ILVO Zaden - Seeds

90 YEARS OF RESEARCH AND SELECTION

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ILVO (formerly RvP) has a long breeding tradition originally focused on local crops. ILVO is a forerunner and a niche player. In addition to scientific research, we also deliver end products for agriculture and horticulture in Belgium and beyond.

This unique combination allows us to work in a multidisciplinary way. With research as the starting point, we can use the most up-to-date (re)production techniques in plant breeding.

As a demand-driven developer of novelties, we respond to current market needs: high-yielding, climate-robust cultivars with improved disease resistance, reduced water requirement/uptake, higher protein content and other quality characteristics such as reduction of nematode infestations.

We invest in cultivars for sustainable production with respect for soil, water and the ever-increasing cost of inputs.

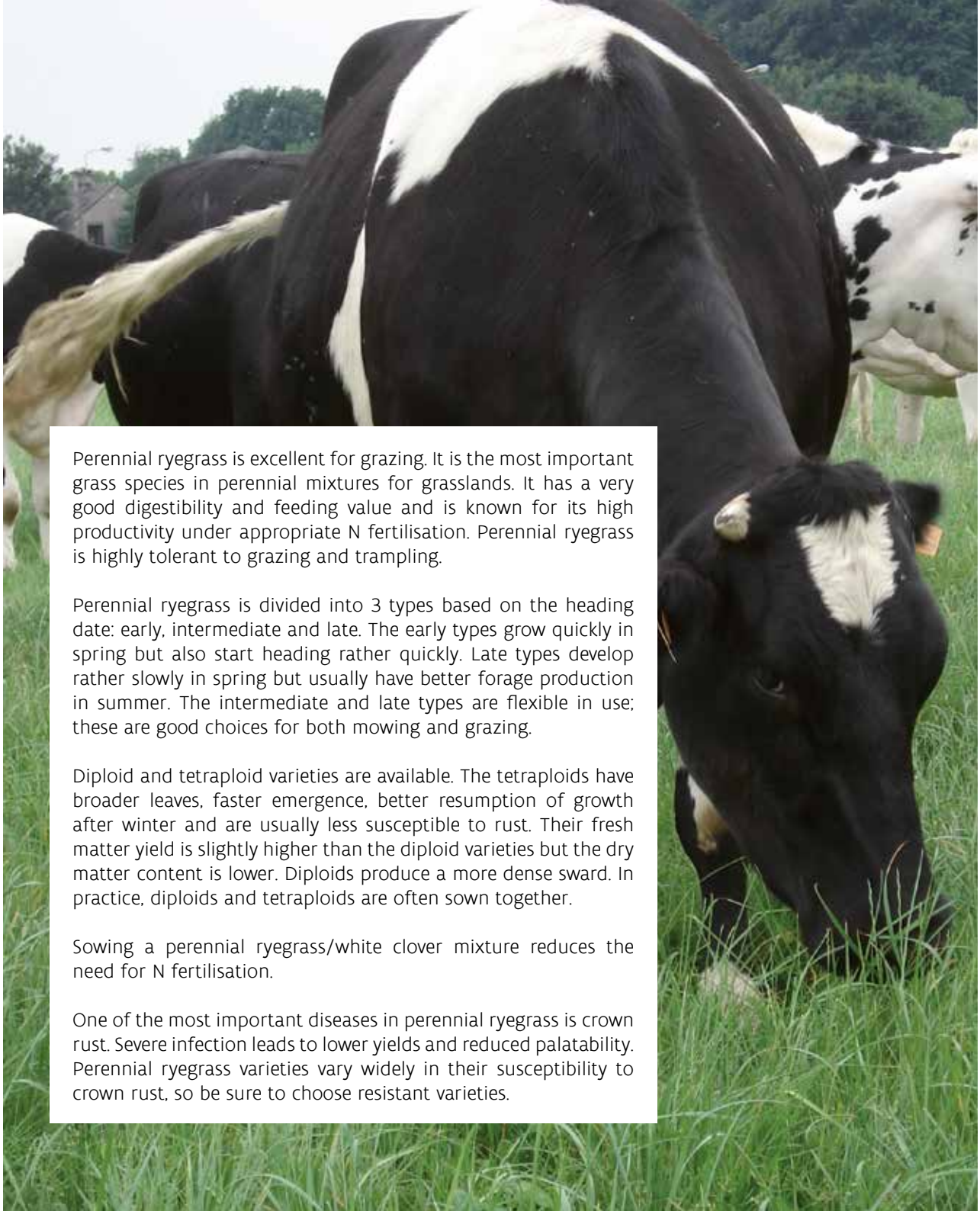
We welcome new challenges: we create new varieties that contribute to on-farm protein production.

The endless patience and commitment of our breeders creates new crop cultivars with remarkable added value.

Our on-site production unit and our quality control programme throughout the chain guarantee delivery of high quality basic seeds. Our varieties are commercialised worldwide through sales representatives.

This booklet offers an overview of all of our selections to help you choose the best variety.

Perennial ryegrass



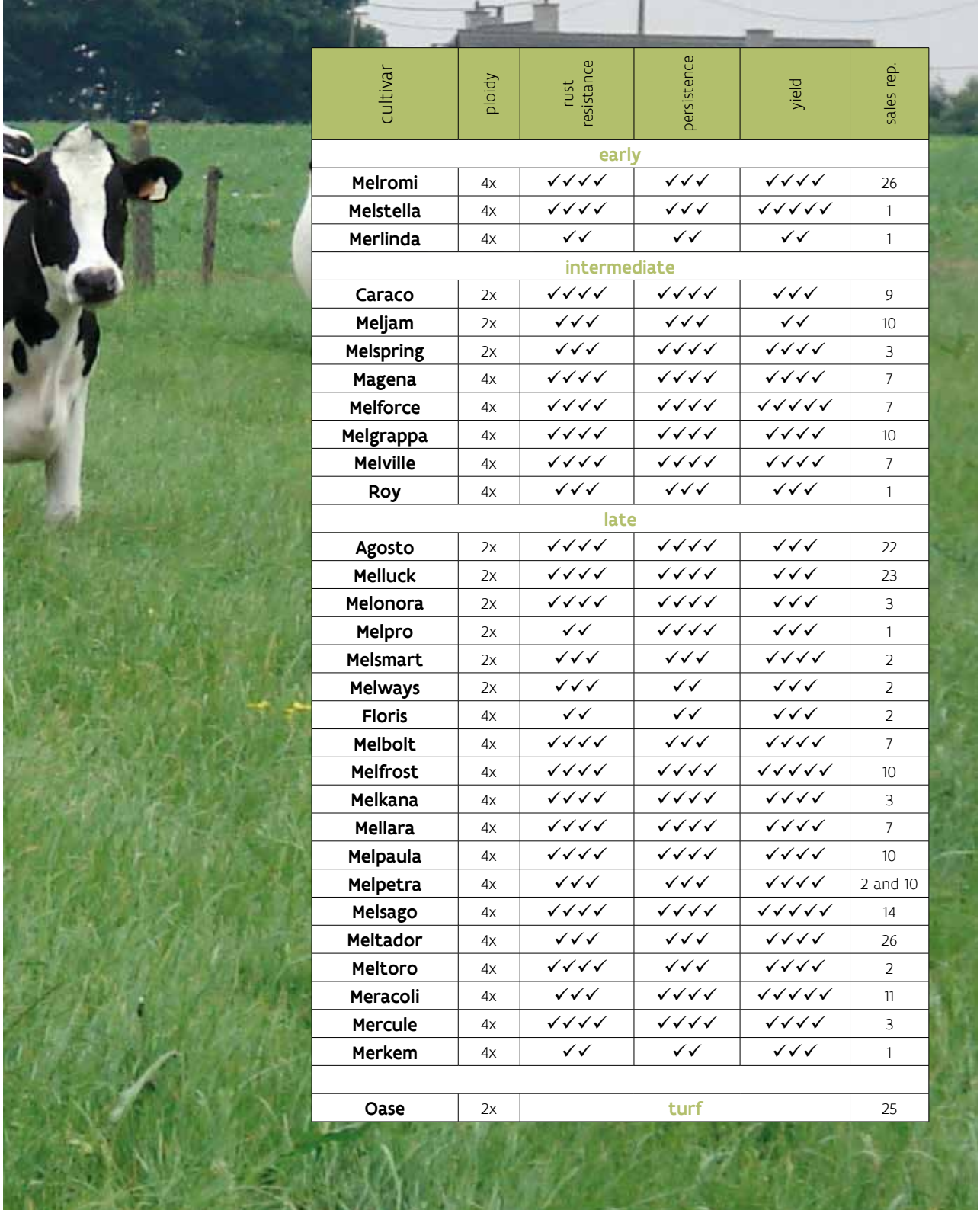
Perennial ryegrass is excellent for grazing. It is the most important grass species in perennial mixtures for grasslands. It has a very good digestibility and feeding value and is known for its high productivity under appropriate N fertilisation. Perennial ryegrass is highly tolerant to grazing and trampling.

Perennial ryegrass is divided into 3 types based on the heading date: early, intermediate and late. The early types grow quickly in spring but also start heading rather quickly. Late types develop rather slowly in spring but usually have better forage production in summer. The intermediate and late types are flexible in use; these are good choices for both mowing and grazing.

Diploid and tetraploid varieties are available. The tetraploids have broader leaves, faster emergence, better resumption of growth after winter and are usually less susceptible to rust. Their fresh matter yield is slightly higher than the diploid varieties but the dry matter content is lower. Diploids produce a more dense sward. In practice, diploids and tetraploids are often sown together.

Sowing a perennial ryegrass/white clover mixture reduces the need for N fertilisation.

One of the most important diseases in perennial ryegrass is crown rust. Severe infection leads to lower yields and reduced palatability. Perennial ryegrass varieties vary widely in their susceptibility to crown rust, so be sure to choose resistant varieties.



cultivar	ploidy	rust resistance	persistence	yield	sales rep.
		early			
Melromi	4x	✓✓✓✓	✓✓✓	✓✓✓✓	26
Melstella	4x	✓✓✓✓	✓✓✓	✓✓✓✓✓	1
Merlinda	4x	✓✓	✓✓	✓✓	1
		intermediate			
Caraco	2x	✓✓✓✓	✓✓✓✓	✓✓✓	9
Meljam	2x	✓✓✓	✓✓✓	✓✓	10
Melspring	2x	✓✓✓	✓✓✓✓	✓✓✓✓	3
Magena	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	7
Melforce	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓✓	7
Melgrappa	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	10
Melville	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	7
Roy	4x	✓✓✓	✓✓✓	✓✓✓	1
		late			
Agosto	2x	✓✓✓✓	✓✓✓✓	✓✓✓	22
Melluck	2x	✓✓✓✓	✓✓✓✓	✓✓✓	23
Melonora	2x	✓✓✓✓	✓✓✓✓	✓✓✓	3
Melpro	2x	✓✓	✓✓✓✓	✓✓✓	1
Melsmart	2x	✓✓✓	✓✓✓	✓✓✓✓	2
Melways	2x	✓✓✓	✓✓	✓✓✓	2
Floris	4x	✓✓	✓✓	✓✓✓	2
Melbolt	4x	✓✓✓✓	✓✓✓	✓✓✓✓	7
Melfrost	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓✓	10
Melkana	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	3
Mellara	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	7
Melpaula	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	10
Melpetra	4x	✓✓✓	✓✓✓	✓✓✓✓	2 and 10
Melsago	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓✓	14
Meltador	4x	✓✓✓	✓✓✓	✓✓✓✓	26
Meltoro	4x	✓✓✓✓	✓✓✓	✓✓✓✓	2
Meracoli	4x	✓✓✓	✓✓✓✓	✓✓✓✓✓	11
Mercule	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	3
Merkem	4x	✓✓	✓✓	✓✓✓	1
Oase	2x	turf			25

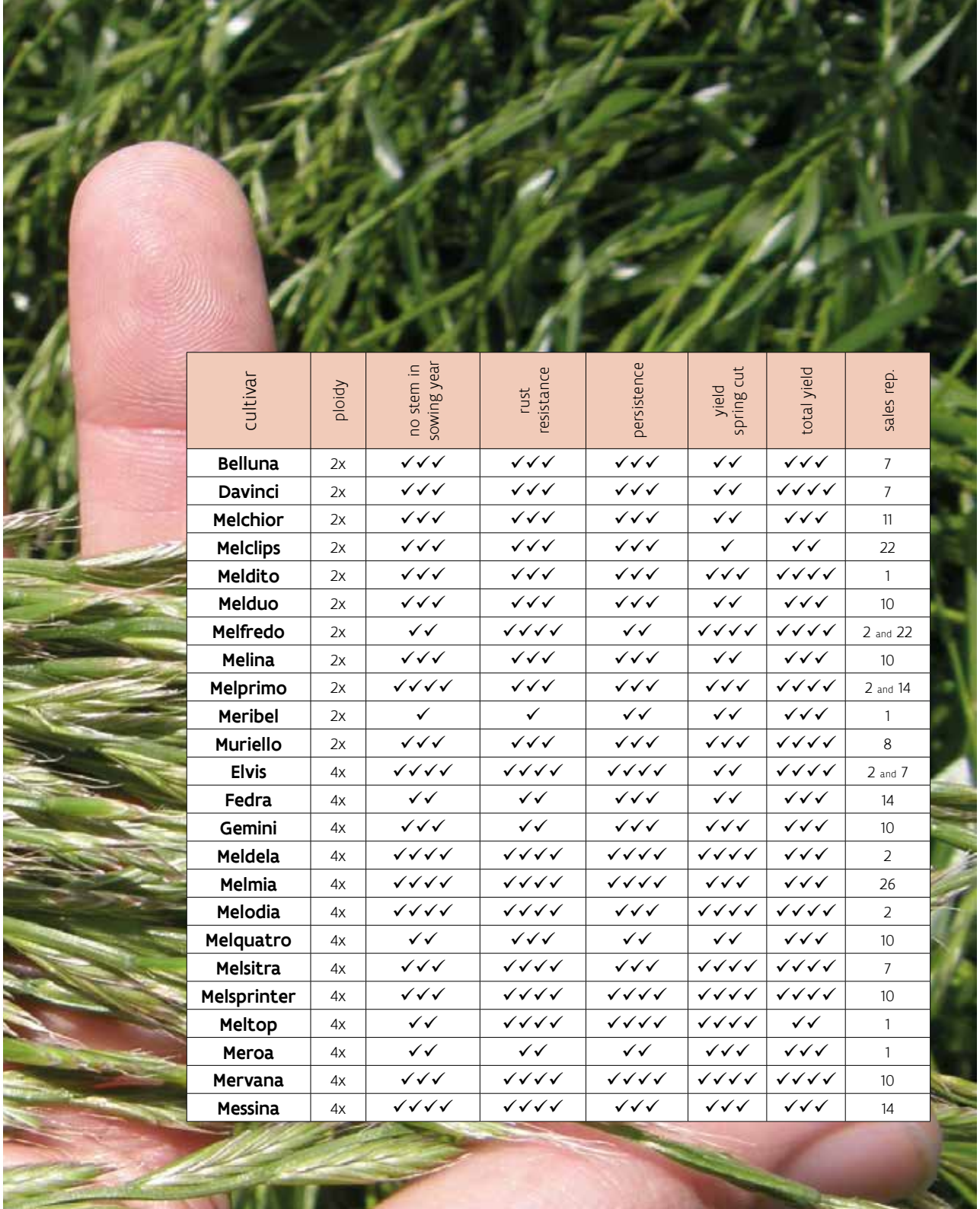
Italian ryegrass

Italian ryegrass is a biennial grass species, mostly used for short-term (1-2 year) grassland leys under a cutting regime. Under those conditions, Italian ryegrass is the most productive grass species. It has a high palatability and can deliver a large amount of winter fodder.

Because this species establishes quickly and has exceptional spring growth, it is often sown in fall and mown the following spring before sowing maize. The dry matter yield of the first cut is very important when used in this way.
When using Italian ryegrass as the main crop during 1 or 2 years, persistence is important. Italian ryegrass is sensitive to damage from heavy machinery, short mowing and a long growing period between cuts. When sown in spring, the most recent varieties do not flower in the sowing year, resulting in a year-round grass crop with good digestibility. In the year after sowing, stems are only formed starting in May. When using Italian ryegrass as a main crop, the total dry matter yield is important.

Italian ryegrass is also particularly good as a cover and catch crop. Yielding a cut in fall and again in spring which can be used as forage. For use as a cover crop, tetraploid varieties are preferred because they provide faster coverage.

Tetraploid varieties are generally more resistant to crown rust but less persistent than diploid varieties. Tetraploid varieties produce a larger amount of fresh forage but on average they have less dry matter, making them comparable to diploid varieties in terms of dry matter yield. Tetraploid seeds are heavier than diploid seeds.



cultivar	ploidy	no stem in sowing year	rust resistance	persistence	yield spring cut	total yield	sales rep.
Belluna	2x	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	7
Davinci	2x	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓✓	7
Melchior	2x	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	11
Melclips	2x	✓✓✓	✓✓✓	✓✓✓	✓	✓✓	22
Meldito	2x	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓✓	1
Melduo	2x	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	10
Melfredo	2x	✓✓	✓✓✓✓	✓✓	✓✓✓✓	✓✓✓✓	2 and 22
Melina	2x	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	10
Melprimo	2x	✓✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓✓	2 and 14
Meribel	2x	✓	✓	✓✓	✓✓	✓✓✓	1
Muriello	2x	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓✓	8
Elvis	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓	✓✓✓✓	2 and 7
Fedra	4x	✓✓	✓✓	✓✓✓	✓✓	✓✓✓	14
Gemini	4x	✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	10
Meldela	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	2
Melmia	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓	26
Melodia	4x	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓✓	✓✓✓✓	2
Melquatro	4x	✓✓	✓✓✓	✓✓	✓✓	✓✓✓	10
Melsitra	4x	✓✓✓	✓✓✓✓	✓✓✓	✓✓✓✓	✓✓✓✓	7
Melsprinter	4x	✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	10
Meltop	4x	✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓	1
Meroa	4x	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	1
Mervana	4x	✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	10
Messina	4x	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓	✓✓✓	14

WESTERWOLD RYEGRASS

Westerwold ryegrass is an annual species for use in mowing. It is sown early in spring as a main crop, or in summer as a repeat crop or cover crop. Its fast development makes it very productive. When sown in spring, it will head after the first cut. Tetraploid varieties have faster early growth, while diploid varieties are somewhat more persistent.

cultivar	ploidy	early growth	rust resistance	yield sown in spring	yield sown in fall	sales rep.
Melboost	2x	✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	9
Melpush	2x	✓✓✓	✓✓✓✓	✓✓✓	✓✓✓✓	21
Melsemper	2x	✓✓	✓✓✓✓	✓✓✓	✓✓✓✓	22
Melworld	2x	✓✓	✓✓✓	✓✓✓✓	✓✓✓	10
Mendoza	2x	✓✓✓	✓✓	✓✓	✓✓	10
Bendix	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	18
Lemnos	4x	✓✓✓✓	✓✓	✓	✓✓✓	1
Melistar	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓✓	5
Meljump	4x	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	10
Melmondo	4x	✓✓✓✓	✓✓	✓	✓✓✓	10
Melspeed	4x	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓	9

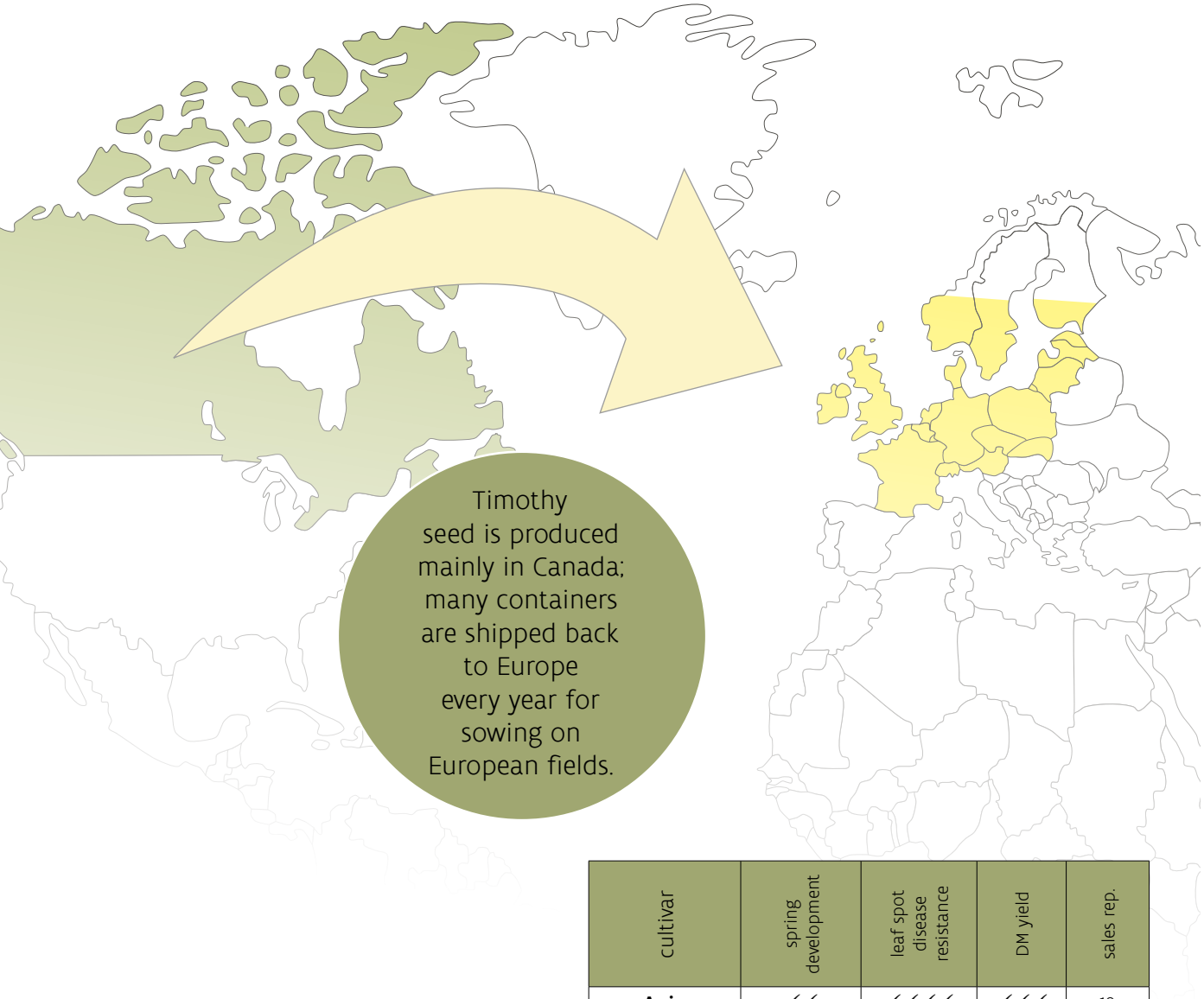
Hybrid ryegrass is the result of a cross between Italian and perennial ryegrass. The characteristics of hybrid ryegrass are between those of perennial ryegrass (persistence) and Italian ryegrass (productivity). Hybrid ryegrass is used for mowing for at least 2 to 3 years.

Varieties of hybrid ryegrass either tend towards Italian or perennial ryegrass. The growth types of the ILVO varieties **Hymer** [2 and 14], **Melauris** [13], **Melcombi** [10] and **Melprius** [21] are more like Italian ryegrass. These tetraploid varieties are highly productive, have exceptionally good early growth, and are resistant to crown rust.

Timothy

Timothy (timothy grass, timothy hay, herd grass, meadow cat's tail) is the most winter-hardy forage grass species. Even after a cold winter, it has excellent spring growth but it is less productive during dry periods in the summer. This perennial species is well-suited to cutting but somewhat less tolerant to grazing. Timothy is highly palatable and has a good digestibility that decreases quickly as the plant ages.

ILVO develops highly productive, healthy, mid-to-late heading varieties that feature at the top of most recommended lists in NW Europe and Canada.



Timothy seed is produced mainly in Canada; many containers are shipped back to Europe every year for sowing on European fields.

cultivar	spring development	leaf spot disease resistance	DM yield	sales rep.
Anjo	✓✓	✓✓✓✓	✓✓✓	10
Comer	✓✓✓	✓✓✓	✓✓✓	1 and 16
Dolina	✓✓	✓✓✓✓	✓✓	7
Erecta	✓	✓	✓	1 and 16
Fjord	✓✓✓	✓✓✓✓	✓✓✓	1
Polarking	✓✓✓	✓✓✓	✓✓✓✓	10
Tibor	✓✓	✓✓	✓✓✓	26

Meadow fescue

MERIFEST and **MODENA** are productive, healthy varieties with good persistence and winter hardiness.

Meadow fescue is very well-suited to mowing on less intensive permanent grassland. This grass species is winter hardy and thrives on wet ground. The digestibility of meadow fescue approximates that of perennial ryegrass.

The ILVO variety **FESTILO** is a cross between hybrid ryegrass and meadow fescue. It is a highly productive variety with good digestibility and excellent seed yield.

The word "festulolium" is used to describe a number of crosses between Festuca species (meadow fescue, tall fescue), and Lolium species (perennial and Italian ryegrass, hybrid ryegrasses). Festulolium crosses combine the quality characteristics (palatability, digestibility) of the ryegrasses with the stress tolerance (dry, cold) of the fescues.

Red clover

Red clover is clearly the best on-farm protein source for the cattle farmer. Red clover forms a deep taproot, but has no stolons like white clover. For this reason, red clover is highly drought resistant, but is less tolerant to trampling. Red clover is thus best suited for mowing, either in pure stands or in combination with forage grasses.

Red clover is a tall crop that tolerates up to 4 cuts per year. It combines high yield with a high protein content and good digestibility. This high productivity only starts to decline after 3 to 4 years.

Red clover is a good crop to meet rural development and environmental legal demands and agricultural greening. It can be used as a third crop, a nitrogen-fixing crop, and as a cover crop.

Clover rot and powdery mildew are important diseases that reduce the persistence of red clover. Choose a variety with good persistence.

cultivar	ploidy	persistence	yield	sales rep.
Avisto	2x	♣ ♣ ♣	♣ ♣ ♣	21
Global	2x	♣ ♣ ♣	♣ ♣ ♣	10
Lemmon	2x	♣ ♣ ♣	♣ ♣ ♣	3
Mercury	2x	♣ ♣	♣ ♣	21
Merian	2x	♣ ♣ ♣	♣ ♣ ♣	21
Merviot	2x	♣ ♣ ♣	♣ ♣ ♣	1
Tandy	2x	♣ ♣ ♣	♣ ♣ ♣	5
Violetta	2x	♣ ♣	♣ ♣	1

White clover

While clover is very well-suited for grazing in a mixed crop with forage grasses. Like red clover, white clover fixes atmospheric nitrogen and makes it available for the grasses. In addition, white clover is also a valuable addition to multi-year hay fields together with forage grasses and red clover. Perennial ryegrass combined with white clover deliver more dry matter per ha with a higher protein content and require less fertiliser input.

Appropriate management (fertilisation, grazing, mowing) ensures that white clover stays competitive with the grass without either disappearing or taking over.

As with red clover, white clover is a useful crop to plant in the context of rural development and greening. The basic seed production of **Melifer** [5], **Melital** [22 and 25], **Merida** [21], **Merlyn** [10] and **Merwi** [1] is done primarily in New Zealand [4].

Choose the ILVO variety that best fits your farm's needs.

White mustard

All ILVO cultivars reduce the number of beet cyst nematodes (*Heterodera schachtii*) in the soil.

Green manure crops or cover crops such as white mustard or fodder radish protect and feed the soil. They prevent soil compaction and erosion. Adding organic material improves the workability, water-retention capacity, the mineral content and the soil structure as well as supporting the soil resilience. Further, planting a green manure crop captures nitrogen and other minerals that would otherwise leach out of the soil. Some green manure crops even reduce the number of certain nematodes in the soil.

Both white mustard and fodder radish grow quickly and rapidly cover the soil. In this way, they reduce weed pressure better than cereals or grasses. The ILVO varieties are bred for fast coverage and late flowering to prevent seed contamination of the field. For a late sowing date (September), white mustard is more suitable than fodder radish. Both crops are sensitive to frost. Flailing or mowing ease subsequent plowing in spring.

cultivar	ploidy	establish-ment	lateness of flowering	height	resistance to beet cyst nematode	sales rep.
Chacha	4x	+++	++	++	2	2
Fox *	2x	+++	++++	+	1	10
Meringue	2x	++++	++	+++	2	12
Polka	2x	++++	+++	++	2	22
Rumba	2x	+++	++++	+	2+	10
Salsa	2x	++++	+++	++	2	12
Solea	2x	++++	++	+++	2	9

* Highest resistance to beet cyst nematodes

All ILVO cultivars reduce the number of beet cyst nematodes (*Heterodera schachtii*) in the soil.

Resistant varieties of white mustard and fodder radish can reduce the number of certain nematodes in the soil. To guarantee this effect, the soil temperature and development of the cover crop must be sufficiently high. For maximum nematode reduction, the resistant variety must be sown before 1 August.

All ILVO varieties of fodder radish and white mustard ensure a reduction of nematode infestation (resistance class 1 and 2). ILVO has introduced a fodder radish variety with double resistance: it combats both the beet cyst nematode (*H. schachtii*) and the Columbia root-knot nematode (*Meloidogyne chitwoodi*).

cultivar	ploidy	establish-ment	lateness of flowering	height	resistance to beet cyst nematode	sales rep.
Brutus	4x	++++	++	++	2	8
Cassius	2x	+++	+++	++	2	10
Doublemax **	2x	+++	+++	++	1	10
Guillotine	2x	+++	++	++	2+	26
Lucas	4x	+++	++	+++	2	24
Maximus	4x	++++	+++	+	2+	10
Sirius	2x	+++	+	+++	2	9
Sixtus	4x	+++	+++	+	2	12 and 22
Tiberius	4x	++++	++++	+	under test	7

**Double resistance: to beet cyst nematode and root-knot nematode

Forage rape

cultivar	winter hardiness	digestibility	yield	sales rep.
Dino	++	+++	++	22
Napoleon	+++	+++	++++	9
Wilma	+++	+++	+++	21

Forage rape germinates quickly and establishes quickly, leading to excellent weed suppression. The ILVO varieties of forage rape are bred for their abundant, disease-free leaves. They are very winter-hardy, which makes them suitable as a catch crop (sowing from July to early September). These varieties can also become a source of forage in autumn as well as during winter.

Fodder beet

The highly productive fodder beet is a tasty, inexpensive source of high-quality feed. Its high energy content makes it particularly suitable for highly productive dairy cattle. Including fodder beet in the ration can reduce the amount of feed concentrate required. In the crop rotation, fodder beet is an ideal third crop in addition to maize and grass.

cultivar	colour	shape	DM content	% above-ground	sales rep.
Bolero	yellow	oval	16,50 %	50	14
Ribondo	orange	oval	17 %	34	14

Turnip

Turnips are fast-growing and can be used as a catch crop. They are selected for their healthy leaves and large, healthy bulbs. Turnips are less tolerant to frost and are ideally sown before mid-August. They can offer a source of forage in fall and early winter. The ILVO varieties are bred based on robust varieties including the Belgian landraces 'Leielander' and 'Durmelander'.

cultivar	resistance to club root	yield	sales rep.
Durmelander	+	+++	1
Dynamo	++	++	14
Leielander	+++	++	1
SF Envy	++	++	20
SF G2	++	++	20

Black salsify

In black salsify, the yield, root shape and disease resistance are central to the breeding efforts. ILVO was the first breeder to develop a variety resistant to powdery mildew. Cloning and family selection were used to achieve the currently available varieties, **Antonia** [15] and **Melina** [19].

Chicory

Flanders has a long tradition in cultivating chicory for use as a coffee substitute. Chicory is now mostly grown to extract inulin from the roots. Inulin is a chain of fructose molecules with a glucose molecule at the end; this chain acts as a soluble dietary fibre with a prebiotic effect.

Together with the Chicoline division of Cosucra group Warcoing, ILVO is developing chicory varieties [6] to be used for either inulin or coffee chicory. We strive for a high inulin yield per hectare combined with a good, stable inulin quality. The length of the inulin chains determines the quality. Other goals include good bolting resistance, an easily harvestable root shape, healthy roots and leaves.

cultivar	bolting resistance	root yield	inulin content	inulin chain length	inulin yield
Cadence	+++	+++	++	++	+++
Dacapo	++++	+	++++	+++++	+
Fugato	+++	++++	++	+++	++++
Koto	++++	++	+++	+++++	+++
Larigot	+++	+++	++	+++	+++
Legato	++++	++	+++	++++	+++
Maestoso	+++	++++	++	++	++++
Obbligato	++++	++	+++	++++	+++
Oboe	++++	+++++	+	+++	+++
Ormandy	++++	+++	++	+++	+++
Quena	+++	+++	++	+++	+++

Soybean is an exceptional protein crop: it has a very high protein content (40%) and an optimal amino acid composition. Local cultivation of soybean not only expands the crop rotation, including nitrogen fixation from the air, but also closes the nutrient cycles on-farm, reduces transportation costs and guarantees acceptable and sustainable local soybean production. Flanders has a sufficiently large market for processing soybeans; The valorisation of soybean oil offers an opportunity for product differentiation. In addition, there is strong demand from organic producers for GMO-free soybean.

The first two soybean varieties on the Belgian list, **Artemis** [17] and **Hermes** [17], are commercialized by Protealis, a spinoff of ILVO and the biotech institute VIB.

These early-maturing varieties (maturity group 000) offer the farmer a high yield combined with a high protein content.

Production

More than **120 ILVO-varieties** are officially listed in Belgium and abroad.

ILVO produces and sells high quality (pre)-**basic seed**.

Sales representatives produce **certified seed** on royalty basis.

Quality

Sales representatives and producers

1 **All merchant processors**

2 **Aveve Zaden** - Belgium

3 **Barenbrug group** - The Netherlands

4 **Carrfields Seed Limited** - New Zealand

5 **Cérience** - France

6 **Cosucra group Warcoing – division Chicoline** - Belgium

7 **DLF seeds A/S** - Danmark

8 **Deutsche Saatveredelung AG** - Germany

9 **Eliard-SPCP** - France

10 **Feldsaaten Freudenberger GmbH & Co** - Germany

11 **Jorion Philip-seeds** - Belgium

12 **L. Stroetmann Saat GmbH & Co KG** - Germany

13 **Lidea** - France

14 **Limagrain groupe** - France

15 **NV Roger Maes -** Belgium

16 **Pickseed division of DLF** - Canada

17 **Protealis** - Belgium

18 **Rudloff Feldsaaten GmbH** - Germany

19 **Sanac** - Belgium

20 **Seed Force** - New Zealand

21 **Semences de France** - France

22 **Semental SAS** - France

23 **Ten Have Seeds B.V.** - The Netherlands

24 **UAB Agrolitpa** - Lithuania

25 **Vandinter Semo** - The Netherlands

28 **Westyard BV** - The Netherlands

ILVO Zaden - Seeds

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