can range 3.98 to 2.88 € $t^{-1}$ according to the distance. The collection costs are strongly influenced by the regularity of the geometry of the land parcels.

In particular, for land parcels of small dimensions, productivity is severely limited by the geometry with a ratio of the sides close to 1 (for a side 100 m long corresponds a side with the same length), while the effect is smaller in surfaces of the same magnitude, but with a ratio of sides greater than 4:1. In large land parcels, the effect of the relationship among the sides on productivity is very limited (Figure 8).

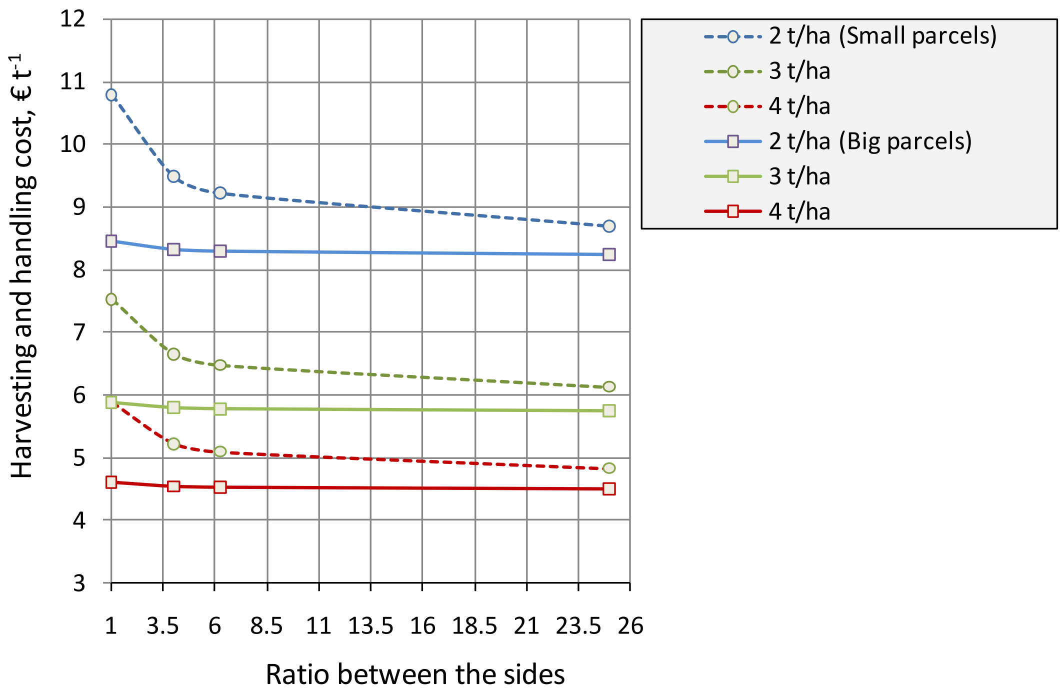


Figure 8 – Harvesting and handling cost over geometrical side ratio

### *3.1.2 Study of time and productivity*

For every survey has been registered the actual work times (advancement – AV, tying – LEG, deploying – SC), accessory times (turning – TAV, refuelling – TAS, in the field maintenance – TAC) and delay times (avoidable – TME, and unavoidable – TMI). The surveys gave a field average production capacity of 6.01 t $h^{-1}$ (with 50% of water content) and of 1.04 ha $h^{-1}$, corresponding to an average of 12 round bales per hour (Table 4).

Table 4 – Time distribution and productivity of harvest operations

| | Unit | A | B | C | Total |
|---|---|---|---|---|---|
| *Times distribution* | | | | | |
| Forwarding, AV | % | 50.94 | 47.81 | 57.89 | 51.12 |
| Tying, LEG | % | 15.29 | 11.52 | 12.26 | 12.95 |
| Discharge, SC | % | 4.27 | 3.24 | 3.60 | 3.67 |
| Turnings, TAV | % | 3.51 | 2.73 | 4.13 | 3.31 |
| Other accessory times, TAC/TAS | % | 9.71 | 5.93 | 4.17 | 6.81 |
| Avoidable delay times, TMe | % | 0.83 | 1.29 | 0.84 | 1.03 |
| Unavoidable delay times, TMi | % | 15.45 | 27.49 | 17.10 | 21.11 |
| TOTAL | h | 2.66 | 2.72 | 1.38 | 6.76 |
| *Productivity* | | | | | |
| Real capacity *(delay times included)* | t $h^{-1}$ | 5.97 | 5.80 | 6.49 | 6.01 (mean) |
| | ha $h^{-1}$ | 1.22 | 0.92 | 1.03 | 1.04 (mean) |
| Operative capacity *(delay times excluded)* | t $h^{-1}$ | 7.52 | 7.82 | 7.93 | 7.75 (mean) |
| | ha $h^{-1}$ | 1.46 | 1.29 | 1.26 | 1.34 (mean) |

Overall a total number of 405.6 minutes was observed (excluding rest time, transfer and preparation of the machine at the farm) in three different collection sites. The results show that 67.74% (AV, LEG, SC) of the total time of utilization is the actual working time (TE), while 10.11% is within the overhead time (TAV, ACT and TAS). Delay times amounted to a total of about 22%. Times preventable deaths are minimal, while the inevitable delay time accounted for 21.11% of the total time of use.

In order to evaluate the overall operating time for the harvest of vine-shoots in the vine-growing units of the province with the minimum requirements for the use of the system studied, a model of productivity was defined, based on time of advancement along the row (AV, s100 ), the time of tying (LEG, s100), unloading (SC, s100) and turnings(TAV, s100).

For the time of advance was set a regression model (Table 5) that found significant its dependence on the density of vine-shoots (DN, $t^{-1}$) and the distance travelled (D, m), while the distributions of phases of times, tying and unloading were monitored by the Kolmogorov-Smirnov statistical test (Table 6).

Table 6 - Kolmogorov-Smirnov statistical test

| Model | Sum of squares | df | Average of squares | F | Sign. |
|---|---|---|---|---|---|
| Regression | 17154.3 | 2 | 8577.156 | 181.704 | 0.000 |
| Residual | 3681.9 | 78 | 47.204 | | |
| Total | 20836.2 | 80 | | | |

| | Non-standardized coefficients | | t | Sign. | Confidence Interval 95.0% | |
|---|---|---|---|---|---|---|
| | B | Dev. St. | | | Lower limit | Upper limit |
| A | -46.460 | 35.849 | -1.296 | 0.029 | -117.830 | 24.911 |
| Ln(DN) | 60.750 | 22.936 | 2.649 | 0.010 | 15.088 | 106.411 |
| D | 0.571 | 0.071 | 8.096 | 0.000 | 0.431 | 0.712 |

| Stage | | Observations | Distribution | Average | St. Dev. | 2-rows Asymp. Sign. |
|---|---|---|---|---|---|---|
| | | n. | Type | $s_{100}$ | $s_{100}$ | *p-value* |
| Tying | LEG | 83 | Normal | 74.12 | 20.96 | 0.239 |
| Discharge | SC | 83 | Normal | 4.88 | 2.34 | 0.181 |
| Turnings | TAV | 60 | Normal | 26.17 | 4.06 | 0.153 |

The results of the times analysis have been Integrated into a model for determining the periods of utilization in the field TU (h) and its relative productivity model P (t $h^{-1}$) to be applied subsequently to the database of the vine-growing units.

For an area of vines (S, ha), once defined the density per hectare (DN, $t^{-1}$) of vine-shoots, the overall length of the rows in which they are arranged (D, m), the average weight of round bales (M , t), the number of turnings (nTAV) in relation to the geometry and to the planting plot, the average weight of round bales (M, t) and the number of operations of tying and unloading ($DN * S * M^{-1}$ ), the function of gross productivity of collection and baling in the field can then be calculated as:

$$P = \frac{DN*S}{\left(\frac{-46.460 + 60.750*Ln(DN)+0.571*D+\left(nTAV * TAV + (LEG + SC)*\left(\frac{(DN*S)}{M}\right)\right)}{6000}\right) * \mu}$$

where TAV is the average turning time (s100), LEG the average time of binding, SC the average discharge time (s100) and μ the coefficient of real utilization (ratio of net work time over the usage average time, highlighted in the study) that, for the studied sites, corresponds to 0.776.

The usage time (TU) is instead defined as

$$TU = \left(\frac{-46.460 + 60.750*Ln(DN)+0.571*D+\left(nTAV * TAV + (LEG + SC)*\left(\frac{(DN*S)}{M}\right)\right)}{6000}\right) * \mu$$

The estimated productivity for the transport of round bales (one per travel) from the field to the temporary storage area (Pm, t $h^{-1}$) was evaluated in relation to the average distance (D, m) of the round bales from the same storage area:

$$P_m = -0.0851\ D + 88.103$$

### *3.1.3 Classification of vineyard*

The vine-growing units covered by the vineyard register of the Veneto in the province of Treviso, were classified according to the technical possibility of adopting certain types of harvesting and processing systems.

This allowed to evaluate the potential availability of vine-shoots in relation to the machinery system used for the harvesting and at local municipalities (see Annex).

The analysis result shows that the RTA system (large round baler) can be applied for the harvest of about 50 000 tons (50% CI) of vine-shoots, which corresponds to 72% of the available potential in the province (Table 7).

Table 7 - Evaluation of the potential availability of vine-shoots in relation to the machinery system

| | W.C. | 50% | 11% | DRY |
|---|---|---|---|---|
| **Machine** | **System** | t | t | t |
| Round baler, ≥ 2.6 m of space among rows | RTA | 49683 | 27912 | 24842 |
| *of which falling in the form of ray or Bellussi farming* | *RTA** | *10344* | *5811* | *5172* |
| Round baler, 1.6 m ≤ space among rows > 2.6 m | RTB e RTC | 3620 | 2034 | 1810 |
| Other machines with dimensions suitable for harvest / mulching, 1.6 m ≤ space among rows > 2.0 m | TS | 6343 | 3563 | 3171 |
| Unavailability due to mechanical pruning | ND | 4832 | 2715 | 2416 |
| Availability in steep terrains or ≤ 1.6 m among rows | NC | 4511 | 2534 | 2255 |
| Surfaces not classified for inconsistencies in the databases | NC* | 688 | 387 | 344 |
| **TOTAL** | | 69677 | 39144 | 34839 |

Most of the surface in vineyard suitable for systems RTA and RTB is located in the southwest of the province, while the part suitable for TS RTC systems is located in the hills. In the hilly area is also concentrated most of the areas with vines NC due to the presence of several surfaces with planting plots on sloping land or with planting plots under 1.6 m among the rows.

### *3.1.4 Potential use of the RTA system*

The model of use (TU) previously determined on the basis of field surveys for the harvest system RTA has been applied to areas classified as suitable for this system (13 283 ha).

From the suitable areas, were subtracted the 3273 ha with ray or Bellussi farming system (RTA* classified system), as they present planting plots suitable only for tractors without cab (not suitable for winter operations such as the harvesting of vine-shoots). Moreover, given the particular planting plot with spacing among rows greater than 4.00 m, the GIS interpretation of parameters such as number of times and the distance of harvest may not be likely.

For the 33 180 particles processed and referred to the RTA system (for a total of 39 339 tons of vine-shoots with a water content of 50%), the average productivity of the yard was 5.19 t $h^{-1}$ with a standard deviation of 1.73 t $h^{-1}$. On about 5% of the surfaces, productivity varies between 6.7 t $h^{-1}$ and 7.2 t $h^{-1}$ (Figures 9-12).

This value - which is considered high - was considered likely assessed the limits of the applicability of model, time of use of RTA system in the GIS, and inaccuracy that may be generated from all the processing and queries between vineyard register and the cadastral map. The 3% of the surfaces shows instead a lower productivity to 4.0 t $h^{-1}$. Most of the availability of vine-shoots (443 t) on these surfaces is located in the hilly area.

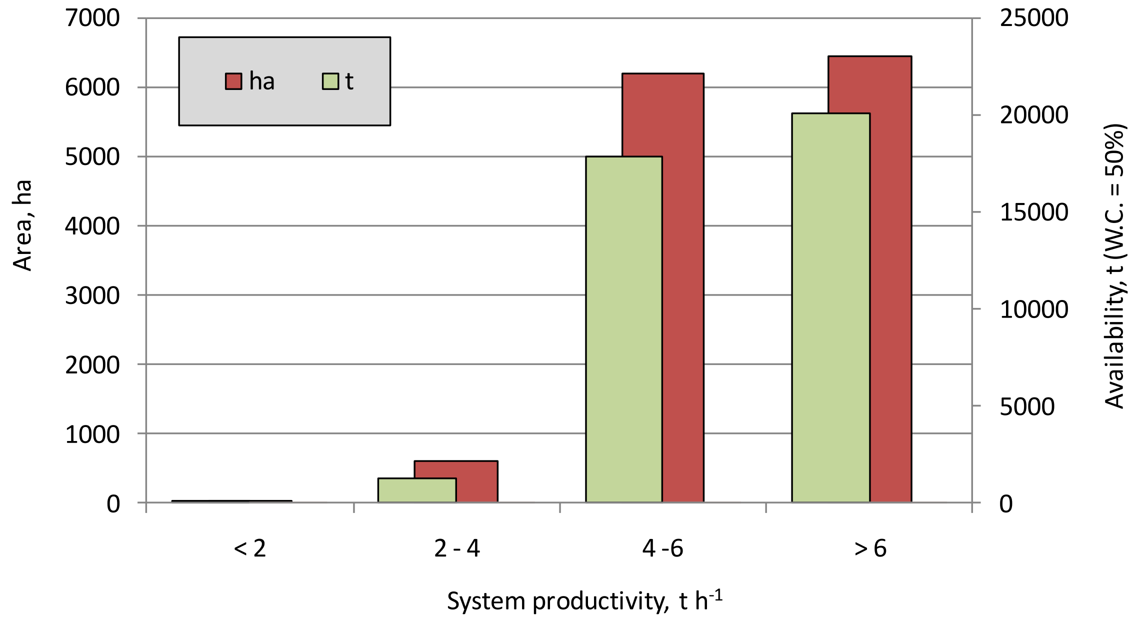


Figure 9 – RTA system productivity, ha

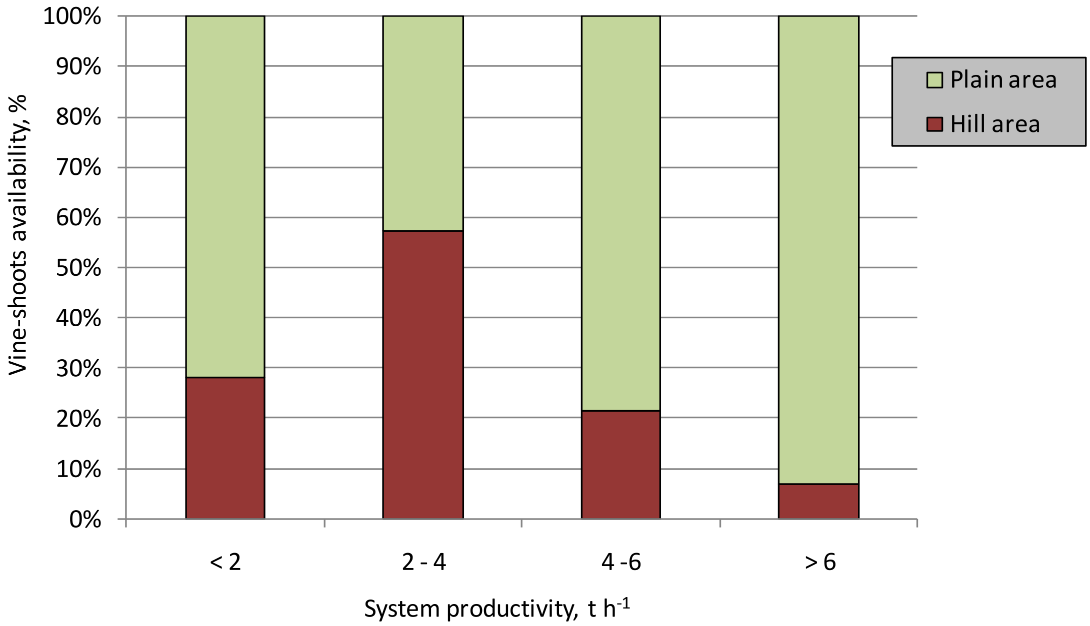


Figure 10 - RTA system productivity, %


Figure 11 –Availability map for the surveyed area of the RTA system

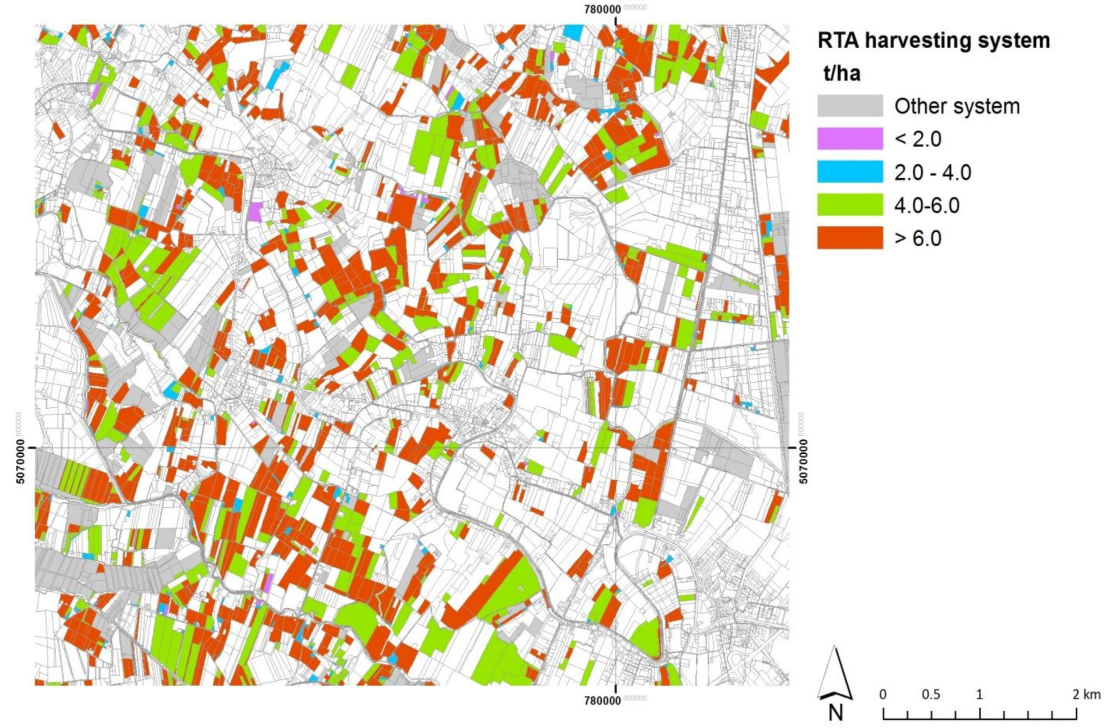


Figure 12 - Availability map for the surveyed area of the RTA system (larger scale)

## 3.2 Transport

### 3.2.1 *Study of time and productivity*

Here is the study of the distribution of the times (Table 8) recorded for the different phases analyzed in the transport of round bales to the platform by means of a tractor (107 kW) and three-axle trailer (carrying capacity of approximately 12 t).

Table 8 – Transport times distribution

| Stage | Observations | Distribution | Average | St. Dev. | 2-rows Asymp. Sign. |
|---|---|---|---|---|---|
| Conferral | n. | Type | km $h^{-1}$ | km $h^{-1}$ | *p-value* |
| Asphalt, loaded | 20 | Normal | 31.760 | 4.553 | 0.110 |
| Asphalt, unloaded | 20 | Normal | 27.635 | 3.476 | 0.221 |
| Gravel road, loaded | 17 | Normal | 12.312 | 3.072 | 0.514 |
| Gravel road, unloaded | 17 | Normal | 13.124 | 3.434 | 0.909 |
| Handling | n° | Type | $s_{100}$/unit | $s_{100}$/unit | *p-value* |
| Loaded | 16 | Normal | 13.132 | 3.434 | 0.859 |
| Unloaded | 16 | Normal | 15.381 | 4.500 | 0.835 |
| Bale untying | 28 | Normal | 133.289 | 7.013 | *0.238* |
| Chipping | n° | Type | $s_{100}$ | $s_{100}$ | *p-value* |
| Per bale | 45 | Normal | 134.091 | 28.236 | 0.805 |
| Delay times | 19 | Erlag | 206.500 | 213.471 | 0.166 |
| Delay times intervals | 19 | Erlag | 41.210 | 16.7252 | 0.222 |

The measurements were carried out in August 2010, about six months from the operation of collection in the field. The maximum load corresponded to 22 round bales for every travel, equivalent to a load of 7.6 t of vine-shoots with water content of about 11%.

On the basis of observations made we can define the productivity of the supplying system according to the distance and the type of road between the site and the temporary storage platform (Figure 13).

From the study of transportation times, and loading and unloading of round bales times, has been possible to determine at first a model of productivity in relation to the distance of conferral, and then a model for the assessment of unitary costs of transfer (Figure 14).

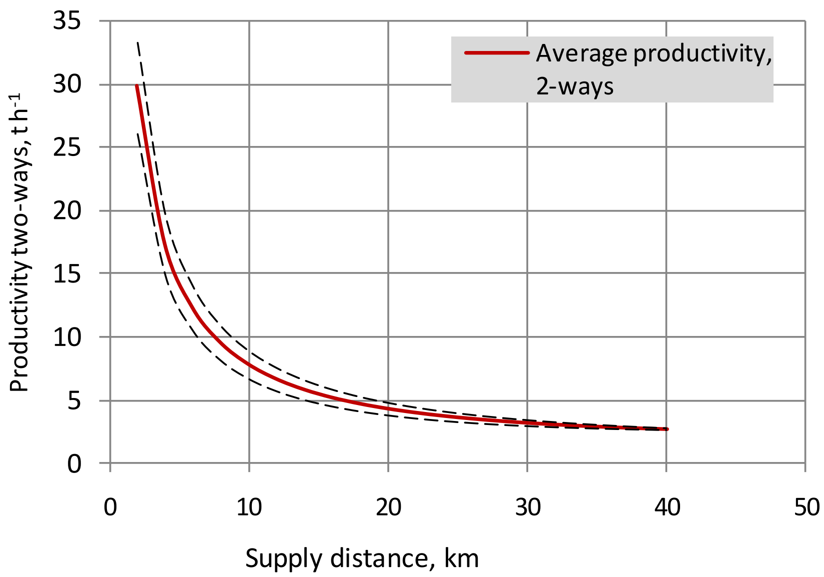


Figure 13 – Supplying system productivity

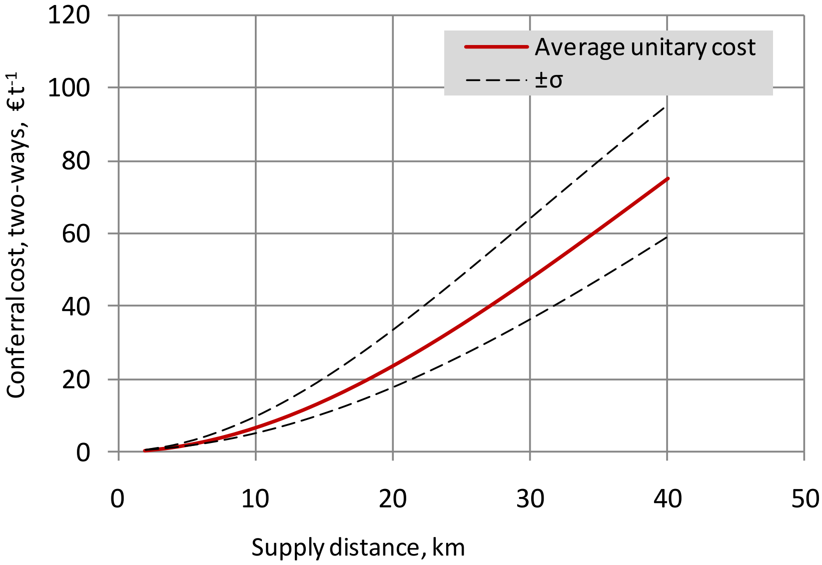

Figure 14 - Supplying system conferral cost

The harvest of about 39 339 t of vine-shoots requires 3413 hours of work. Given that the harvesting period extends for three months, from January to March, a useful period of 90 days with daily shifts of 8 hours can be considered.

The coefficient of workability, as defined in Lazzari and Mazzetto (2005), was estimated at 0.65, given the data of rainfall (> 5 mm day -1) for the eastern province of Treviso in the period from January to February 2010. Consequently, the workability hours for the harvesting period can be estimated at 468. For the collection of vine-shoots in areas classified as suitable for the RTA system, 6-7 round balers could then be used.

## 3.3 Chipping

### *3.3.1 Productivity and chipping costs*

The chipping operation was conducted at a platform located in a disused farm center and in an agricultural area. The machine used was a chipper mounted on a truck and driven the same truck engine (257 kW). The chipper had a supply system consisting of a belt of >1.2 width and of a roll of 1.2 m with an excursion of 0.8 cm in height. The machine has been chosen by the technicians of the COOAL cooperative because of the characteristics of the supply system, that allows the use of round bales with dimensions 1.50x 1.20 m without any preliminary action of disintegration.

From the study of working times (Figure 15), the actual chipping time represented 77% of the total working time. The Inevitable delay times, which included the lubrication of machine, the sharpening and the changing of the knives, refuelling, cooling (about 50% of the inevitable delay times) and movements/manoeuvres, accounted for 15% of the total time. The chipping operation showed a gross productivity of 9.93 t $h^{-1}$ and a corresponding net productivity of 7.65 t $h^{-1}$ (water content 11%).

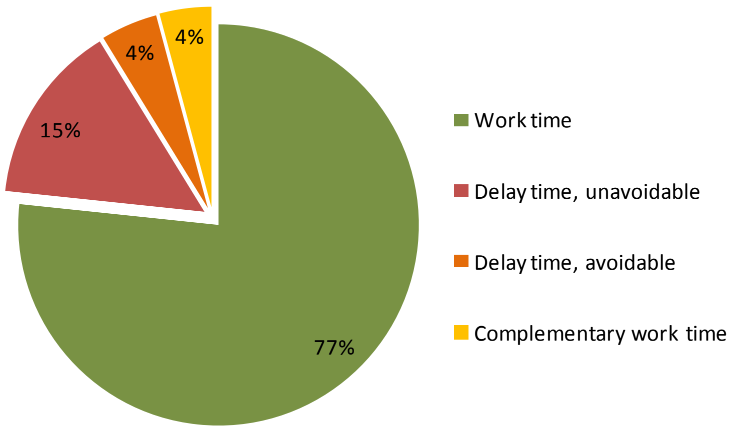


Figure 15 - Chipping time distribution

The cost of chipping at the platform has been set equal to the cost demanded by chipping service (200 € $h^{-1}$), while there were an estimated hourly cost of € 43.19 $h^{-1}$ (including the operator) for a tractor (68 kW) fitted with a fork front loader for moving the round bales, and the cost of untying of the round bales (performed by two operators) of 35 € $h^{-1}$.

The total cost of chipping and handling at the platform can be estimated at between 33.8 and 38.3 € $t^{-1}$ (average of 11% water content).

### *3.3.2 Simulation of the chipping process*

The study and analysis of the timing of different stages of work for the chipping operation (transport, weighing, unloading, handling, untying and chipping) have defined the functions and algorithms for implementing the simulation model to evaluate the logistics operation.

The application of the model has considered a sequence of scenarios for a sensitivity analysis - in relation to the conferral distance - to the continuity of supply to the chipper. The goal of the analysis was to assess the minimum amount of round bales to be piled at the platform in the days before chipping to ensure the continued feeding of the machine, in case during the term of chipping the flow of incoming round bales to the platform should be insufficient to ensure the continuity of the operation of chipping.

For a better representation of reality, the inputs of model considered the extraction of a random number of 846 temporary storage facilities, distributed within a distance of 40 km with a potential of 10 000 tonnes of vine-shoots (water content 11%), corresponding to approximately 33 000 round bales. The sensitivity analysis considered the sequence of 9 settings that provided the increase of the maximum distance from 5 km to 40 km, taking the sites from the list of 846 potential areas.

The elaboration led to the setting of a graph (Figure 16), which represents the minimum number of round bales that have to be pre-conferred (round bales in storage) to the platform in the days before the chipping, to ensure the continuity of the chipper at the moment where the incoming flow of the round bales from the outside (round bales transported) is slowed by the increased travel time for the increase in the collecting distance.

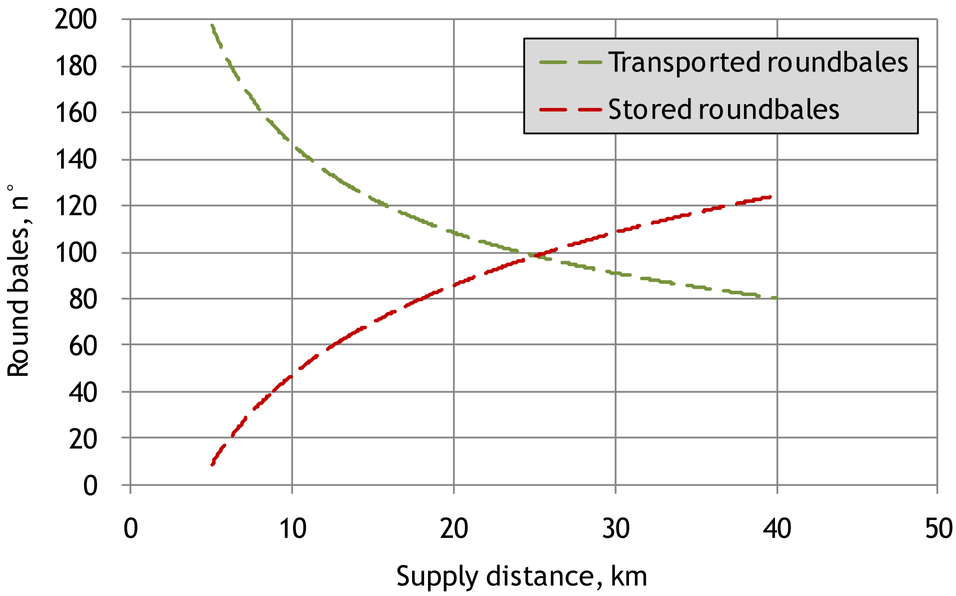


Figure 16 - Minimum number of pre-conferred round bales in relation to supply distance

From the values obtained from the sensitivity analysis has been possible to set a model for determining the minimum area for the storage of round bales at the platform (Figure 17), in relation to the goals of chipping (quantity produced) and in relation to a distance of conferral of 35 km. For the determination of the surface it was considered that a bale occupies an area of about 1 $m^2$, and that stacking does not go over three rows in height.

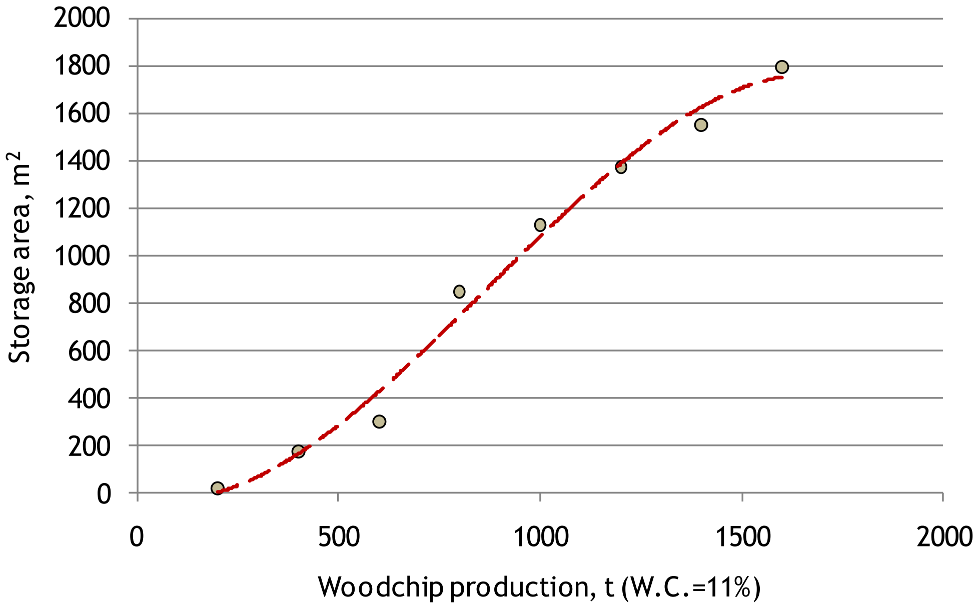


Figure 17 - Minimum platform storage area for the round bales, 35 km supply distance

### 3.4 Moisture content

From the measurements carried out in collaboration with the Cooperativa Agricola Alto-Livenza on the weight of the round bales and the simultaneous sampling of 3 samples of vine-shoots per bale, it was possible to check the progress of water content for both round bales covered with ground cloth, as for those uncovered (Figure 18, 19).

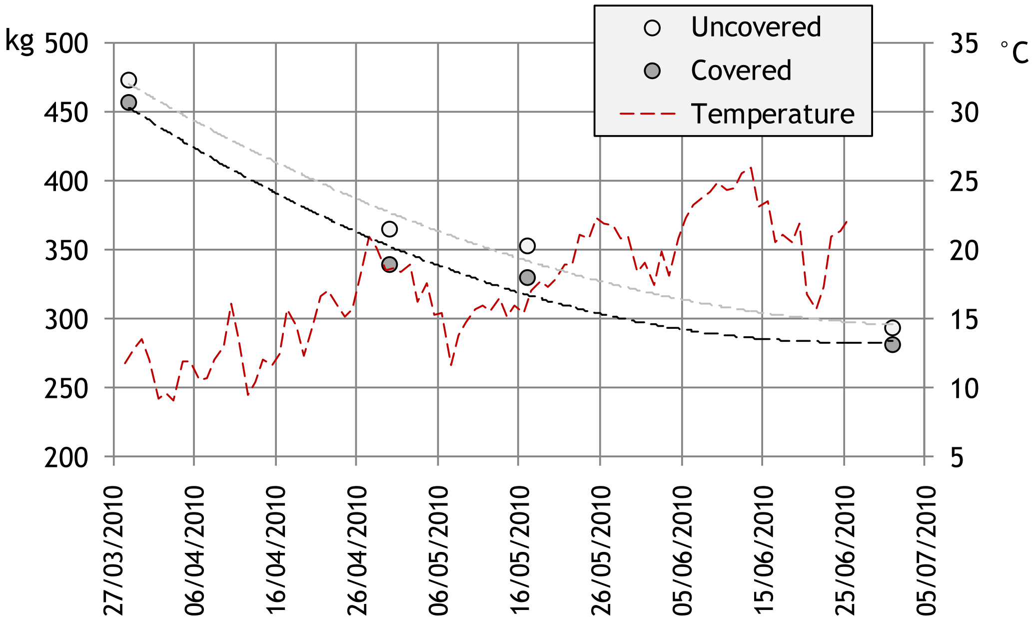


*Figure 18 - Covered/uncovered round bales water content, kg*

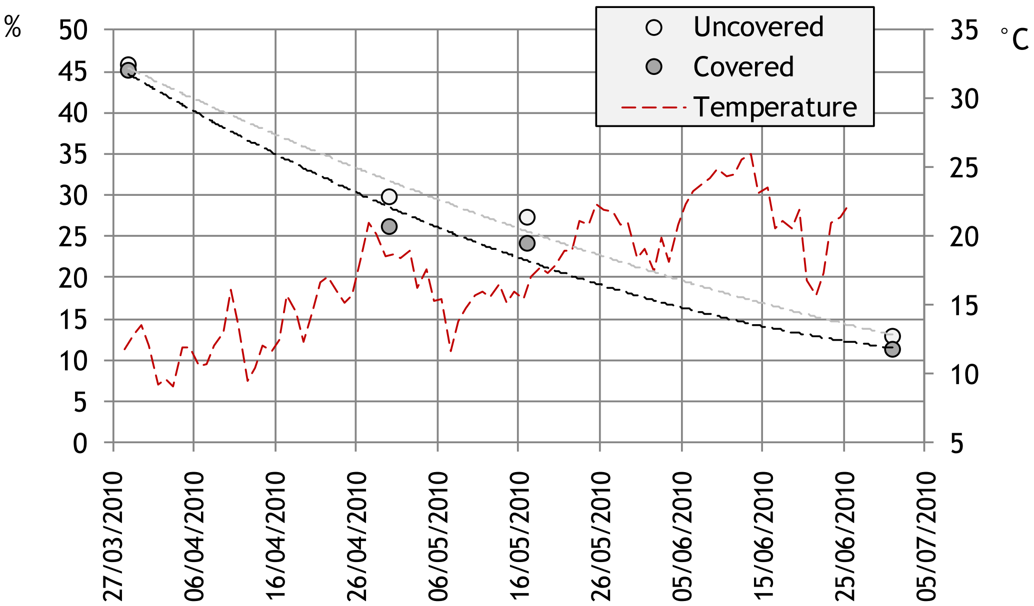


*Figure 19 - Covered/uncovered round bales water content, %*

## 3.5 Woodchips quality

### *3.5.1 Particle size distribution*

Woodchip with dimensions within the limits, designed for a small/medium systems with pushing supply system. Over-measures have an average diameter of 6 mm. The woodchip cannot be classified in any class of classification (EN 14961-1:2010) since it has high over-measures and fine fraction values (Table 9).

Table 9 – Woodchip analysis

| Sieve ID | | Fraction | Fraction mass | | |
|---|---|---|---|---|---|
| | | mm | g | % | $\%_{cumulated}$ |
| Fraction < 3.15 mm | | < 3.5 | 174.6 | 9.8 | 9.8 |
| 1° sieve (3.5 mm) | | 3.15-8 | 289.7 | 16.3 | 16.3 |
| 2° sieve (8 mm) | | 8-16 | 1019.2 | 57.3 | 73.6 |
| 3° sieve (16 mm) | | 16-45 | 230.43 | 13.0 | 86.6 |
| 4° sieve (45 mm) | | 45-63 | | 0.0 | 86.6 |
| 5° sieve (63 mm) | | 63-100 | | 0.0 | 86.6 |
| 6° sieve (100 mm) | | >100 | 63.94 | 3.6 | 3.6 |
| Total mass | | All | 1777.9 | 100.0 | - |

| | | |
|---|---|---|
| Number of over-measures (>100 mm) | 20 | n° |
| Length of the longest particle (if asked) | 21 | cm |
| Water content of the sample (M) | 11.66 | % |
| Density over loose m$^3$ of the sample | 188.5 | kg/$m^3_{loose}$ |

# 4 Conclusions

The analysis carried out within this report would like to support decision for setting the bases on further works, aimed to improve the use vine-shoots and other agricultural secondary products for energy production.

Nowadays, the agricultural world needs to find alternative ways of exploiting the most of its resources, that are scarcer year after year; it is even better if these new opportunities are found looking inside itself and its own already available resources.

After obtaining a reliable quantification of the vine-shoots availability on the Treviso province territory, an analysis was made on the various harvesting systems which can be found in the literature and on the market.

By comparing the technical data with data obtained from the cadastral register of the regional vineyard, a simulation model for plain areas has been developed, where are most of mechanized vineyards.

According to the results delivered by the model, the chosen system (tractor and large round baler), given the operative conditions, for harvesting of 39,300 t, requires 3,400 hours and 6-7 round balers for collect the adequate number of round bales.

This system is not issues-free: because of the many parts involved in it (several operator for the harvest, the collection and the transport of the round bales to the chipping platform, the handling and untying work of the round bales at the chipping site) it requires a careful preparation, and especially a very large space where to place the chipping platform and the subsequent storage of round bales.

However, over the years, after many tests and trials, the dedicated technologies have reached a good maturity. The machines used are reliable and show a strong operational performance with regard to many aspects.

Optimizing the organization of construction sites is causing a gradual reduction in the cost of collection and handling of biomass, but still offers room for further improvement and in any case have to aim to the need to reduce and streamline work processes and the establishment of "short" supply chains.

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# 6 Annexes

## 6.1 Technical quantification

Using a logical query on the GIS system, the following parameters has been determined for every municipality: average terrain slope (determined on the basis of the Digtal Terrain Model, 25x25 m resolution), average quantity of the vine-shoots per hectare, and the available quantities following the mechanical harvest characteristics.

The considered systems are below:

- RTA: tractor with large round baler system, ≥ 2.6 m among the rows , not limited in height, flat terrain
- RTA*: same as RTA, but with Bellussi or ray planting plot.
- RTB: tractor with medium size round baler system - distance among the rows between 2.0 and 2.6 m me, not limited in height, flat terrain
- RTC: tractor with small round baler system, distance among the rows between 1.6 and 2.0 m, not limited in height (> 1.8 m), flat terrain
- TS: tractor and shredder system, distance among the rows between 1.6 and 2.0 m, all forms of farming, even in gently sloping terrain
- ND: For installations where it can be applied to mechanized pruning and thus a potential of vine-shoots unavailable for the collection
- NC: planting distance on sloping ground, or ≤ 1.6 m among rows
- NC*: particles with errors in the data

| Municipality | System | Slope | Quantity | Area | | Availability | |
|---|---|---|---|---|---|---|---|
| | | % | t ha$^{-1}$ | ha | % | t | % |
| ALTIVOLE | RTA | 0.09 | 3.17 | 21.73 | 72.98 | 68.78 | 73.37 |
| ALTIVOLE | RTA* | - | 3.03 | 3.46 | 11.61 | 10.48 | 11.18 |
| ALTIVOLE | RTB | - | 3.25 | 0.47 | 1.59 | 1.54 | 1.64 |
| ALTIVOLE | RTC | 0.67 | 2.60 | 0.14 | 0.48 | 0.37 | 0.39 |
| ALTIVOLE | TS | - | 3.67 | 0.22 | 0.72 | 0.79 | 0.84 |
| ALTIVOLE | ND | - | 3.12 | 2.85 | 9.57 | 8.89 | 9.48 |
| ALTIVOLE | NC | 0.40 | 2.84 | 0.52 | 1.74 | 1.47 | 1.57 |
| ALTIVOLE | NC* | - | 3.65 | 0.39 | 1.31 | 1.42 | 1.51 |
| ARCADE | RTA | - | 3.24 | 48.93 | 54.13 | 158.38 | 54.87 |
| ARCADE | RTA* | - | 3.20 | 12.58 | 13.92 | 40.29 | 13.96 |
| ARCADE | RTB | - | 3.17 | 1.22 | 1.35 | 3.88 | 1.34 |
| ARCADE | RTC | - | - | - | - | - | - |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| ARCADE | TS | - | 3.59 | 0.20 | 0.22 | 0.71 | 0.25 |
| ARCADE | ND | - | 3.06 | 25.72 | 28.45 | 78.67 | 27.26 |
| ARCADE | NC | - | 3.87 | 1.65 | 1.82 | 6.37 | 2.21 |
| ARCADE | NC* | - | 3.46 | 0.09 | 0.10 | 0.32 | 0.11 |
| ASOLO | RTA | 1.40 | 3.54 | 22.61 | 49.16 | 80.03 | 48.64 |
| ASOLO | RTA* | - | 4.07 | 0.09 | 0.19 | 0.36 | 0.22 |
| ASOLO | RTB | 1.00 | 3.15 | 1.68 | 3.66 | 5.30 | 3.22 |
| ASOLO | RTC | 4.00 | 2.93 | 0.02 | 0.04 | 0.06 | 0.04 |
| ASOLO | TS | 13.81 | 3.67 | 14.51 | 31.56 | 53.22 | 32.34 |
| ASOLO | ND | 10.00 | 3.78 | 3.47 | 7.54 | 13.11 | 7.97 |
| ASOLO | NC | 23.08 | 3.45 | 3.61 | 7.85 | 12.46 | 7.57 |
| ASOLO | NC* | - | - | - | - | - | - |
| BORSO DEL GRAPPA | RTA | 1.92 | 1.83 | 2.35 | 42.58 | 4.30 | 42.45 |
| BORSO DEL GRAPPA | RTA* | - | - | - | - | - | - |
| BORSO DEL GRAPPA | RTB | 6.00 | 1.60 | 0.25 | 4.53 | 0.40 | 3.95 |
| BORSO DEL GRAPPA | RTC | - | - | - | - | - | - |
| BORSO DEL GRAPPA | TS | 11.50 | 1.85 | 2.44 | 44.22 | 4.52 | 44.62 |
| BORSO DEL GRAPPA | ND | - | - | - | - | - | - |
| BORSO DEL GRAPPA | NC | 12.75 | 2.00 | 0.33 | 6.00 | 0.66 | 6.52 |
| BORSO DEL GRAPPA | NC* | 48.00 | 1.70 | 0.15 | 2.67 | 0.25 | 2.47 |
| BREDA DI PIAVE | RTA | - | 3.11 | 140.47 | 84.41 | 436.17 | 84.95 |
| BREDA DI PIAVE | RTA* | 0.08 | 3.01 | 14.79 | 8.89 | 44.51 | 8.67 |
| BREDA DI PIAVE | RTB | - | 2.71 | 2.64 | 1.59 | 7.16 | 1.39 |
| BREDA DI PIAVE | RTC | - | 4.05 | 0.50 | 0.30 | 2.02 | 0.39 |
| BREDA DI PIAVE | TS | - | - | - | - | - | - |
| BREDA DI PIAVE | ND | - | 3.01 | 2.90 | 1.74 | 8.73 | 1.70 |
| BREDA DI PIAVE | NC | - | 2.93 | 4.65 | 2.80 | 13.65 | 2.66 |
| BREDA DI PIAVE | NC* | - | 2.61 | 0.45 | 0.27 | 1.18 | 0.23 |
| CAERANO DI SAN MARCO | RTA | 1.70 | 3.64 | 46.55 | 86.83 | 169.55 | 86.38 |
| CAERANO DI SAN MARCO | RTA* | 0.50 | 4.04 | 0.15 | 0.28 | 0.61 | 0.31 |
| CAERANO DI SAN MARCO | RTB | 1.00 | 3.75 | 3.05 | 5.68 | 11.42 | 5.82 |
| CAERANO DI SAN MARCO | RTC | - | - | - | - | - | - |
| CAERANO DI SAN MARCO | TS | 4.00 | 4.02 | 2.22 | 4.14 | 8.93 | 4.55 |
| CAERANO DI SAN MARCO | ND | 3.00 | 3.20 | 0.37 | 0.69 | 1.19 | 0.61 |
| CAERANO DI SAN MARCO | NC | 2.38 | 3.65 | 0.83 | 1.55 | 3.03 | 1.54 |
| CAERANO DI SAN MARCO | NC* | 2.47 | 3.52 | 0.44 | 0.83 | 1.56 | 0.79 |
| CAPPELLA MAGGIORE | RTA | 2.07 | 1.97 | 71.38 | 56.09 | 140.78 | 58.58 |
| CAPPELLA MAGGIORE | RTA* | 3.71 | 1.84 | 0.97 | 0.76 | 1.79 | 0.74 |
| CAPPELLA MAGGIORE | RTB | 3.00 | 1.68 | 0.13 | 0.10 | 0.21 | 0.09 |
| CAPPELLA MAGGIORE | RTC | 2.00 | 1.67 | 0.27 | 0.21 | 0.45 | 0.19 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| CAPPELLA MAGGIORE | TS | 16.24 | 1.80 | 35.98 | 28.27 | 64.72 | 26.93 |
| CAPPELLA MAGGIORE | ND | 5.67 | 1.96 | 2.02 | 1.59 | 3.96 | 1.65 |
| CAPPELLA MAGGIORE | NC | 27.14 | 1.72 | 16.29 | 12.80 | 28.03 | 11.66 |
| CAPPELLA MAGGIORE | NC* | 16.00 | 1.71 | 0.23 | 0.18 | 0.39 | 0.16 |
| CARBONERA | RTA | 0.02 | 3.04 | 66.58 | 71.37 | 202.39 | 71.24 |
| CARBONERA | RTA* | - | 3.00 | 8.74 | 9.37 | 26.23 | 9.23 |
| CARBONERA | RTB | - | 3.10 | 15.76 | 16.90 | 48.86 | 17.20 |
| CARBONERA | RTC | - | - | - | - | - | - |
| CARBONERA | TS | - | - | - | - | - | - |
| CARBONERA | ND | - | 2.79 | 0.66 | 0.71 | 1.85 | 0.65 |
| CARBONERA | NC | - | 3.09 | 1.53 | 1.64 | 4.73 | 1.66 |
| CARBONERA | NC* | - | 3.85 | 0.01 | 0.01 | 0.05 | 0.02 |
| CASALE SUL SILE | RTA | 0.10 | 3.00 | 73.98 | 75.54 | 222.00 | 76.93 |
| CASALE SUL SILE | RTA* | - | 2.98 | 4.90 | 5.00 | 14.60 | 5.06 |
| CASALE SUL SILE | RTB | - | 2.96 | 2.12 | 2.16 | 6.26 | 2.17 |
| CASALE SUL SILE | RTC | - | - | - | - | - | - |
| CASALE SUL SILE | TS | 0.29 | 2.52 | 10.53 | 10.75 | 26.52 | 9.19 |
| CASALE SUL SILE | ND | - | 2.94 | 4.22 | 4.30 | 12.41 | 4.30 |
| CASALE SUL SILE | NC | 0.17 | 3.10 | 2.19 | 2.24 | 6.79 | 2.35 |
| CASALE SUL SILE | NC* | - | - | - | - | - | - |
| CASIER | RTA | 0.09 | 2.89 | 10.89 | 57.75 | 31.47 | 55.87 |
| CASIER | RTA* | - | 2.78 | 0.92 | 4.87 | 2.55 | 4.53 |
| CASIER | RTB | - | 3.22 | 5.33 | 28.25 | 17.16 | 30.46 |
| CASIER | RTC | - | 3.07 | 0.71 | 3.76 | 2.18 | 3.87 |
| CASIER | TS | - | - | - | - | - | - |
| CASIER | ND | - | - | - | - | - | - |
| CASIER | NC | 0.22 | 2.89 | 0.85 | 4.49 | 2.45 | 4.35 |
| CASIER | NC* | 0.33 | 3.14 | 0.17 | 0.88 | 0.52 | 0.92 |
| CASTELCUCCO | RTA | 2.03 | 1.90 | 10.09 | 40.94 | 19.19 | 42.59 |
| CASTELCUCCO | RTA* | - | - | - | - | - | - |
| CASTELCUCCO | RTB | 3.14 | 1.70 | 2.51 | 10.17 | 4.25 | 9.43 |
| CASTELCUCCO | RTC | 4.00 | 1.74 | 0.02 | 0.09 | 0.04 | 0.09 |
| CASTELCUCCO | TS | 13.92 | 1.76 | 5.31 | 21.53 | 9.36 | 20.77 |
| CASTELCUCCO | ND | 1.00 | 2.28 | 0.46 | 1.88 | 1.06 | 2.35 |
| CASTELCUCCO | NC | 29.06 | 1.78 | 6.26 | 25.39 | 11.16 | 24.77 |
| CASTELCUCCO | NC* | - | - | - | - | - | - |
| CASTELFRANCO VENETO | RTA | 0.03 | 3.22 | 21.85 | 54.24 | 70.32 | 53.02 |
| CASTELFRANCO VENETO | RTA* | - | - | - | - | - | - |
| CASTELFRANCO VENETO | RTB | 0.17 | 3.34 | 3.57 | 8.87 | 11.92 | 8.99 |
| CASTELFRANCO VENETO | RTC | - | 2.60 | 0.29 | 0.71 | 0.74 | 0.56 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| CASTELFRANCO VENETO | TS | - | 3.71 | 5.73 | 14.22 | 21.26 | 16.03 |
| CASTELFRANCO VENETO | ND | - | 3.21 | 8.65 | 21.47 | 27.80 | 20.96 |
| CASTELFRANCO VENETO | NC | - | 2.99 | 0.20 | 0.50 | 0.60 | 0.45 |
| CASTELFRANCO VENETO | NC* | - | - | - | - | - | - |
| CASTELLO DI GODEGO | RTA | 0.05 | 2.81 | 3.74 | 49.74 | 10.53 | 49.02 |
| CASTELLO DI GODEGO | RTA* | - | - | - | - | - | - |
| CASTELLO DI GODEGO | RTB | - | 2.81 | 0.69 | 9.21 | 1.95 | 9.08 |
| CASTELLO DI GODEGO | RTC | - | - | - | - | - | - |
| CASTELLO DI GODEGO | TS | - | 2.87 | 1.90 | 25.25 | 5.46 | 25.42 |
| CASTELLO DI GODEGO | ND | - | 2.98 | 1.18 | 15.66 | 3.51 | 16.34 |
| CASTELLO DI GODEGO | NC | - | 2.73 | 0.01 | 0.15 | 0.03 | 0.14 |
| CASTELLO DI GODEGO | NC* | - | - | - | - | - | - |
| CAVASO DEL TOMBA | RTA | 3.07 | 1.81 | 7.05 | 25.83 | 12.76 | 25.59 |
| CAVASO DEL TOMBA | RTA* | - | - | - | - | - | - |
| CAVASO DEL TOMBA | RTB | 6.00 | 1.66 | 0.57 | 2.09 | 0.95 | 1.91 |
| CAVASO DEL TOMBA | RTC | 2.00 | 2.03 | 1.43 | 5.22 | 2.90 | 5.82 |
| CAVASO DEL TOMBA | TS | 13.63 | 1.84 | 15.73 | 57.62 | 29.00 | 58.16 |
| CAVASO DEL TOMBA | ND | - | - | - | - | - | - |
| CAVASO DEL TOMBA | NC | 25.41 | 1.69 | 2.46 | 9.01 | 4.15 | 8.32 |
| CAVASO DEL TOMBA | NC* | 9.00 | 1.63 | 0.06 | 0.22 | 0.10 | 0.20 |
| CESSALTO | RTA | - | 3.03 | 311.92 | 65.16 | 944.03 | 65.29 |
| CESSALTO | RTA* | - | 2.76 | 6.32 | 1.32 | 17.42 | 1.20 |
| CESSALTO | RTB | - | 3.63 | 17.43 | 3.64 | 63.30 | 4.38 |
| CESSALTO | RTC | - | 2.99 | 6.01 | 1.26 | 18.00 | 1.24 |
| CESSALTO | TS | - | 3.25 | 3.45 | 0.72 | 11.21 | 0.78 |
| CESSALTO | ND | - | 2.69 | 75.63 | 15.80 | 203.10 | 14.05 |
| CESSALTO | NC | - | 3.28 | 56.21 | 11.74 | 184.14 | 12.74 |
| CESSALTO | NC* | - | 2.77 | 1.69 | 0.35 | 4.68 | 0.32 |
| CHIARANO | RTA | - | 2.99 | 335.84 | 70.45 | 1 004.61 | 69.63 |
| CHIARANO | RTA* | - | 3.06 | 56.59 | 11.87 | 172.94 | 11.99 |
| CHIARANO | RTB | - | 3.03 | 31.58 | 6.63 | 95.74 | 6.64 |
| CHIARANO | RTC | - | 2.87 | 3.21 | 0.67 | 9.20 | 0.64 |
| CHIARANO | TS | - | 2.78 | 0.16 | 0.03 | 0.45 | 0.03 |
| CHIARANO | ND | - | 3.33 | 32.99 | 6.92 | 109.78 | 7.61 |
| CHIARANO | NC | - | 3.09 | 10.15 | 2.13 | 31.42 | 2.18 |
| CHIARANO | NC* | - | 3.02 | 6.18 | 1.30 | 18.65 | 1.29 |
| CIMADOLMO | RTA | 0.05 | 3.26 | 178.20 | 56.60 | 580.48 | 57.03 |
| CIMADOLMO | RTA* | 0.05 | 3.23 | 99.09 | 31.47 | 319.82 | 31.42 |
| CIMADOLMO | RTB | 0.05 | 3.25 | 15.43 | 4.90 | 50.11 | 4.92 |
| CIMADOLMO | RTC | - | - | - | - | - | - |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| CIMADOLMO | TS | - | 3.28 | 3.19 | 1.01 | 10.46 | 1.03 |
| CIMADOLMO | ND | 0.12 | 2.99 | 14.34 | 4.55 | 42.80 | 4.20 |
| CIMADOLMO | NC | 0.03 | 2.89 | 1.61 | 0.51 | 4.65 | 0.46 |
| CIMADOLMO | NC* | - | 3.21 | 2.99 | 0.95 | 9.59 | 0.94 |
| CISON DI VALMARINO | RTA | 2.30 | 1.93 | 10.54 | 7.84 | 20.35 | 8.55 |
| CISON DI VALMARINO | RTA* | - | - | - | - | - | - |
| CISON DI VALMARINO | RTB | 1.86 | 1.67 | 1.26 | 0.94 | 2.10 | 0.88 |
| CISON DI VALMARINO | RTC | - | 2.35 | 0.13 | 0.10 | 0.31 | 0.13 |
| CISON DI VALMARINO | TS | 15.88 | 1.81 | 57.13 | 42.49 | 103.24 | 43.37 |
| CISON DI VALMARINO | ND | 21.00 | 1.96 | 3.24 | 2.41 | 6.36 | 2.67 |
| CISON DI VALMARINO | NC | 43.95 | 1.70 | 62.00 | 46.11 | 105.41 | 44.28 |
| CISON DI VALMARINO | NC* | 50.14 | 1.70 | 0.17 | 0.13 | 0.29 | 0.12 |
| CODOGNE | RTA | 0.01 | 3.50 | 184.62 | 48.88 | 646.86 | 50.81 |
| CODOGNE | RTA* | 0.03 | 3.27 | 149.57 | 39.60 | 489.03 | 38.41 |
| CODOGNE | RTB | - | 3.89 | 4.43 | 1.17 | 17.22 | 1.35 |
| CODOGNE | RTC | 0.25 | 2.60 | 3.29 | 0.87 | 8.55 | 0.67 |
| CODOGNE | TS | - | 3.16 | 11.26 | 2.98 | 35.57 | 2.79 |
| CODOGNE | ND | - | 3.17 | 10.65 | 2.82 | 33.81 | 2.66 |
| CODOGNE | NC | - | 2.99 | 13.20 | 3.49 | 39.40 | 3.09 |
| CODOGNE | NC* | - | 4.01 | 0.67 | 0.18 | 2.67 | 0.21 |
| COLLE UMBERTO | RTA | 1.32 | 1.76 | 154.28 | 57.44 | 272.00 | 56.18 |
| COLLE UMBERTO | RTA* | 2.27 | 1.80 | 8.54 | 3.18 | 15.37 | 3.17 |
| COLLE UMBERTO | RTB | 1.73 | 1.92 | 22.85 | 8.51 | 43.92 | 9.07 |
| COLLE UMBERTO | RTC | - | 1.67 | 0.53 | 0.20 | 0.88 | 0.18 |
| COLLE UMBERTO | TS | 12.67 | 1.83 | 47.44 | 17.66 | 86.82 | 17.93 |
| COLLE UMBERTO | ND | 5.92 | 1.82 | 24.86 | 9.26 | 45.36 | 9.37 |
| COLLE UMBERTO | NC | 7.98 | 2.19 | 5.28 | 1.97 | 11.55 | 2.39 |
| COLLE UMBERTO | NC* | 1.69 | 1.73 | 4.80 | 1.79 | 8.29 | 1.71 |
| CONEGLIANO | RTA | 1.67 | 1.76 | 285.11 | 36.35 | 500.59 | 36.65 |
| CONEGLIANO | RTA* | 1.38 | 1.79 | 9.28 | 1.18 | 16.56 | 1.21 |
| CONEGLIANO | RTB | 1.48 | 1.80 | 48.83 | 6.23 | 88.06 | 6.45 |
| CONEGLIANO | RTC | 3.00 | 1.76 | 1.46 | 0.19 | 2.57 | 0.19 |
| CONEGLIANO | TS | 14.30 | 1.71 | 357.72 | 45.60 | 612.17 | 44.82 |
| CONEGLIANO | ND | 10.33 | 1.93 | 22.06 | 2.81 | 42.56 | 3.12 |
| CONEGLIANO | NC | 16.90 | 1.71 | 56.23 | 7.17 | 96.39 | 7.06 |
| CONEGLIANO | NC* | 9.84 | 1.86 | 3.72 | 0.47 | 6.91 | 0.51 |
| CORDIGNANO | RTA | 0.63 | 3.47 | 211.31 | 75.47 | 732.25 | 75.40 |
| CORDIGNANO | RTA* | 0.13 | 3.38 | 9.20 | 3.28 | 31.10 | 3.20 |
| CORDIGNANO | RTB | 1.30 | 3.46 | 7.03 | 2.51 | 24.30 | 2.50 |
| CORDIGNANO | RTC | - | - | - | - | - | - |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| | | % | t ha$^{-1}$ | ha | % | t | % |
| CORDIGNANO | TS | 16.19 | 3.52 | 38.09 | 13.60 | 134.12 | 13.81 |
| CORDIGNANO | ND | - | 2.93 | 1.36 | 0.49 | 3.98 | 0.41 |
| CORDIGNANO | NC | 14.91 | 3.47 | 12.20 | 4.36 | 42.29 | 4.35 |
| CORDIGNANO | NC* | 1.29 | 3.77 | 0.83 | 0.30 | 3.14 | 0.32 |
| CORNUDA | RTA | 1.01 | 1.72 | 77.95 | 70.15 | 134.35 | 70.68 |
| CORNUDA | RTA* | - | - | - | - | - | - |
| CORNUDA | RTB | 2.50 | 1.66 | 2.02 | 1.82 | 3.37 | 1.77 |
| CORNUDA | RTC | - | 1.67 | 0.26 | 0.24 | 0.44 | 0.23 |
| CORNUDA | TS | 14.64 | 1.68 | 24.35 | 21.91 | 40.97 | 21.55 |
| CORNUDA | ND | - | 1.67 | 0.89 | 0.80 | 1.49 | 0.78 |
| CORNUDA | NC | 16.44 | 1.68 | 4.69 | 4.22 | 7.87 | 4.14 |
| CORNUDA | NC* | 7.33 | 1.67 | 0.96 | 0.86 | 1.60 | 0.84 |
| CRESPANO DEL GRAPPA | RTA | 3.38 | 1.96 | 3.44 | 74.67 | 6.74 | 74.97 |
| CRESPANO DEL GRAPPA | RTA* | - | - | - | - | - | - |
| CRESPANO DEL GRAPPA | RTB | 3.00 | 2.19 | 0.36 | 7.84 | 0.79 | 8.79 |
| CRESPANO DEL GRAPPA | RTC | - | - | - | - | - | - |
| CRESPANO DEL GRAPPA | TS | 8.75 | 1.81 | 0.81 | 17.49 | 1.46 | 16.24 |
| CRESPANO DEL GRAPPA | ND | - | - | - | - | - | - |
| CRESPANO DEL GRAPPA | NC | - | - | - | - | - | - |
| CRESPANO DEL GRAPPA | NC* | - | - | - | - | - | - |
| CROCETTA DEL MONTELLO | RTA | 1.08 | 3.67 | 27.62 | 46.50 | 101.50 | 48.72 |
| CROCETTA DEL MONTELLO | RTA* | 1.56 | 4.05 | 1.42 | 2.40 | 5.77 | 2.77 |
| CROCETTA DEL MONTELLO | RTB | 0.34 | 3.20 | 20.11 | 33.86 | 64.43 | 30.93 |
| CROCETTA DEL MONTELLO | RTC | - | 4.08 | 0.12 | 0.20 | 0.49 | 0.24 |
| CROCETTA DEL MONTELLO | TS | 13.77 | 3.57 | 10.04 | 16.89 | 35.82 | 17.19 |
| CROCETTA DEL MONTELLO | ND | - | - | - | - | - | - |
| CROCETTA DEL MONTELLO | NC | 4.00 | 3.68 | 0.07 | 0.12 | 0.27 | 0.13 |
| CROCETTA DEL MONTELLO | NC* | - | 3.33 | 0.01 | 0.02 | 0.04 | 0.02 |
| FARRA DI SOLIGO | RTA | 1.52 | 1.79 | 238.16 | 28.10 | 427.23 | 29.25 |
| FARRA DI SOLIGO | RTA* | 2.86 | 1.67 | 4.09 | 0.48 | 6.82 | 0.47 |
| FARRA DI SOLIGO | RTB | 1.72 | 2.06 | 23.38 | 2.76 | 48.06 | 3.29 |
| FARRA DI SOLIGO | RTC | 1.33 | 1.67 | 3.74 | 0.44 | 6.24 | 0.43 |
| FARRA DI SOLIGO | TS | 10.37 | 1.68 | 221.61 | 26.15 | 373.01 | 25.53 |
| FARRA DI SOLIGO | ND | 0.67 | 2.40 | 3.77 | 0.44 | 9.04 | 0.62 |
| FARRA DI SOLIGO | NC | 44.53 | 1.67 | 337.17 | 39.78 | 563.36 | 38.56 |
| FARRA DI SOLIGO | NC* | 22.62 | 1.73 | 15.60 | 1.84 | 27.07 | 1.85 |
| FOLLINA | RTA | 2.89 | 1.74 | 21.89 | 16.99 | 38.05 | 17.39 |
| FOLLINA | RTA* | - | - | - | - | - | - |
| FOLLINA | RTB | 3.10 | 1.67 | 3.34 | 2.59 | 5.57 | 2.55 |
| FOLLINA | RTC | 1.67 | 1.67 | 0.24 | 0.19 | 0.40 | 0.18 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| | | % | t ha$^{-1}$ | ha | % | t | % |
| FOLLINA | TS | 13.33 | 1.69 | 46.89 | 36.38 | 79.06 | 36.14 |
| FOLLINA | ND | - | - | - | - | - | - |
| FOLLINA | NC | 46.88 | 1.69 | 55.07 | 42.73 | 93.27 | 42.63 |
| FOLLINA | NC* | 21.64 | 1.67 | 1.45 | 1.13 | 2.43 | 1.11 |
| FONTANELLE | RTA | 0.02 | 3.19 | 651.47 | 54.68 | 2 080.49 | 55.00 |
| FONTANELLE | RTA* | 0.02 | 3.17 | 358.57 | 30.10 | 1 137.41 | 30.07 |
| FONTANELLE | RTB | 0.01 | 2.91 | 55.90 | 4.69 | 162.49 | 4.30 |
| FONTANELLE | RTC | - | 2.90 | 4.27 | 0.36 | 12.40 | 0.33 |
| FONTANELLE | TS | - | 3.19 | 6.19 | 0.52 | 19.72 | 0.52 |
| FONTANELLE | ND | - | 3.19 | 62.31 | 5.23 | 198.72 | 5.25 |
| FONTANELLE | NC | 0.02 | 3.19 | 14.23 | 1.19 | 45.44 | 1.20 |
| FONTANELLE | NC* | - | 3.28 | 38.48 | 3.23 | 126.17 | 3.34 |
| FONTE | RTA | 2.00 | 3.38 | 3.85 | 25.92 | 13.04 | 24.80 |
| FONTE | RTA* | - | - | - | - | - | - |
| FONTE | RTB | 2.40 | 3.90 | 2.35 | 15.83 | 9.19 | 17.48 |
| FONTE | RTC | 5.00 | 3.43 | 0.07 | 0.45 | 0.23 | 0.44 |
| FONTE | TS | 11.09 | 3.65 | 6.96 | 46.82 | 25.38 | 48.27 |
| FONTE | ND | 5.00 | 2.83 | 1.02 | 6.86 | 2.89 | 5.50 |
| FONTE | NC | 9.36 | 3.05 | 0.50 | 3.38 | 1.53 | 2.91 |
| FONTE | NC* | 1.00 | 2.94 | 0.11 | 0.73 | 0.32 | 0.61 |
| FREGONA | RTA | 2.49 | 1.76 | 7.48 | 12.03 | 13.15 | 11.83 |
| FREGONA | RTA* | - | - | - | - | - | - |
| FREGONA | RTB | 4.00 | 1.89 | 0.76 | 1.22 | 1.44 | 1.29 |
| FREGONA | RTC | - | - | - | - | - | - |
| FREGONA | TS | 15.37 | 1.77 | 38.51 | 61.93 | 68.29 | 61.41 |
| FREGONA | ND | - | - | - | - | - | - |
| FREGONA | NC | 34.96 | 1.84 | 15.43 | 24.81 | 28.31 | 25.46 |
| FREGONA | NC* | 28.00 | 1.67 | 0.01 | 0.01 | 0.01 | 0.01 |
| GAIARINE | RTA | 0.04 | 3.23 | 261.15 | 66.91 | 843.08 | 67.91 |
| GAIARINE | RTA* | 0.04 | 2.94 | 47.59 | 12.19 | 140.01 | 11.28 |
| GAIARINE | RTB | 0.04 | 3.22 | 51.87 | 13.29 | 166.97 | 13.45 |
| GAIARINE | RTC | 0.40 | 3.95 | 1.04 | 0.27 | 4.09 | 0.33 |
| GAIARINE | TS | - | 3.19 | 2.04 | 0.52 | 6.51 | 0.52 |
| GAIARINE | ND | - | 2.73 | 4.12 | 1.06 | 11.24 | 0.91 |
| GAIARINE | NC | - | 3.05 | 6.69 | 1.71 | 20.38 | 1.64 |
| GAIARINE | NC* | - | 3.12 | 15.77 | 4.04 | 49.17 | 3.96 |
| GIAVERA DEL MONTELLO | RTA | 0.63 | 3.33 | 45.12 | 46.45 | 150.42 | 44.94 |
| GIAVERA DEL MONTELLO | RTA* | 0.20 | 3.35 | 6.09 | 6.27 | 20.43 | 6.10 |
| GIAVERA DEL MONTELLO | RTB | 0.75 | 3.25 | 2.54 | 2.61 | 8.24 | 2.46 |
| GIAVERA DEL MONTELLO | RTC | 3.00 | 3.03 | 0.16 | 0.17 | 0.49 | 0.15 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| GIAVERA DEL MONTELLO | TS | 14.45 | 3.61 | 40.18 | 41.35 | 144.86 | 43.28 |
| GIAVERA DEL MONTELLO | ND | 9.00 | 3.34 | 1.90 | 1.96 | 6.35 | 1.90 |
| GIAVERA DEL MONTELLO | NC | 14.15 | 3.35 | 0.87 | 0.89 | 2.90 | 0.87 |
| GIAVERA DEL MONTELLO | NC* | 7.20 | 3.35 | 0.30 | 0.30 | 0.99 | 0.30 |
| GODEGA DI SANT'URBANO | RTA | 0.14 | 3.39 | 288.94 | 77.40 | 980.58 | 77.37 |
| GODEGA DI SANT'URBANO | RTA* | 0.07 | 3.27 | 56.50 | 15.14 | 184.73 | 14.58 |
| GODEGA DI SANT'URBANO | RTB | 0.24 | 3.77 | 13.84 | 3.71 | 52.17 | 4.12 |
| GODEGA DI SANT'URBANO | RTC | - | 3.73 | 1.79 | 0.48 | 6.66 | 0.53 |
| GODEGA DI SANT'URBANO | TS | - | 3.28 | 0.65 | 0.18 | 2.14 | 0.17 |
| GODEGA DI SANT'URBANO | ND | - | - | - | - | - | - |
| GODEGA DI SANT'URBANO | NC | 0.05 | 3.52 | 8.71 | 2.33 | 30.64 | 2.42 |
| GODEGA DI SANT'URBANO | NC* | - | 3.64 | 2.87 | 0.77 | 10.44 | 0.82 |
| GORGO AL MONTICANO | RTA | - | 3.13 | 301.93 | 56.57 | 944.06 | 57.49 |
| GORGO AL MONTICANO | RTA* | - | 3.05 | 63.23 | 11.85 | 192.68 | 11.73 |
| GORGO AL MONTICANO | RTB | - | 2.98 | 59.40 | 11.13 | 177.02 | 10.78 |
| GORGO AL MONTICANO | RTC | - | 3.68 | 2.80 | 0.52 | 10.31 | 0.63 |
| GORGO AL MONTICANO | TS | - | 3.25 | 1.37 | 0.26 | 4.45 | 0.27 |
| GORGO AL MONTICANO | ND | - | 2.92 | 85.52 | 16.02 | 249.69 | 15.20 |
| GORGO AL MONTICANO | NC | - | 3.32 | 18.55 | 3.47 | 61.49 | 3.74 |
| GORGO AL MONTICANO | NC* | - | 2.66 | 0.97 | 0.18 | 2.57 | 0.16 |
| ISTRANA | RTA | 0.03 | 2.88 | 4.97 | 65.67 | 14.34 | 62.21 |
| ISTRANA | RTA* | - | - | - | - | - | - |
| ISTRANA | RTB | - | 3.45 | 1.83 | 24.17 | 6.32 | 27.42 |
| ISTRANA | RTC | - | - | - | - | - | - |
| ISTRANA | TS | - | - | - | - | - | - |
| ISTRANA | ND | - | 3.14 | 0.73 | 9.60 | 2.28 | 9.89 |
| ISTRANA | NC | - | - | - | - | - | - |
| ISTRANA | NC* | - | 2.59 | 0.04 | 0.56 | 0.11 | 0.48 |
| LORIA | RTA | 0.14 | 2.64 | 1.29 | 90.21 | 3.41 | 90.21 |
| LORIA | RTA* | - | - | - | - | - | - |
| LORIA | RTB | - | - | - | - | - | - |
| LORIA | RTC | - | - | - | - | - | - |
| LORIA | TS | - | - | - | - | - | - |
| LORIA | ND | - | - | - | - | - | - |
| LORIA | NC | - | 2.64 | 0.14 | 9.79 | 0.37 | 9.79 |
| LORIA | NC* | - | - | - | - | - | - |
| MANSUE | RTA | 0.04 | 3.15 | 322.46 | 69.58 | 1 017.01 | 69.78 |
| MANSUE | RTA* | 0.00 | 2.93 | 60.08 | 12.96 | 175.93 | 12.07 |
| MANSUE | RTB | 0.06 | 3.31 | 51.72 | 11.16 | 170.97 | 11.73 |
| MANSUE | RTC | - | - | - | - | - | - |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| MANSUE | TS | - | 2.92 | 0.35 | 0.07 | 1.01 | 0.07 |
| MANSUE | ND | - | 3.22 | 24.18 | 5.22 | 77.86 | 5.34 |
| MANSUE | NC | 0.04 | 3.19 | 4.49 | 0.97 | 14.33 | 0.98 |
| MANSUE | NC* | - | 2.81 | 0.15 | 0.03 | 0.42 | 0.03 |
| MARENO DI PIAVE | RTA | 0.04 | 3.37 | 437.11 | 63.51 | 1 471.34 | 64.24 |
| MARENO DI PIAVE | RTA* | 0.03 | 3.25 | 171.48 | 24.92 | 557.76 | 24.35 |
| MARENO DI PIAVE | RTB | - | 3.19 | 18.36 | 2.67 | 58.53 | 2.56 |
| MARENO DI PIAVE | RTC | - | - | - | - | - | - |
| MARENO DI PIAVE | TS | - | 3.49 | 3.14 | 0.46 | 10.94 | 0.48 |
| MARENO DI PIAVE | ND | - | 3.08 | 35.67 | 5.18 | 109.91 | 4.80 |
| MARENO DI PIAVE | NC | 0.03 | 3.74 | 15.50 | 2.25 | 57.91 | 2.53 |
| MARENO DI PIAVE | NC* | 0.13 | 3.42 | 6.99 | 1.02 | 23.92 | 1.04 |
| MASER | RTA | 0.85 | 3.75 | 95.66 | 55.52 | 358.30 | 56.52 |
| MASER | RTA* | - | - | - | - | - | - |
| MASER | RTB | 1.11 | 3.35 | 1.69 | 0.98 | 5.66 | 0.89 |
| MASER | RTC | 1.00 | 3.28 | 9.14 | 5.31 | 29.95 | 4.72 |
| MASER | TS | 16.67 | 3.90 | 27.15 | 15.76 | 105.96 | 16.72 |
| MASER | ND | 10.91 | 3.23 | 19.87 | 11.53 | 64.08 | 10.11 |
| MASER | NC | 23.63 | 3.72 | 18.48 | 10.73 | 68.75 | 10.85 |
| MASER | NC* | 17.00 | 3.96 | 0.31 | 0.18 | 1.21 | 0.19 |
| MASERADA SUL PIAVE | RTA | 0.05 | 3.24 | 152.86 | 81.70 | 494.58 | 81.95 |
| MASERADA SUL PIAVE | RTA* | 0.02 | 3.19 | 15.94 | 8.52 | 50.87 | 8.43 |
| MASERADA SUL PIAVE | RTB | - | 3.10 | 5.74 | 3.07 | 17.80 | 2.95 |
| MASERADA SUL PIAVE | RTC | 0.07 | 3.04 | 6.83 | 3.65 | 20.78 | 3.44 |
| MASERADA SUL PIAVE | TS | - | 3.98 | 0.10 | 0.06 | 0.41 | 0.07 |
| MASERADA SUL PIAVE | ND | - | 3.06 | 1.50 | 0.80 | 4.60 | 0.76 |
| MASERADA SUL PIAVE | NC | 0.05 | 3.59 | 3.65 | 1.95 | 13.09 | 2.17 |
| MASERADA SUL PIAVE | NC* | 0.20 | 2.85 | 0.48 | 0.26 | 1.37 | 0.23 |
| MEDUNA DI LIVENZA | RTA | - | 3.13 | 133.15 | 84.65 | 416.69 | 85.39 |
| MEDUNA DI LIVENZA | RTA* | - | 2.73 | 1.61 | 1.02 | 4.38 | 0.90 |
| MEDUNA DI LIVENZA | RTB | - | 3.17 | 5.03 | 3.20 | 15.94 | 3.27 |
| MEDUNA DI LIVENZA | RTC | - | 2.64 | 0.06 | 0.04 | 0.17 | 0.03 |
| MEDUNA DI LIVENZA | TS | - | - | - | - | - | - |
| MEDUNA DI LIVENZA | ND | - | 2.91 | 16.97 | 10.79 | 49.47 | 10.14 |
| MEDUNA DI LIVENZA | NC | - | 3.00 | 0.35 | 0.22 | 1.06 | 0.22 |
| MEDUNA DI LIVENZA | NC* | - | 2.39 | 0.12 | 0.07 | 0.28 | 0.06 |
| MIANE | RTA | 1.43 | 1.69 | 22.57 | 7.69 | 38.07 | 7.73 |
| MIANE | RTA* | - | - | - | - | - | - |
| MIANE | RTB | 1.47 | 1.67 | 5.36 | 1.83 | 8.97 | 1.82 |
| MIANE | RTC | 1.33 | 1.68 | 0.40 | 0.14 | 0.67 | 0.14 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| MIANE | TS | 14.70 | 1.68 | 89.00 | 30.33 | 149.87 | 30.42 |
| MIANE | ND | 7.50 | 2.04 | 0.05 | 0.02 | 0.10 | 0.02 |
| MIANE | NC | 41.45 | 1.68 | 170.64 | 58.16 | 286.00 | 58.04 |
| MIANE | NC* | 28.16 | 1.68 | 5.38 | 1.83 | 9.06 | 1.84 |
| MOGLIANO VENETO | RTA | - | 2.98 | 80.96 | 64.10 | 241.06 | 65.05 |
| MOGLIANO VENETO | RTA* | - | 2.66 | 2.11 | 1.67 | 5.62 | 1.52 |
| MOGLIANO VENETO | RTB | - | 2.39 | 4.37 | 3.46 | 10.44 | 2.82 |
| MOGLIANO VENETO | RTC | - | 3.28 | 6.80 | 5.38 | 22.27 | 6.01 |
| MOGLIANO VENETO | TS | - | - | - | - | - | - |
| MOGLIANO VENETO | ND | - | 2.83 | 28.64 | 22.67 | 81.14 | 21.90 |
| MOGLIANO VENETO | NC | - | 2.92 | 3.13 | 2.48 | 9.14 | 2.47 |
| MOGLIANO VENETO | NC* | - | 3.11 | 0.29 | 0.23 | 0.90 | 0.24 |
| MONASTIER DI TREVISO | RTA | - | 3.35 | 253.72 | 79.87 | 849.63 | 80.46 |
| MONASTIER DI TREVISO | RTA* | - | 3.34 | 14.99 | 4.72 | 50.04 | 4.74 |
| MONASTIER DI TREVISO | RTB | - | 3.26 | 1.48 | 0.46 | 4.81 | 0.46 |
| MONASTIER DI TREVISO | RTC | - | 3.20 | 0.05 | 0.02 | 0.16 | 0.02 |
| MONASTIER DI TREVISO | TS | - | - | - | - | - | - |
| MONASTIER DI TREVISO | ND | - | 3.20 | 35.69 | 11.24 | 114.32 | 10.83 |
| MONASTIER DI TREVISO | NC | - | 3.17 | 11.53 | 3.63 | 36.50 | 3.46 |
| MONASTIER DI TREVISO | NC* | - | 2.56 | 0.22 | 0.07 | 0.55 | 0.05 |
| MONFUMO | RTA | 1.58 | 1.71 | 9.48 | 22.55 | 16.20 | 21.89 |
| MONFUMO | RTA* | - | - | - | - | - | - |
| MONFUMO | RTB | 2.33 | 1.68 | 0.88 | 2.08 | 1.47 | 1.99 |
| MONFUMO | RTC | 1.20 | 1.68 | 0.50 | 1.19 | 0.84 | 1.13 |
| MONFUMO | TS | 16.49 | 1.71 | 19.67 | 46.80 | 33.70 | 45.53 |
| MONFUMO | ND | 3.46 | 2.21 | 3.19 | 7.59 | 7.06 | 9.54 |
| MONFUMO | NC | 27.26 | 1.79 | 7.50 | 17.84 | 13.39 | 18.09 |
| MONFUMO | NC* | 11.17 | 1.67 | 0.82 | 1.94 | 1.36 | 1.84 |
| MONTEBELLUNA | RTA | 1.59 | 3.58 | 155.95 | 64.26 | 558.27 | 64.15 |
| MONTEBELLUNA | RTA* | 0.24 | 3.51 | 7.91 | 3.26 | 27.77 | 3.19 |
| MONTEBELLUNA | RTB | 1.83 | 3.45 | 2.63 | 1.08 | 9.07 | 1.04 |
| MONTEBELLUNA | RTC | 2.57 | 3.86 | 1.39 | 0.57 | 5.37 | 0.62 |
| MONTEBELLUNA | TS | 11.41 | 3.82 | 47.65 | 19.63 | 181.83 | 20.89 |
| MONTEBELLUNA | ND | 5.16 | 2.72 | 13.03 | 5.37 | 35.50 | 4.08 |
| MONTEBELLUNA | NC | 20.57 | 3.73 | 13.81 | 5.69 | 51.45 | 5.91 |
| MONTEBELLUNA | NC* | 7.90 | 3.06 | 0.34 | 0.14 | 1.03 | 0.12 |
| MORGANO | RTA | - | 2.85 | 0.57 | 97.95 | 1.63 | 97.60 |
| MORGANO | RTA* | - | - | - | - | - | - |
| MORGANO | RTB | - | - | - | - | - | - |
| MORGANO | RTC | - | - | - | - | - | - |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| MORGANO | TS | - | - | - | - | - | - |
| MORGANO | ND | - | - | - | - | - | - |
| MORGANO | NC | - | 3.33 | 0.01 | 2.05 | 0.04 | 2.40 |
| MORGANO | NC* | - | - | - | - | - | - |
| MORIAGO DELLA BATTAGLIA | RTA | 0.47 | 3.46 | 27.14 | 88.15 | 93.80 | 88.76 |
| MORIAGO DELLA BATTAGLIA | RTA* | - | - | - | - | - | - |
| MORIAGO DELLA BATTAGLIA | RTB | - | 3.97 | 0.06 | 0.19 | 0.23 | 0.22 |
| MORIAGO DELLA BATTAGLIA | RTC | - | - | - | - | - | - |
| MORIAGO DELLA BATTAGLIA | TS | - | 3.34 | 2.94 | 9.54 | 9.80 | 9.27 |
| MORIAGO DELLA BATTAGLIA | ND | - | 2.79 | 0.62 | 2.03 | 1.74 | 1.65 |
| MORIAGO DELLA BATTAGLIA | NC | 1.00 | 4.00 | 0.02 | 0.05 | 0.06 | 0.06 |
| MORIAGO DELLA BATTAGLIA | NC* | - | 2.99 | 0.02 | 0.05 | 0.05 | 0.05 |
| MOTTA DI LIVENZA | RTA | - | 3.00 | 574.08 | 76.67 | 1 723.63 | 76.23 |
| MOTTA DI LIVENZA | RTA* | - | 2.96 | 12.09 | 1.61 | 35.77 | 1.58 |
| MOTTA DI LIVENZA | RTB | - | 3.10 | 59.23 | 7.91 | 183.89 | 8.13 |
| MOTTA DI LIVENZA | RTC | - | 3.07 | 6.34 | 0.85 | 19.49 | 0.86 |
| MOTTA DI LIVENZA | TS | - | 2.83 | 10.16 | 1.36 | 28.80 | 1.27 |
| MOTTA DI LIVENZA | ND | - | 2.89 | 43.98 | 5.87 | 127.05 | 5.62 |
| MOTTA DI LIVENZA | NC | - | 3.36 | 39.24 | 5.24 | 131.83 | 5.83 |
| MOTTA DI LIVENZA | NC* | - | 2.92 | 3.60 | 0.48 | 10.52 | 0.47 |
| NERVESA DELLA BATTAGLIA | RTA | 0.89 | 3.47 | 111.28 | 49.39 | 385.84 | 48.39 |
| NERVESA DELLA BATTAGLIA | RTA* | 2.29 | 3.59 | 1.60 | 0.71 | 5.76 | 0.72 |
| NERVESA DELLA BATTAGLIA | RTB | 3.27 | 3.58 | 20.62 | 9.15 | 73.73 | 9.25 |
| NERVESA DELLA BATTAGLIA | RTC | 4.00 | 3.05 | 1.95 | 0.87 | 5.94 | 0.74 |
| NERVESA DELLA BATTAGLIA | TS | 13.23 | 3.65 | 72.87 | 32.34 | 265.94 | 33.35 |
| NERVESA DELLA BATTAGLIA | ND | 1.79 | 3.17 | 6.39 | 2.83 | 20.24 | 2.54 |
| NERVESA DELLA BATTAGLIA | NC | 16.19 | 3.86 | 9.12 | 4.05 | 35.22 | 4.42 |
| NERVESA DELLA BATTAGLIA | NC* | 3.71 | 3.18 | 1.48 | 0.66 | 4.69 | 0.59 |
| ODERZO | RTA | 0.00 | 3.18 | 575.12 | 54.99 | 1 827.35 | 55.54 |
| ODERZO | RTA* | 0.01 | 3.12 | 271.21 | 25.93 | 845.98 | 25.71 |
| ODERZO | RTB | - | 3.25 | 29.64 | 2.83 | 96.36 | 2.93 |
| ODERZO | RTC | - | 3.01 | 5.25 | 0.50 | 15.79 | 0.48 |
| ODERZO | TS | - | 3.42 | 4.17 | 0.40 | 14.27 | 0.43 |
| ODERZO | ND | 0.00 | 3.07 | 142.42 | 13.62 | 436.55 | 13.27 |
| ODERZO | NC | 0.02 | 2.94 | 14.31 | 1.37 | 42.07 | 1.28 |
| ODERZO | NC* | - | 3.05 | 3.83 | 0.37 | 11.69 | 0.36 |
| ORMELLE | RTA | 0.01 | 3.25 | 478.43 | 52.56 | 1 557.29 | 52.87 |
| ORMELLE | RTA* | 0.01 | 3.19 | 374.31 | 41.12 | 1 195.59 | 40.59 |
| ORMELLE | RTB | - | 3.59 | 20.75 | 2.28 | 74.42 | 2.53 |
| ORMELLE | RTC | - | 3.62 | 1.36 | 0.15 | 4.91 | 0.17 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| ORMELLE | TS | - | 3.76 | 8.07 | 0.89 | 30.35 | 1.03 |
| ORMELLE | ND | - | 2.93 | 17.03 | 1.87 | 49.96 | 1.70 |
| ORMELLE | NC | 0.01 | 3.38 | 8.32 | 0.91 | 28.14 | 0.96 |
| ORMELLE | NC* | - | 2.64 | 1.91 | 0.21 | 5.03 | 0.17 |
| ORSAGO | RTA | 0.22 | 3.33 | 109.48 | 82.64 | 364.77 | 82.88 |
| ORSAGO | RTA* | 0.12 | 3.12 | 16.04 | 12.11 | 50.02 | 11.36 |
| ORSAGO | RTB | - | 4.01 | 2.06 | 1.56 | 8.28 | 1.88 |
| ORSAGO | RTC | - | - | - | - | - | - |
| ORSAGO | TS | - | 3.13 | 0.27 | 0.20 | 0.83 | 0.19 |
| ORSAGO | ND | - | 2.62 | 0.60 | 0.45 | 1.57 | 0.36 |
| ORSAGO | NC | 0.06 | 3.69 | 3.68 | 2.77 | 13.57 | 3.08 |
| ORSAGO | NC* | 0.50 | 3.12 | 0.35 | 0.27 | 1.10 | 0.25 |
| PADERNO DEL GRAPPA | RTA | 4.05 | 1.65 | 5.41 | 69.80 | 8.94 | 70.23 |
| PADERNO DEL GRAPPA | RTA* | - | - | - | - | - | - |
| PADERNO DEL GRAPPA | RTB | 2.50 | 1.61 | 0.32 | 4.17 | 0.52 | 4.08 |
| PADERNO DEL GRAPPA | RTC | - | - | - | - | - | - |
| PADERNO DEL GRAPPA | TS | 10.33 | 1.62 | 2.02 | 26.03 | 3.27 | 25.69 |
| PADERNO DEL GRAPPA | ND | - | - | - | - | - | - |
| PADERNO DEL GRAPPA | NC | - | - | - | - | - | - |
| PADERNO DEL GRAPPA | NC* | - | - | - | - | - | - |
| PAESE | RTA | 0.05 | 3.06 | 22.67 | 76.25 | 69.37 | 78.06 |
| PAESE | RTA* | - | - | - | - | - | - |
| PAESE | RTB | - | - | - | - | - | - |
| PAESE | RTC | - | - | - | - | - | - |
| PAESE | TS | - | - | - | - | - | - |
| PAESE | ND | 0.20 | 2.76 | 6.97 | 23.45 | 19.26 | 21.67 |
| PAESE | NC | - | 2.75 | 0.09 | 0.29 | 0.24 | 0.27 |
| PAESE | NC* | - | - | - | - | - | - |
| PEDEROBBA | RTA | 1.18 | 1.76 | 61.43 | 66.74 | 108.33 | 66.94 |
| PEDEROBBA | RTA* | 3.00 | 1.71 | 0.11 | 0.11 | 0.18 | 0.11 |
| PEDEROBBA | RTB | 2.29 | 1.66 | 1.73 | 1.88 | 2.88 | 1.78 |
| PEDEROBBA | RTC | 1.75 | 1.64 | 0.63 | 0.68 | 1.03 | 0.64 |
| PEDEROBBA | TS | 13.64 | 1.69 | 15.02 | 16.32 | 25.46 | 15.73 |
| PEDEROBBA | ND | 5.80 | 2.41 | 2.54 | 2.76 | 6.11 | 3.78 |
| PEDEROBBA | NC | 22.76 | 1.69 | 9.85 | 10.71 | 16.62 | 10.27 |
| PEDEROBBA | NC* | 1.00 | 1.66 | 0.73 | 0.79 | 1.21 | 0.75 |
| PIEVE DI SOLIGO | RTA | 1.73 | 1.72 | 86.04 | 35.18 | 147.74 | 35.37 |
| PIEVE DI SOLIGO | RTA* | 5.00 | 1.65 | 0.20 | 0.08 | 0.33 | 0.08 |
| PIEVE DI SOLIGO | RTB | 0.16 | 1.67 | 9.16 | 3.75 | 15.30 | 3.66 |
| PIEVE DI SOLIGO | RTC | 1.63 | 1.78 | 4.45 | 1.82 | 7.94 | 1.90 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| PIEVE DI SOLIGO | TS | 10.53 | 1.71 | 62.69 | 25.63 | 107.42 | 25.72 |
| PIEVE DI SOLIGO | ND | 0.67 | 1.79 | 6.07 | 2.48 | 10.90 | 2.61 |
| PIEVE DI SOLIGO | NC | 38.02 | 1.69 | 74.38 | 30.41 | 125.38 | 30.02 |
| PIEVE DI SOLIGO | NC* | 25.03 | 1.68 | 1.59 | 0.65 | 2.67 | 0.64 |
| PONTE DI PIAVE | RTA | 0.01 | 3.22 | 530.04 | 41.52 | 1 708.14 | 42.32 |
| PONTE DI PIAVE | RTA* | 0.01 | 3.23 | 341.10 | 26.72 | 1 102.95 | 27.33 |
| PONTE DI PIAVE | RTB | 0.02 | 3.20 | 70.95 | 5.56 | 227.37 | 5.63 |
| PONTE DI PIAVE | RTC | - | 2.78 | 11.68 | 0.91 | 32.48 | 0.80 |
| PONTE DI PIAVE | TS | - | 3.05 | 7.95 | 0.62 | 24.25 | 0.60 |
| PONTE DI PIAVE | ND | 0.01 | 3.11 | 195.66 | 15.33 | 608.31 | 15.07 |
| PONTE DI PIAVE | NC | 0.02 | 2.77 | 107.73 | 8.44 | 298.17 | 7.39 |
| PONTE DI PIAVE | NC* | - | 3.00 | 11.47 | 0.90 | 34.46 | 0.85 |
| PONZANO VENETO | RTA | 0.03 | 3.05 | 43.12 | 79.37 | 131.60 | 79.62 |
| PONZANO VENETO | RTA* | - | 3.24 | 1.28 | 2.36 | 4.15 | 2.51 |
| PONZANO VENETO | RTB | - | - | - | - | - | - |
| PONZANO VENETO | RTC | - | - | - | - | - | - |
| PONZANO VENETO | TS | - | 1.14 | 0.31 | 0.56 | 0.35 | 0.21 |
| PONZANO VENETO | ND | - | 3.05 | 7.80 | 14.36 | 23.76 | 14.37 |
| PONZANO VENETO | NC | - | 3.08 | 1.51 | 2.78 | 4.64 | 2.81 |
| PONZANO VENETO | NC* | - | 2.53 | 0.31 | 0.58 | 0.79 | 0.48 |
| PORTOBUFFOLE | RTA | 0.07 | 3.10 | 20.46 | 49.78 | 63.36 | 48.73 |
| PORTOBUFFOLE | RTA* | 0.20 | 2.95 | 2.58 | 6.28 | 7.62 | 5.86 |
| PORTOBUFFOLE | RTB | - | 3.11 | 9.46 | 23.02 | 29.42 | 22.63 |
| PORTOBUFFOLE | RTC | - | - | - | - | - | - |
| PORTOBUFFOLE | TS | - | - | - | - | - | - |
| PORTOBUFFOLE | ND | - | - | - | - | - | - |
| PORTOBUFFOLE | NC | 0.11 | 3.47 | 8.41 | 20.45 | 29.13 | 22.40 |
| PORTOBUFFOLE | NC* | - | 2.60 | 0.19 | 0.47 | 0.50 | 0.38 |
| POSSAGNO | RTA | - | - | - | - | - | - |
| POSSAGNO | RTA* | - | - | - | - | - | - |
| POSSAGNO | RTB | - | - | - | - | - | - |
| POSSAGNO | RTC | - | - | - | - | - | - |
| POSSAGNO | TS | 8.00 | 1.91 | 0.88 | 100.00 | 1.68 | 100.00 |
| POSSAGNO | ND | - | - | - | - | - | - |
| POSSAGNO | NC | - | - | - | - | - | - |
| POSSAGNO | NC* | - | - | - | - | - | - |
| POVEGLIANO | RTA | 0.21 | 3.17 | 30.80 | 60.13 | 97.73 | 60.77 |
| POVEGLIANO | RTA* | 0.67 | 2.97 | 1.22 | 2.38 | 3.62 | 2.25 |
| POVEGLIANO | RTB | 0.50 | 3.33 | 0.60 | 1.18 | 2.01 | 1.25 |
| POVEGLIANO | RTC | - | 2.95 | 0.62 | 1.21 | 1.83 | 1.14 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| POVEGLIANO | TS | 0.50 | 3.49 | 0.32 | 0.62 | 1.11 | 0.69 |
| POVEGLIANO | ND | - | 3.01 | 15.16 | 29.60 | 45.63 | 28.37 |
| POVEGLIANO | NC | 0.25 | 3.48 | 2.01 | 3.92 | 6.99 | 4.35 |
| POVEGLIANO | NC* | - | 3.90 | 0.49 | 0.95 | 1.90 | 1.18 |
| PREGANZIOL | RTA | - | 2.95 | 25.10 | 48.65 | 74.11 | 48.21 |
| PREGANZIOL | RTA* | - | 2.73 | 3.88 | 7.51 | 10.59 | 6.89 |
| PREGANZIOL | RTB | - | 2.63 | 0.24 | 0.47 | 0.63 | 0.41 |
| PREGANZIOL | RTC | - | 2.98 | 10.56 | 20.48 | 31.53 | 20.51 |
| PREGANZIOL | TS | - | 3.00 | 1.04 | 2.01 | 3.11 | 2.02 |
| PREGANZIOL | ND | - | 3.13 | 10.69 | 20.71 | 33.46 | 21.77 |
| PREGANZIOL | NC | - | 3.12 | 0.09 | 0.17 | 0.28 | 0.18 |
| PREGANZIOL | NC* | - | - | - | - | - | - |
| QUINTO DI TREVISO | RTA | - | 2.81 | 5.18 | 98.03 | 14.58 | 97.98 |
| QUINTO DI TREVISO | RTA* | - | - | - | - | - | - |
| QUINTO DI TREVISO | RTB | - | - | - | - | - | - |
| QUINTO DI TREVISO | RTC | - | - | - | - | - | - |
| QUINTO DI TREVISO | TS | - | - | - | - | - | - |
| QUINTO DI TREVISO | ND | - | - | - | - | - | - |
| QUINTO DI TREVISO | NC | - | 2.88 | 0.10 | 1.97 | 0.30 | 2.02 |
| QUINTO DI TREVISO | NC* | - | - | - | - | - | - |
| REFRONTOLO | RTA | 1.79 | 1.69 | 73.19 | 21.75 | 124.01 | 21.48 |
| REFRONTOLO | RTA* | 3.00 | 1.66 | 0.61 | 0.18 | 1.02 | 0.18 |
| REFRONTOLO | RTB | 1.94 | 1.87 | 6.99 | 2.08 | 13.10 | 2.27 |
| REFRONTOLO | RTC | - | 1.60 | 0.05 | 0.01 | 0.08 | 0.01 |
| REFRONTOLO | TS | 13.72 | 1.71 | 187.79 | 55.80 | 321.26 | 55.63 |
| REFRONTOLO | ND | 7.67 | 2.27 | 2.06 | 0.61 | 4.66 | 0.81 |
| REFRONTOLO | NC | 28.22 | 1.72 | 61.20 | 18.19 | 105.20 | 18.22 |
| REFRONTOLO | NC* | 12.40 | 1.74 | 4.66 | 1.38 | 8.13 | 1.41 |
| RESANA | RTA | - | 2.69 | 1.60 | 94.12 | 4.31 | 94.31 |
| RESANA | RTA* | - | - | - | - | - | - |
| RESANA | RTB | - | - | - | - | - | - |
| RESANA | RTC | - | - | - | - | - | - |
| RESANA | TS | - | - | - | - | - | - |
| RESANA | ND | - | 2.60 | 0.10 | 5.88 | 0.26 | 5.69 |
| RESANA | NC | - | - | - | - | - | - |
| RESANA | NC* | - | - | - | - | - | - |
| REVINE LAGO | RTA | - | 1.50 | 0.02 | 4.18 | 0.03 | 3.66 |
| REVINE LAGO | RTA* | - | - | - | - | - | - |
| REVINE LAGO | RTB | - | - | - | - | - | - |
| REVINE LAGO | RTC | - | - | - | - | - | - |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| REVINE LAGO | TS | 18.40 | 1.64 | 0.34 | 71.47 | 0.56 | 68.29 |
| REVINE LAGO | ND | - | - | - | - | - | - |
| REVINE LAGO | NC | 28.00 | 2.00 | 0.06 | 11.49 | 0.11 | 13.41 |
| REVINE LAGO | NC* | 10.00 | 1.95 | 0.06 | 12.85 | 0.12 | 14.63 |
| RIESE PIO X | RTA | 0.03 | 3.07 | 7.87 | 77.83 | 24.19 | 74.98 |
| RIESE PIO X | RTA* | - | - | - | - | - | - |
| RIESE PIO X | RTB | - | - | - | - | - | - |
| RIESE PIO X | RTC | - | - | - | - | - | - |
| RIESE PIO X | TS | - | - | - | - | - | - |
| RIESE PIO X | ND | - | 4.05 | 1.01 | 9.97 | 4.08 | 12.65 |
| RIESE PIO X | NC | - | 3.29 | 0.98 | 9.72 | 3.23 | 10.01 |
| RIESE PIO X | NC* | - | 3.04 | 0.25 | 2.47 | 0.76 | 2.36 |
| RONCADE | RTA | - | 3.24 | 273.72 | 69.06 | 888.21 | 70.80 |
| RONCADE | RTA* | - | 2.92 | 3.73 | 0.94 | 10.91 | 0.87 |
| RONCADE | RTB | - | 3.10 | 35.04 | 8.84 | 108.51 | 8.65 |
| RONCADE | RTC | - | 3.05 | 3.01 | 0.76 | 9.19 | 0.73 |
| RONCADE | TS | - | 3.36 | 0.49 | 0.12 | 1.65 | 0.13 |
| RONCADE | ND | - | 2.89 | 72.14 | 18.20 | 208.39 | 16.61 |
| RONCADE | NC | - | 3.36 | 7.64 | 1.93 | 25.66 | 2.05 |
| RONCADE | NC* | - | 3.33 | 0.60 | 0.15 | 2.01 | 0.16 |
| SALGAREDA | RTA | - | 3.13 | 614.53 | 73.24 | 1 922.64 | 74.15 |
| SALGAREDA | RTA* | 0.01 | 2.99 | 75.74 | 9.03 | 226.83 | 8.75 |
| SALGAREDA | RTB | - | 3.15 | 39.04 | 4.65 | 122.92 | 4.74 |
| SALGAREDA | RTC | - | 3.85 | 14.50 | 1.73 | 55.78 | 2.15 |
| SALGAREDA | TS | - | 3.04 | 0.05 | 0.01 | 0.14 | 0.01 |
| SALGAREDA | ND | 0.03 | 2.71 | 79.47 | 9.47 | 215.66 | 8.32 |
| SALGAREDA | NC | 0.04 | 3.00 | 10.33 | 1.23 | 30.99 | 1.20 |
| SALGAREDA | NC* | - | 3.36 | 5.36 | 0.64 | 18.00 | 0.69 |
| SAN BIAGIO DI CALLALTA | RTA | 0.05 | 3.33 | 430.44 | 73.58 | 1 433.07 | 75.30 |
| SAN BIAGIO DI CALLALTA | RTA* | 0.09 | 3.15 | 60.37 | 10.32 | 190.23 | 10.00 |
| SAN BIAGIO DI CALLALTA | RTB | - | 3.50 | 4.04 | 0.69 | 14.15 | 0.74 |
| SAN BIAGIO DI CALLALTA | RTC | - | 2.92 | 11.38 | 1.95 | 33.29 | 1.75 |
| SAN BIAGIO DI CALLALTA | TS | - | - | - | - | - | - |
| SAN BIAGIO DI CALLALTA | ND | 0.27 | 2.66 | 52.36 | 8.95 | 139.09 | 7.31 |
| SAN BIAGIO DI CALLALTA | NC | 0.07 | 3.73 | 19.45 | 3.33 | 72.60 | 3.81 |
| SAN BIAGIO DI CALLALTA | NC* | - | 2.97 | 6.95 | 1.19 | 20.62 | 1.08 |
| SAN FIOR | RTA | 1.09 | 3.45 | 163.71 | 63.44 | 564.17 | 63.52 |
| SAN FIOR | RTA* | 0.31 | 3.32 | 30.40 | 11.78 | 100.91 | 11.36 |
| SAN FIOR | RTB | 0.53 | 3.65 | 8.01 | 3.10 | 29.21 | 3.29 |
| SAN FIOR | RTC | 4.00 | 3.41 | 3.22 | 1.25 | 10.99 | 1.24 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| SAN FIOR | TS | 10.55 | 3.66 | 31.16 | 12.08 | 114.16 | 12.85 |
| SAN FIOR | ND | 3.65 | 3.08 | 16.11 | 6.24 | 49.64 | 5.59 |
| SAN FIOR | NC | 5.50 | 3.53 | 4.74 | 1.84 | 16.74 | 1.88 |
| SAN FIOR | NC* | 4.33 | 3.26 | 0.71 | 0.28 | 2.32 | 0.26 |
| SAN PIETRO DI FELETTO | RTA | 2.35 | 1.72 | 188.47 | 31.38 | 324.36 | 31.28 |
| SAN PIETRO DI FELETTO | RTA* | 3.41 | 1.68 | 5.39 | 0.90 | 9.05 | 0.87 |
| SAN PIETRO DI FELETTO | RTB | 2.52 | 1.73 | 19.55 | 3.26 | 33.88 | 3.27 |
| SAN PIETRO DI FELETTO | RTC | 3.40 | 1.68 | 1.93 | 0.32 | 3.23 | 0.31 |
| SAN PIETRO DI FELETTO | TS | 14.26 | 1.72 | 327.76 | 54.57 | 564.38 | 54.43 |
| SAN PIETRO DI FELETTO | ND | 8.86 | 1.92 | 6.79 | 1.13 | 13.06 | 1.26 |
| SAN PIETRO DI FELETTO | NC | 21.94 | 1.76 | 41.99 | 6.99 | 74.02 | 7.14 |
| SAN PIETRO DI FELETTO | NC* | 10.19 | 1.69 | 8.76 | 1.46 | 14.82 | 1.43 |
| SAN POLO DI PIAVE | RTA | 0.01 | 3.21 | 440.72 | 44.06 | 1 414.67 | 44.05 |
| SAN POLO DI PIAVE | RTA* | 0.00 | 3.21 | 393.05 | 39.29 | 1 259.94 | 39.24 |
| SAN POLO DI PIAVE | RTB | 0.04 | 3.38 | 39.05 | 3.90 | 131.83 | 4.11 |
| SAN POLO DI PIAVE | RTC | 0.17 | 2.87 | 2.28 | 0.23 | 6.54 | 0.20 |
| SAN POLO DI PIAVE | TS | 0.50 | 3.84 | 0.36 | 0.04 | 1.39 | 0.04 |
| SAN POLO DI PIAVE | ND | 0.01 | 3.20 | 93.66 | 9.36 | 299.71 | 9.33 |
| SAN POLO DI PIAVE | NC | 0.02 | 3.04 | 17.99 | 1.80 | 54.65 | 1.70 |
| SAN POLO DI PIAVE | NC* | 0.08 | 3.19 | 13.28 | 1.33 | 42.42 | 1.32 |
| SAN VENDEMIANO | RTA | 0.59 | 3.49 | 157.11 | 69.72 | 549.04 | 69.69 |
| SAN VENDEMIANO | RTA* | 0.12 | 3.35 | 35.98 | 15.97 | 120.43 | 15.29 |
| SAN VENDEMIANO | RTB | 0.73 | 3.28 | 9.50 | 4.22 | 31.18 | 3.96 |
| SAN VENDEMIANO | RTC | 2.14 | 3.98 | 2.63 | 1.17 | 10.47 | 1.33 |
| SAN VENDEMIANO | TS | 7.50 | 4.05 | 13.43 | 5.96 | 54.41 | 6.91 |
| SAN VENDEMIANO | ND | - | - | - | - | - | - |
| SAN VENDEMIANO | NC | 1.32 | 3.41 | 5.57 | 2.47 | 18.97 | 2.41 |
| SAN VENDEMIANO | NC* | 2.42 | 2.98 | 1.12 | 0.49 | 3.32 | 0.42 |
| SAN ZENONE DEGLI EZZELINI | RTA | 1.83 | 3.08 | 10.62 | 59.96 | 32.77 | 58.12 |
| SAN ZENONE DEGLI EZZELINI | RTA* | - | - | - | - | - | - |
| SAN ZENONE DEGLI EZZELINI | RTB | 2.00 | 2.86 | 0.57 | 3.19 | 1.62 | 2.87 |
| SAN ZENONE DEGLI EZZELINI | RTC | 1.00 | 2.59 | 0.22 | 1.22 | 0.56 | 0.99 |
| SAN ZENONE DEGLI EZZELINI | TS | 13.90 | 3.83 | 2.39 | 13.51 | 9.18 | 16.28 |
| SAN ZENONE DEGLI EZZELINI | ND | 3.17 | 2.70 | 1.63 | 9.21 | 4.41 | 7.82 |
| SAN ZENONE DEGLI EZZELINI | NC | 8.11 | 3.45 | 2.24 | 12.62 | 7.71 | 13.68 |
| SAN ZENONE DEGLI EZZELINI | NC* | 24.00 | 2.60 | 0.05 | 0.28 | 0.13 | 0.23 |
| SANTA LUCIA DI PIAVE | RTA | 0.09 | 3.32 | 149.83 | 59.43 | 497.95 | 61.03 |
| SANTA LUCIA DI PIAVE | RTA* | 0.11 | 3.15 | 35.80 | 14.20 | 112.78 | 13.82 |
| SANTA LUCIA DI PIAVE | RTB | 0.20 | 2.63 | 2.66 | 1.06 | 7.01 | 0.86 |
| SANTA LUCIA DI PIAVE | RTC | - | - | - | - | - | - |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| SANTA LUCIA DI PIAVE | TS | - | 2.60 | 0.32 | 0.13 | 0.83 | 0.10 |
| SANTA LUCIA DI PIAVE | ND | - | 3.10 | 52.15 | 20.68 | 161.88 | 19.84 |
| SANTA LUCIA DI PIAVE | NC | 0.03 | 3.21 | 7.08 | 2.81 | 22.74 | 2.79 |
| SANTA LUCIA DI PIAVE | NC* | - | 2.97 | 4.29 | 1.70 | 12.72 | 1.56 |
| SARMEDE | RTA | 1.37 | 1.83 | 38.64 | 41.24 | 70.87 | 42.63 |
| SARMEDE | RTA* | 0.80 | 1.71 | 1.85 | 1.97 | 3.16 | 1.90 |
| SARMEDE | RTB | 1.33 | 1.77 | 0.65 | 0.69 | 1.15 | 0.69 |
| SARMEDE | RTC | 1.17 | 1.72 | 1.78 | 1.90 | 3.06 | 1.84 |
| SARMEDE | TS | 17.54 | 1.74 | 32.98 | 35.19 | 57.51 | 34.59 |
| SARMEDE | ND | - | - | - | - | - | - |
| SARMEDE | NC | 26.44 | 1.72 | 16.12 | 17.20 | 27.67 | 16.64 |
| SARMEDE | NC* | 5.64 | 1.68 | 1.69 | 1.80 | 2.83 | 1.70 |
| SEGUSINO | RTA | 1.67 | 1.70 | 6.62 | 31.62 | 11.25 | 32.00 |
| SEGUSINO | RTA* | - | - | - | - | - | - |
| SEGUSINO | RTB | 1.43 | 1.65 | 0.58 | 2.79 | 0.96 | 2.73 |
| SEGUSINO | RTC | - | 1.69 | 0.07 | 0.31 | 0.11 | 0.31 |
| SEGUSINO | TS | 12.76 | 1.67 | 4.93 | 23.53 | 8.23 | 23.41 |
| SEGUSINO | ND | - | - | - | - | - | - |
| SEGUSINO | NC | 40.44 | 1.67 | 8.57 | 40.95 | 14.33 | 40.76 |
| SEGUSINO | NC* | 32.00 | 1.66 | 0.17 | 0.80 | 0.28 | 0.80 |
| SERNAGLIA DELLA BATTAGLIA | RTA | 0.23 | 3.52 | 19.13 | 71.40 | 67.31 | 72.62 |
| SERNAGLIA DELLA BATTAGLIA | RTA* | - | - | - | - | - | - |
| SERNAGLIA DELLA BATTAGLIA | RTB | - | 3.17 | 3.31 | 12.36 | 10.50 | 11.33 |
| SERNAGLIA DELLA BATTAGLIA | RTC | - | - | - | - | - | - |
| SERNAGLIA DELLA BATTAGLIA | TS | 0.20 | 4.05 | 1.92 | 7.16 | 7.77 | 8.38 |
| SERNAGLIA DELLA BATTAGLIA | ND | 1.00 | 2.94 | 2.01 | 7.49 | 5.89 | 6.35 |
| SERNAGLIA DELLA BATTAGLIA | NC | 0.71 | 3.06 | 0.31 | 1.17 | 0.96 | 1.04 |
| SERNAGLIA DELLA BATTAGLIA | NC* | - | 2.34 | 0.11 | 0.42 | 0.26 | 0.28 |
| SILEA | RTA | 0.09 | 3.22 | 63.72 | 73.62 | 205.08 | 74.40 |
| SILEA | RTA* | - | 3.68 | 0.84 | 0.97 | 3.08 | 1.12 |
| SILEA | RTB | - | 4.05 | 1.11 | 1.28 | 4.48 | 1.63 |
| SILEA | RTC | - | 3.53 | 1.25 | 1.45 | 4.42 | 1.60 |
| SILEA | TS | - | 3.17 | 2.55 | 2.95 | 8.09 | 2.93 |
| SILEA | ND | 0.08 | 2.94 | 15.97 | 18.45 | 46.91 | 17.02 |
| SILEA | NC | 0.09 | 3.10 | 0.93 | 1.08 | 2.89 | 1.05 |
| SILEA | NC* | - | 3.88 | 0.18 | 0.21 | 0.70 | 0.25 |
| SPRESIANO | RTA | 0.02 | 3.23 | 106.02 | 82.54 | 342.00 | 83.43 |
| SPRESIANO | RTA* | - | 3.05 | 5.84 | 4.55 | 17.82 | 4.35 |
| SPRESIANO | RTB | - | 2.78 | 0.94 | 0.73 | 2.61 | 0.64 |
| SPRESIANO | RTC | - | 2.81 | 0.58 | 0.45 | 1.62 | 0.40 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| SPRESIANO | TS | - | - | - | - | - | - |
| SPRESIANO | ND | - | 2.81 | 6.89 | 5.37 | 19.38 | 4.73 |
| SPRESIANO | NC | - | 3.20 | 7.54 | 5.87 | 24.14 | 5.89 |
| SPRESIANO | NC* | - | 3.69 | 0.64 | 0.50 | 2.35 | 0.57 |
| SUSEGANA | RTA | 2.18 | 1.83 | 220.90 | 29.96 | 403.36 | 30.54 |
| SUSEGANA | RTA* | 0.48 | 2.12 | 15.20 | 2.06 | 32.24 | 2.44 |
| SUSEGANA | RTB | 1.87 | 1.74 | 23.78 | 3.23 | 41.27 | 3.12 |
| SUSEGANA | RTC | 1.50 | 1.66 | 2.70 | 0.37 | 4.48 | 0.34 |
| SUSEGANA | TS | 13.50 | 1.72 | 345.72 | 46.89 | 594.07 | 44.97 |
| SUSEGANA | ND | 9.51 | 2.06 | 53.28 | 7.23 | 109.71 | 8.31 |
| SUSEGANA | NC | 19.33 | 1.79 | 71.60 | 9.71 | 128.50 | 9.73 |
| SUSEGANA | NC* | 9.78 | 1.78 | 4.11 | 0.56 | 7.31 | 0.55 |
| TARZO | RTA | 2.49 | 1.67 | 21.54 | 12.36 | 35.92 | 12.12 |
| TARZO | RTA* | 1.71 | 1.57 | 0.98 | 0.56 | 1.55 | 0.52 |
| TARZO | RTB | 5.00 | 1.65 | 0.18 | 0.10 | 0.29 | 0.10 |
| TARZO | RTC | - | - | - | - | - | - |
| TARZO | TS | 16.76 | 1.70 | 75.41 | 43.25 | 128.07 | 43.23 |
| TARZO | ND | 15.50 | 1.64 | 1.05 | 0.60 | 1.73 | 0.58 |
| TARZO | NC | 37.16 | 1.71 | 72.42 | 41.54 | 123.98 | 41.85 |
| TARZO | NC* | 31.07 | 1.70 | 2.77 | 1.59 | 4.72 | 1.59 |
| TREVIGNANO | RTA | 0.12 | 3.23 | 12.46 | 66.28 | 40.29 | 66.98 |
| TREVIGNANO | RTA* | - | 2.66 | 0.67 | 3.56 | 1.78 | 2.96 |
| TREVIGNANO | RTB | - | - | - | - | - | - |
| TREVIGNANO | RTC | - | - | - | - | - | - |
| TREVIGNANO | TS | - | - | - | - | - | - |
| TREVIGNANO | ND | 0.08 | 3.19 | 5.60 | 29.81 | 17.87 | 29.71 |
| TREVIGNANO | NC | - | 2.82 | 0.05 | 0.25 | 0.13 | 0.22 |
| TREVIGNANO | NC* | - | 4.12 | 0.02 | 0.10 | 0.08 | 0.13 |
| TREVISO | RTA | 0.05 | 2.96 | 54.03 | 95.42 | 159.80 | 95.25 |
| TREVISO | RTA* | - | 3.10 | 0.89 | 1.58 | 2.77 | 1.65 |
| TREVISO | RTB | - | 2.85 | 0.06 | 0.10 | 0.16 | 0.10 |
| TREVISO | RTC | - | 4.04 | 0.06 | 0.10 | 0.24 | 0.14 |
| TREVISO | TS | - | - | - | - | - | - |
| TREVISO | ND | - | 3.59 | 0.29 | 0.51 | 1.04 | 0.62 |
| TREVISO | NC | - | 2.82 | 1.21 | 2.14 | 3.42 | 2.04 |
| TREVISO | NC* | - | 4.09 | 0.08 | 0.15 | 0.34 | 0.20 |
| VALDOBBIADENE | RTA | 1.37 | 1.68 | 419.35 | 34.46 | 703.21 | 34.54 |
| VALDOBBIADENE | RTA* | 0.46 | 1.67 | 1.34 | 0.11 | 2.24 | 0.11 |
| VALDOBBIADENE | RTB | 1.15 | 1.67 | 39.71 | 3.26 | 66.31 | 3.26 |
| VALDOBBIADENE | RTC | 1.37 | 1.67 | 5.52 | 0.45 | 9.22 | 0.45 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
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| VALDOBBIADENE | TS | 12.81 | 1.67 | 443.68 | 36.46 | 741.96 | 36.44 |
| VALDOBBIADENE | ND | 8.77 | 1.67 | 5.93 | 0.49 | 9.91 | 0.49 |
| VALDOBBIADENE | NC | 35.75 | 1.67 | 275.15 | 22.61 | 459.55 | 22.57 |
| VALDOBBIADENE | NC* | 17.39 | 1.67 | 26.13 | 2.15 | 43.64 | 2.14 |
| VAZZOLA | RTA | 0.04 | 3.32 | 491.06 | 48.80 | 1 630.14 | 49.61 |
| VAZZOLA | RTA* | 0.02 | 3.21 | 369.40 | 36.71 | 1 184.46 | 36.05 |
| VAZZOLA | RTB | - | 3.28 | 33.44 | 3.32 | 109.79 | 3.34 |
| VAZZOLA | RTC | - | 3.37 | 3.02 | 0.30 | 10.18 | 0.31 |
| VAZZOLA | TS | - | - | - | - | - | - |
| VAZZOLA | ND | - | 3.16 | 54.89 | 5.45 | 173.21 | 5.27 |
| VAZZOLA | NC | 0.02 | 3.31 | 34.13 | 3.39 | 112.99 | 3.44 |
| VAZZOLA | NC* | 0.02 | 3.20 | 20.34 | 2.02 | 65.20 | 1.98 |
| VEDELAGO | RTA | 0.09 | 3.04 | 24.94 | 83.01 | 75.86 | 83.33 |
| VEDELAGO | RTA* | - | - | - | - | - | - |
| VEDELAGO | RTB | - | 2.67 | 0.03 | 0.10 | 0.08 | 0.09 |
| VEDELAGO | RTC | - | - | - | - | - | - |
| VEDELAGO | TS | - | - | - | - | - | - |
| VEDELAGO | ND | - | 3.03 | 3.42 | 11.37 | 10.35 | 11.37 |
| VEDELAGO | NC | - | 2.86 | 1.66 | 5.52 | 4.75 | 5.22 |
| VEDELAGO | NC* | - | - | - | - | - | - |
| VIDOR | RTA | 0.86 | 1.76 | 147.38 | 37.76 | 259.02 | 38.55 |
| VIDOR | RTA* | - | - | - | - | - | - |
| VIDOR | RTB | 1.08 | 1.84 | 13.41 | 3.44 | 24.66 | 3.67 |
| VIDOR | RTC | 1.22 | 1.67 | 2.05 | 0.53 | 3.43 | 0.51 |
| VIDOR | TS | 13.51 | 1.68 | 89.23 | 22.86 | 149.47 | 22.24 |
| VIDOR | ND | 7.71 | 1.87 | 6.24 | 1.60 | 11.66 | 1.74 |
| VIDOR | NC | 34.49 | 1.69 | 120.23 | 30.80 | 203.24 | 30.25 |
| VIDOR | NC* | 15.48 | 1.74 | 11.78 | 3.02 | 20.45 | 3.04 |
| VILLORBA | RTA | 0.07 | 3.22 | 132.31 | 66.57 | 426.51 | 67.07 |
| VILLORBA | RTA* | 0.09 | 3.05 | 9.51 | 4.79 | 28.97 | 4.56 |
| VILLORBA | RTB | - | 3.17 | 1.43 | 0.72 | 4.52 | 0.71 |
| VILLORBA | RTC | - | 2.54 | 1.62 | 0.82 | 4.12 | 0.65 |
| VILLORBA | TS | - | 3.39 | 0.23 | 0.12 | 0.78 | 0.12 |
| VILLORBA | ND | 0.22 | 3.08 | 36.69 | 18.46 | 112.88 | 17.75 |
| VILLORBA | NC | 0.02 | 3.44 | 16.66 | 8.38 | 57.38 | 9.02 |
| VILLORBA | NC* | - | 2.62 | 0.30 | 0.15 | 0.79 | 0.12 |
| VITTORIO VENETO | RTA | 1.57 | 1.70 | 230.36 | 40.05 | 390.79 | 39.79 |
| VITTORIO VENETO | RTA* | 0.80 | 1.72 | 1.13 | 0.20 | 1.94 | 0.20 |
| VITTORIO VENETO | RTB | 1.88 | 1.70 | 6.75 | 1.17 | 11.45 | 1.17 |
| VITTORIO VENETO | RTC | 3.00 | 1.71 | 1.01 | 0.17 | 1.72 | 0.18 |

| Municipality | System | Slope | Quantity | Area | | Availability | |
|---|---|---|---|---|---|---|---|
| | | % | t $ha^{-1}$ | ha | % | t | % |
| VITTORIO VENETO | TS | 15.22 | 1.72 | 246.14 | 42.79 | 423.89 | 43.16 |
| VITTORIO VENETO | ND | 7.00 | 2.14 | 1.88 | 0.33 | 4.04 | 0.41 |
| VITTORIO VENETO | NC | 26.94 | 1.69 | 84.79 | 14.74 | 143.01 | 14.56 |
| VITTORIO VENETO | NC* | 12.06 | 1.68 | 3.18 | 0.55 | 5.35 | 0.54 |
| VOLPAGO DEL MONTELLO | RTA | 0.94 | 3.31 | 118.44 | 46.58 | 392.29 | 46.20 |
| VOLPAGO DEL MONTELLO | RTA* | 0.33 | 3.60 | 0.17 | 0.07 | 0.63 | 0.07 |
| VOLPAGO DEL MONTELLO | RTB | 1.09 | 3.52 | 38.54 | 15.16 | 135.67 | 15.98 |
| VOLPAGO DEL MONTELLO | RTC | 1.31 | 2.83 | 5.63 | 2.22 | 15.94 | 1.88 |
| VOLPAGO DEL MONTELLO | TS | 13.59 | 3.64 | 37.09 | 14.59 | 134.88 | 15.89 |
| VOLPAGO DEL MONTELLO | ND | 4.27 | 3.11 | 46.02 | 18.10 | 142.91 | 16.83 |
| VOLPAGO DEL MONTELLO | NC | 5.08 | 3.01 | 4.88 | 1.92 | 14.69 | 1.73 |
| VOLPAGO DEL MONTELLO | NC* | 5.86 | 3.46 | 3.50 | 1.38 | 12.09 | 1.42 |
| ZENSON DI PIAVE | RTA | 0.08 | 3.10 | 130.16 | 96.41 | 403.72 | 96.08 |
| ZENSON DI PIAVE | RTA* | - | 2.76 | 1.66 | 1.23 | 4.57 | 1.09 |
| ZENSON DI PIAVE | RTB | - | 4.03 | 0.23 | 0.17 | 0.91 | 0.22 |
| ZENSON DI PIAVE | RTC | - | 3.14 | 0.08 | 0.06 | 0.25 | 0.06 |
| ZENSON DI PIAVE | TS | - | 2.97 | 0.09 | 0.06 | 0.26 | 0.06 |
| ZENSON DI PIAVE | ND | - | 4.01 | 0.96 | 0.71 | 3.85 | 0.92 |
| ZENSON DI PIAVE | NC | - | 3.68 | 1.62 | 1.20 | 5.94 | 1.41 |
| ZENSON DI PIAVE | NC* | - | 3.05 | 0.22 | 0.16 | 0.67 | 0.16 |
| ZERO BRANCO | RTA | - | 2.90 | 8.76 | 95.68 | 25.42 | 96.11 |
| ZERO BRANCO | RTA* | - | - | - | - | - | - |
| ZERO BRANCO | RTB | - | - | - | - | - | - |
| ZERO BRANCO | RTC | - | - | - | - | - | - |
| ZERO BRANCO | TS | - | - | - | - | - | - |
| ZERO BRANCO | ND | - | 2.60 | 0.25 | 2.73 | 0.65 | 2.46 |
| ZERO BRANCO | NC | - | 2.62 | 0.15 | 1.58 | 0.38 | 1.44 |
| ZERO BRANCO | NC* | - | - | - | - | - | - |