Cover:

Photo of Isea field

“Raffigurazione di aratura”
Egyptian tomb Sennedjen

“Monaci cistercensi alla raccolta del grano”
by Jörg Breu the Old (1475-1537)
Altar table of San Bernardo
Cistercian abbey of Zwettl (Austria).

The “Ciclo dei Mesi” (August)
XIV° sec. / Master Venceslao
Buonconsiglio Castle in Trento.

“Falciatrice trainata da cavalli”
Wust A., Landwirtschaftliche Maschinenkunde

Advertising Landini
Milan Fair / 1951.
OUR PRODUCTS

Varieties with greater bread-making yield
Varieties with greater pasta-making yield and for the food chain
Varieties suitable for different cultivation and usage conditions

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AGROSERVICE S.p.A.

We produce, select, pack, and sell a wide variety of grain seeds that respond well to the different needs in crop cultivation, different climatic and geographic conditions too.

THE RESEARCH

We keep on researching with the purpose of:

- Producing raw materials that can improve the quality and state of health of the products available to our consumers;
- Contribute in encouraging more sustainable agricultural practices;
- Putting food more "at the service" of our health.

The European Community is striving to ensure that the whole food production system is more sustainable and provides an ever greater guarantee of health.

This is why, among the six priorities of the European Commission, the European Green Deal was born with the aim of "striving to be the first climate-neutral continent". The European Green Deal includes a program with actions aimed at promoting the efficient use of resources and restoring biodiversity through the reduction of pollution.

In this context, the From Farm To Fork (From producer to consumer) action is to be implemented by 2030 and aimed primarily at:

- reduce the use of pesticides by 50%;
- reduce the use of fertilizers by 20%;
- increase agricultural land by 25% intended for organic farming.

For many years, the scientific community has been wondering how it will be possible to manage the resources of our planet to respond to the growing demand for consumption, especially food.

In the graph “THE FUTURE OF WHEAT” the estimates of world average grain production (vertical axis) and the passing of decades (horizontal axis) are put in relation.

The trend is clear. The scenario, considered in 2050, sees an estimate of production (orange arrow) increasingly insufficient to meet food needs (green arrow).

There are also other adverse factors (red arrow) that can further aggravate the gap, such as: the development of new DISEASES; the reduction of the availability of WATER; CLIMATE CHANGES, which negatively affect production. Only through the expansion of knowledge, the implementation of AGRONOMY techniques and VEGETABLE GENETIC IMPROVEMENT will it be possible to bridge the estimated gap.
Agroservice, which has always invested in research and development in agriculture through the work of Isea, will continue to strive to contribute and support this challenge of global importance.

The same themes that have become strategic in the From Farm To Fork action for years have been the main research topics that Agroservice/Isea have launched; and the excellent results obtained are an important stage from which the new programs begin.

In 2015, we entered the first variety of common wheat totally resistant to fusariosis of the ear to the Italian Varietal Register: Ilaria. The resistance to fusarium of the Ilaria variety is high up to make antifungal leaf treatments unjustified, using a suitably tanned seed. With similar characteristics other varieties are being registered. The use of these resistant varieties represent an indispensable condition for good organic cultivation.

Now, the challenge that Agroservice/Isea’s research has set itself is to achieve the same results also on durum wheat. The genetic improvement work in this sector is much more complex, due to the genetic structure of the species and because cultivation has historically occurred in environments unfavorable to the development of resistance to Fusarium. The first results of the research projects, launched for several years, are very positive and are such as to make us believe that the goal can be achieved.

We have highlighted only one theme of our research so far, but we are committed to meeting other new challenges, including the negative effects caused by climate change: increasing crop productivity and meeting the changing demands of processors and consumers.
THE QUALITY

The aim of our management system is based on the attainment of maximum quality. How? Through:

- Identifiability of raw materials.
- Transfer of innovation and Know-how to agricultural practices.
- The use of equipment and systems selection and packaging always at the forefront.

THE SUSTAINABILITY

- Constant improvement in the efficiency of agricultural practices with the purpose of reducing environmental impact, water and electricity consumption.
- We identify and promote sustainable agricultural practices that will benefit the entire productive chain throughout.
- We support cultivation techniques that respect bio-diversity, the conservation in time of the soil’s fertility: healthy and safe agricultural approach from the sowing of the seed to the harvesting of the crop, in order to protect our health.
- Our continual research activity aims at granting agriculturist their economic recognition.
- Respect for the environment and implementation of renewable energy sources (100% certified green energy);
- Putting in place procedures and strict internal and external monitoring/control activities.

Certifications

Certification CREA (compulsory product certification).
Adoption of strict internal monitoring/control procedures.

Agroservice is subscribed to CONVASE (Consortium for the Enhancement of Seeds)

The main purpose of the afore-mentioned subscription is to share with other seed-growing agricultural member holdings, actions to put in place in order to improve the quality of seeds. Seeds produced by our estate are thus checked by Convase both for the tanning and quality of the seed itself.

A window on the “infinity” fields...

Maciste variety / Az. Agr. Conti Leopardi in San Leopardo / Recanati (Mc)
You will have the correct quantity of seeds to be sown per hectare (Ha), Agroservice informs on weight of 1000 seeds produced per batch and their germinating capacity.

Click on InfoSemina on the www.agroservice-spa.it website and, for soft and hard wheat varieties, enter the batch number of the seed purchased as a password.

In this way, you will be able to see the germinating capacity and the weight of 1000 seeds concerning the specific batch.

In order to better manage the climatic changes and boost optimum production potential, Horta Srl has developed a technical assistance service: grano.net®. This technical assistance will aid you in dealing with the variable climatic conditions, various soil types and different biotic (like fungi and insects) as well as abiotic (like yellow notches) adversities which can be better monitored and checked. Consulting grano.net® you will have access to a series of mathematical models and forecasts which will provide you with personalised suggestions on the dosage, manuring programme, chemical herbicides, monitoring of main fungi diseases (powdery mildew, reddish-brown and yellow rust, septoria and fusarium of the ear), the forecast model DON, provides information on plant-health and fertilisers on sale, monitoring of the local meteorological trends, 7 day weather forecast and an estimate on the water-balance of the soil and phenological phase of the crop.

You may also receive free SMS or e-mails advising you on how to proceed the following days.
Focus on cultivation techniques of soft and hard wheat to optimise yields and quality

Agroservice, in cooperation with Hort@, provides agriculturists with a technical protocol which includes tips and suggestions to optimise yields and quality.

**An excellent and useful instrument**

- To meet professionalism and quality requests coming from the milling industry;
- To understand, through an agronomic calibration, the potentiality and peculiarities of each variety;
- To enhance improved genetic materials, even regarding periods with adverse climatic conditions;
- To provide with assistance to minimise production fluctuations due to climate;
- To provide with effective assistance offering solutions on the management of climatic, nutritious and phytopathological problems with the purpose of increasing productivity and competitiveness of productions.

A window on the field...
FRUMENTO DURO
CLETO

CYCLE > medium

High productivity
High tolerance to the main diseases
High yellow index
Suitable for pasta and bread

FEATUDES

PHENOTYPE
• Ear: short/compact/pyramidal/glaucosity/white
• Awn: light brown
• Plant height: 78-82 cm
• Tillering: medium-high
• Earing: medium

BIOTIC AND ABIOTIC STRESSES
• Cold: resistant
• Water stress: medium resistance
• Lodging: high resistance
• Oidium: medium tolerance
• Leaf rust: medium tolerance
• Fusarium: medium tolerance
• Septoria: medium tolerance
• Yellow rust: tolerant

QUANTITATIVE AND QUALITATIVE TRAITS
• 1,000 seeds weight: 44-48 g
• Test weight: 80-82
• Proteins: 14-14.5%
• Cooking attitude: good
• Colour: 25-27
• Black point: resistant
• Nonvitreous kernels: good resistance
• Gluten index: low 70-75
• Glutenin: 20
• Gliadin: γ 45
• W: 240-250
• P/L: 1.3-1.6

SOWING DENSITY
Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>370-420</td>
<td>370-420</td>
<td>400-450</td>
<td>450-500</td>
<td>-</td>
</tr>
<tr>
<td>Central Italy</td>
<td>370-420</td>
<td>400-420</td>
<td>420-450</td>
<td>450-500</td>
<td>-</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>370-420</td>
<td>400-420</td>
<td>450-500</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit www.agroservicespa.it
Productivity | High tolerance to rusts

Production in grains at 13% humidity
(% in comparison to other tests results)

<table>
<thead>
<tr>
<th>GEOGRAPHICAL AREAS GROWN</th>
<th>2013*</th>
<th>2014*</th>
<th>Average biennial*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>q/ha</td>
<td>% vs tests</td>
<td>q/ha</td>
</tr>
<tr>
<td>Northern Italy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleto</td>
<td>47</td>
<td>103</td>
<td>69</td>
</tr>
<tr>
<td>Average tests results</td>
<td>46</td>
<td>100</td>
<td>62</td>
</tr>
<tr>
<td>Central Italy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleto</td>
<td>56</td>
<td>116</td>
<td>68</td>
</tr>
<tr>
<td>Average tests results</td>
<td>49</td>
<td>100</td>
<td>65</td>
</tr>
<tr>
<td>Southern Italy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleto</td>
<td>43</td>
<td>125</td>
<td>41</td>
</tr>
<tr>
<td>Average tests results</td>
<td>40</td>
<td>100</td>
<td>51</td>
</tr>
</tbody>
</table>

*Data CREA-DC concerning tests for registration in the Vegetal National Registry, with test Iride, Saragolla, Simeto.
# PROVENZAL

**Recipe: Northern Italy**
- Sowing: 320-370
- October: 320-370
- November: 350-370
- December: 350-400
- January: 400-450
- February: -

**Recipe: Central Italy**
- Sowing: 350-370
- October: 350-370
- November: 370-400
- December: 370-400
- January: 400-450
- February: -

**Recipe: Southern Italy**
- Sowing: 320-370
- October: 320-370
- November: 350-400
- December: 400-450
- January: 450-500
- February: -

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it).

---

**Features**

**Durum Wheat**

**Excellent productivity (high yields)**

**Tolerance to diseases**

**Recommended for bread and highly digestible foods**

**Produces highly digestible semolina**

**Phenotype**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ear</td>
<td>medium/compact/pyramidal/white</td>
</tr>
<tr>
<td>Awn</td>
<td>light brown</td>
</tr>
<tr>
<td>Plant height</td>
<td>75-80 cm</td>
</tr>
<tr>
<td>Tillering</td>
<td>high</td>
</tr>
<tr>
<td>Earring</td>
<td>medium-late</td>
</tr>
</tbody>
</table>

**Biotic and Abiotic Stresses**

<table>
<thead>
<tr>
<th>Stress</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold</td>
<td>resistant</td>
</tr>
<tr>
<td>Water stress</td>
<td>medium resistance</td>
</tr>
<tr>
<td>Lodging</td>
<td>high resistance</td>
</tr>
<tr>
<td>Oidium</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Leaf rust</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Fusarium</td>
<td>tolerant</td>
</tr>
<tr>
<td>Septoria</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Virus SBCMVM</td>
<td>resistant</td>
</tr>
</tbody>
</table>

**Quantitative and Qualitative Traits**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 seeds weight</td>
<td>42-48 g</td>
</tr>
<tr>
<td>Test weight</td>
<td>82-83</td>
</tr>
<tr>
<td>Proteins</td>
<td>14-15%</td>
</tr>
<tr>
<td>Cooking attitude</td>
<td>good</td>
</tr>
<tr>
<td>Colour</td>
<td>24-26</td>
</tr>
<tr>
<td>Black point</td>
<td>resistant</td>
</tr>
<tr>
<td>Nonvitreous kernels</td>
<td>medium resistance</td>
</tr>
<tr>
<td>Gluten index</td>
<td>30-40</td>
</tr>
<tr>
<td>Glutenin N, 20</td>
<td></td>
</tr>
<tr>
<td>Gliadin γ45</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>150-180</td>
</tr>
<tr>
<td>P/L</td>
<td>1,0-1,5</td>
</tr>
</tbody>
</table>

---

**Sowing Density**

Germinated seeds/m²

- **November**: 320-370
- **December**: 350-400
- **January**: 400-450
- **February**: -

---

**Notes**

Varieties with greater bread-making yield.
SAN CARLO

**CYCLE > medium-early**

**Features**
- Good productivity
- Very good quality of semolina
- Large caliber seeds

**Sowing Density**

<table>
<thead>
<tr>
<th>Region</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>350-400</td>
<td>350-400</td>
<td>370-420</td>
<td>400-420</td>
<td>400-450</td>
</tr>
<tr>
<td>Central Italy</td>
<td>370-420</td>
<td>400-420</td>
<td>420-450</td>
<td>420-450</td>
<td>400-450</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>-</td>
<td>350-400</td>
<td>400-420</td>
<td>420-450</td>
<td>400-450</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)

**Phenotype**
- Ear: pyramidal/white
- Awn: brown
- Plant height: 80-83 cm (small)
- Tiller: low
- Ear: medium-early

**Biotic and Abiotic Stresses**
- Cold: medium-high resistance
- Water stress: medium resistance
- Lodging: high resistance
- Oidium: medium susceptibility
- Leaf rust: medium susceptibility
- Fusarium: medium susceptibility
- Septoria: medium susceptibility
- Virus SBCMV: good tolerance

**Quantitative and Qualitative Traits**
- 1,000 seeds weight: 55-60 g
- Test weight: 81-83
- Proteins: 14-15%
- Cooking attitude: good
- Colour: 23-24
- Black point: medium resistance
- Nonvitreous kernels: resistant
- Gluten index: 88-90
- Glutenin: N, 7+8
- Gliadin: γ45

**Durum Wheat Varieties**

Varieties with greater pasta-making yield and for the food chain.
### Sowing Density

<table>
<thead>
<tr>
<th>Region</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>350-400</td>
<td>400-500</td>
<td>450-500</td>
<td>500-550</td>
<td>-</td>
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<tr>
<td>Central Italy</td>
<td>370-420</td>
<td>420-520</td>
<td>520-550</td>
<td>520-550</td>
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</tr>
<tr>
<td>Southern Italy</td>
<td>350-400</td>
<td>400-500</td>
<td>500-550</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it).

### MACISTE

**Cycyle:** medium

**Features:**
- High productivity
- Resistant to diseases

### Phenotype
- **Ear:** short/high glaucosity/white/parallel edges
- **Awn:** white
- **Plant height:** 85-90 cm
- **Tillering:** medium-high
- **Earing:** medium

### Biotic and Abiotic Stresses
- **Cold:** resistant
- **Drought:** medium resistance
- **Lodging:** resistant
- **Oidium:** good resistance
- **Leaf rust:** good resistance
- **Fusarium:** medium resistance
- **Septoria:** good resistance

### Quantitative and Qualitative Traits
- **1,000 seeds weight:** 48-50 g
- **Test weight:** 82-84
- **Proteins:** 14-15%
- **Cooking attitude:** good
- **Colour:** 24-25
- **Black point:** resistant
- **Nonvitreous kernels:** good resistance
- **Gluten index:** 80-85
- **Glutenin:** N, 7+8
- **Gliadin:** γ45

**Features:** Varieties with greater pasta-making yield and for the food chain.

**Northern Italy**

**Central Italy**

**Southern Italy**
Excellent quality parameters of semolina (high protein content and yellow index)
High adaptability to different environments
Good tolerance to diseases

### MINOSSE

**CYCLE > medium-early**

### FEATURES

**PHENOTYPE**
- Ear: short/high glaucosity/white/parallel edges
- Awn: brown
- Plant height: 85-87 cm
- Tiller: medium-high
- Earing: medium

**BIOTIC AND ABIOTIC STRESSES**
- Cold: medium resistance
- Water stress: medium resistance
- Lodging: high resistance
- Oidium: medium tolerance
- Leaf rust: medium tolerance
- Fusarium: medium tolerance
- Septoria: medium tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- 1,000 seeds weight: 43-44 g
- Test weight: 80-81
- Proteins: 15-16%
- Cooking attitude: good
- Colour: 24-25
- Black point: medium resistance
- Nonvitreous kernels: resistant
- Gluten index: 85
- Glutelin: N, 7+8
- Gliadin: γ45

### SOWING DENSITY

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>420-470</td>
<td>470-500</td>
<td>470-500</td>
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<tr>
<td>Central Italy</td>
<td>450-470</td>
<td>470-500</td>
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<td>500-550</td>
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</tr>
<tr>
<td>Southern Italy</td>
<td>-</td>
<td>450-470</td>
<td>470-500</td>
<td>500-550</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)
TELEMACO

**CYCLE** > early

Varieties with greater pasta-making yield and for the food chain

**High productivity**

**High quality of semolina**

**Excellent tillering**

---

**PHENOTYPE**

- **Ear**
  - parallel edges/white/compact
  - medium glaucosity

- **Awn**
  - dark

- **Plant height**
  - 80-85 cm

- **Tillering**
  - high

- **Earing**
  - early

**BIOTIC AND ABIOTIC STRESSES**

- **Cold**
  - resistant

- **Water stress**
  - resistant

- **Lodging**
  - resistant

- **Oidium**
  - tolerant

- **Leaf rust**
  - medium tolerance

- **Fusarium**
  - high tolerance

- **Septoria**
  - medium tolerance

- **Yellow rust**
  - high tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**

1. **1.000 seeds weight**
   - 44-46 g

2. **Test weight**
   - 80-82

3. **Proteins**
   - 14-15%

4. **Cooking attitude**
   - excellent

5. **Colour**
   - 23-25

6. **Black point**
   - resistant

7. **Nonvitreous kernels**
   - resistant

8. **Gluten index**
   - 83-85

9. **Glutenin**
   - 7+8

10. **Gliadin**
    - γ45

---

**SOWING DENSITY**

Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
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<tbody>
<tr>
<td><strong>Central Italy</strong></td>
<td>370-420</td>
<td>400-420</td>
<td>420-450</td>
<td>450-500</td>
<td>-</td>
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<tr>
<td><strong>Southern Italy</strong></td>
<td>370-420</td>
<td>400-420</td>
<td>450-500</td>
<td>500</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)
Production in grains (T/Ha) at 13% humidity (% in comparison to other tests results*)

*Data CREA-DC concerning tests for registration in the Vegetal National Registry, with test Iride, Saragolla, Core.

**TELEMACO**

Average qualitative features

Data obtained from comparison tests varieties carried out by ISEA SRL.
**ADONE**

**CYCLE > late**

- Good productivity
- Good tolerance to main diseases
- High quality semolina (high protein content and yellow index)

### SOWING DENSITY

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
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<tbody>
<tr>
<td>Northern Italy</td>
<td>300-350</td>
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<tr>
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<td>320-370</td>
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</tbody>
</table>

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### PHENOTYPE

- **Ear**: long/white/parallel edges/glaucosity
- **Awn**: white
- **Plant height**: 90-95 cm
- **Tillering**: excellent
- **Earing**: late

### FEATURES

- **Ear**: long/white/parallel edges/glaucosity
- **Awn**: white
- **Plant height**: 90-95 cm
- **Tillering**: excellent
- **Earing**: late

### BIOTIC AND ABIOTIC STRESSES

- **Cold**: resistant
- **Water stress**: medium resistance
- **Lodging**: high resistance
- **Oidium**: tolerant
- **Leaf rust**: high tolerance
- **Fusarium**: good tolerance
- **Septoria**: medium tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS

- **1000 seeds weight**: 46-50 g
- **Test weight**: 81-82
- **Proteins**: 14-15%
- **Cooking attitude**: good
- **Colour**: 24-25
- **Black point**: resistant
- **Nonvitreous kernels**: resistant
- **Gluten index**: 88-90
- **Glutenin**: N, 7+8
- **Gliadin**: γ45

- **High quality semolina (high protein content and yellow index)**

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)
### PHENOTYPE
- **Ear**: short/white/glaucosity/parallel edges
- **Awn**: brown
- **Plant height**: 80-85 cm
- **Tillering**: excellent
- **Earing**: medium

### BIOTIC AND ABIOTIC STRESSES
- **Cold**: resistant
- **Water stress**: medium resistance
- **Lodging**: high resistance
- **Oidium**: medium tolerance
- **Leaf rust**: medium tolerance
- **Fusarium**: high tolerance
- **Septoria**: medium tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS
- **1,000 seeds weight**: 38-41 g
- **Test weight**: 82-84
- **Proteins**: 13-13.5%
- **Cooking attitude**: good
- **Colour**: 21-22
- **Black point**: resistant
- **Nonvitreous kernels**: medium resistance
- **Gluten index**: 90-93
- **Glutenin**: N, 6+8
- **Gliadin**: γ45

### FEATURES
- Varieties suitable for different cultivation and usage conditions

### DURUM WHEAT SOWING DENSITY

<table>
<thead>
<tr>
<th>Region</th>
<th>October</th>
<th>November</th>
<th>December</th>
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</tbody>
</table>

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## ETTORE

**CYCLE** > medium

### High productivity
### High adaptability
### Resistant to nonvitreous kernels

<table>
<thead>
<tr>
<th>SOWING DENSITY</th>
<th>October</th>
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<th>December</th>
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<th>February</th>
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</table>

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### PHENOTYPE
- **Ear**: short/white/parallel edges/high glaucosity
- **Awn**: black
- **Plant height**: 88-92 cm
- **Tillering**: excellent
- **Earing**: medium

### BIOTIC AND ABIOTIC STRESSES
- **Cold**: medium resistance
- **Water stress**: resistant
- **Lodging**: excellent resistance
- **Oidium**: medium tolerance
- **Leaf rust**: medium tolerance
- **Fusarium**: medium tolerance
- **Yellow rust**: tolerant
- **Septoria**: medium tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS
- **1,000 seeds weight**: 45-50 g
- **Test weight**: 81-82
- **Proteins**: 13-14%
- **Cooking attitude**: good
- **Colour**: 24-25
- **Black point**: resistant
- **Nonvitreous kernels**: resistant
- **Gluten index**: 83-85
- **Glutenin**: N, 7+8
- **Gliadin**: γ45

### FEATURES
- Varieties suitable for different cultivation and usage conditions

**DURUM WHEAT**

Germinated seeds/m²
### Features

**CUSPIDE**

- Excellent productivity
- High gluten index
- Resistance to cold
- High yellow index

**Cycle:** medium

**Phenotype**
- **Ear:** short/white/high glaucosity/parallel edges
- **Awn:** brown
- **Plant height:** 85-88 cm
- **Tillering:** excellent
- **Earing:** medium

**Biotic and Abiotic Stresses**
- **Cold:** resistant
- **Water stress:** resistant
- **Lodging:** excellent resistance
- **Oidium:** tolerant
- **Leaf rust:** high tolerance
- **Fusarium:** medium tolerance
- **Septoria:** medium tolerance

**Quantitative and Qualitative Traits**
- **1,000 seeds weight:** 43-46 g
- **Test weight:** 81-82
- **Proteins:** 13-14%
- **Cooking attitude:** good
- **Colour:** 26-28
- **Black point:** resistant
- **Nonvitreous kernels:** resistant
- **Gluten index:** 90-94
- **Glutenin:** N, 7+8
- **Gliadin:** γ45

**Sowing Density**

<table>
<thead>
<tr>
<th>Region</th>
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**DOMINO**

**CYCLE > medium-late**

- High productivity
- Good tolerance to main diseases
- Tough gluten

### SOWING DENSITY

<table>
<thead>
<tr>
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<th>January</th>
<th>February</th>
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### PHENOTYPE

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ear</td>
<td>white/medium/elongated/parallel edges medium glaucosity</td>
</tr>
<tr>
<td>Awn</td>
<td>black</td>
</tr>
<tr>
<td>Plant height</td>
<td>98-100 cm</td>
</tr>
<tr>
<td>Tillering</td>
<td>excellent</td>
</tr>
<tr>
<td>Earing</td>
<td>medium-late</td>
</tr>
</tbody>
</table>

### FEATURES

Varieties suitable for different cultivation and usage conditions.

### BIOTIC AND ABIOTIC STRESSES

<table>
<thead>
<tr>
<th>Stress</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water stress</td>
<td>resistant</td>
</tr>
<tr>
<td>Lodging</td>
<td>good resistance</td>
</tr>
<tr>
<td>Oidium</td>
<td>good tolerance</td>
</tr>
<tr>
<td>Leaf rust</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Yellow rust</td>
<td>high tolerance</td>
</tr>
<tr>
<td>Fusarium</td>
<td>high tolerance</td>
</tr>
<tr>
<td>Septoria</td>
<td>medium tolerance</td>
</tr>
</tbody>
</table>

### QUANTITATIVE AND QUALITATIVE TRAITS

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 seeds weight</td>
<td>42-45 g</td>
</tr>
<tr>
<td>Test weight</td>
<td>81-83</td>
</tr>
<tr>
<td>Proteins</td>
<td>13-14%</td>
</tr>
<tr>
<td>Colour</td>
<td>24-25</td>
</tr>
<tr>
<td>Black point</td>
<td>resistant</td>
</tr>
<tr>
<td>Nonvitreous kernels</td>
<td>resistant</td>
</tr>
<tr>
<td>Gluten index</td>
<td>90-95</td>
</tr>
<tr>
<td>Glutenin</td>
<td>N, 7+8</td>
</tr>
<tr>
<td>Gliadin</td>
<td>γ45</td>
</tr>
</tbody>
</table>

Varieties suitable for different cultivation and usage conditions.
DORATO

CYCLE > medium-early

High productivity
Resistance to drought

Northern Italy

<table>
<thead>
<tr>
<th>SOWING DENSITY</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germinated seeds/m²</td>
<td>400-450</td>
<td>450-500</td>
<td>470-520</td>
<td>500-550</td>
</tr>
</tbody>
</table>

Central Italy

<table>
<thead>
<tr>
<th>SOWING DENSITY</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germinated seeds/m²</td>
<td>420-470</td>
<td>470-520</td>
<td>470-520</td>
<td>500-550</td>
</tr>
</tbody>
</table>

Southern Italy

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PHENOTYPE

- **Ear**: long/white/high glaucosity/parallel edges
- **Awn**: white
- **Plant height**: 90-95 cm
- **Tillering**: medium
- **Earing**: medium-early

BIOTIC AND ABIOTIC STRESSES

- **Cold**: medium resistance
- **Water stress**: good resistance
- **Lodging**: good resistance
- **Oidium**: medium tolerance
- **Leaf rust**: medium tolerance
- **Fusarium**: medium tolerance
- **Septoria**: medium tolerance

QUANTITATIVE AND QUALITATIVE TRAITS

- **1,000 seeds weight**: 41-43 g
- **Test weight**: 82-83
- **Proteins**: 13-14%
- **Cooking attitude**: good
- **Colour**: 22-24
- **Black point**: resistant
- **Nonvitreous kernels**: medium resistance
- **Gluten index**: 88-90
- **Glutenin**: N, 7+8
- **Gliadin**: γ45

FEATURES

Varieties suitable for different cultivation and usage conditions

DURUM WHEAT
## SOWING DENSITY

Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
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<th>November</th>
<th>December</th>
<th>January</th>
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<tbody>
<tr>
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<td>370-420</td>
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## Features

**DURUM WHEAT**

**Central Italy**

**Southern Italy**

### Tolerant to the main fungal diseases

- High yield guarantee
- High yellow index and high proteins

### PHENOTYPE

- **Ear**: long/pyramidal/glaucosity/white
- **Awn**: white
- **Plant height**: 82-87 cm
- **Tillering**: high
- **Earing**: early

### BIOTIC AND ABIOTIC STRESSES

- **Cold**: resistant
- **Water stress**: resistant
- **Lodging**: resistant
- **Oidium**: high tolerance
- **Leaf rust**: high tolerance
- **Fusarium**: high tolerance
- **Septoria**: medium tolerance
- **Yellow rust**: tolerant

### QUANTITATIVE AND QUALITATIVE TRAITS

- **1,000 seeds weight**: 44-46 g
- **Test weight**: 80-81
- **Proteins**: 15-16%
- **Cooking attitude**: excellent
- **Colour**: 24-26
- **Black point**: resistant
- **Nonvitreous kernels**: resistant
- **Gluten index**: 82-87
- **Glutenin**: 6+8
- **Gliadin**: γ45

---

**ERMES CYCLE > early**

Varieties suitable for different cultivation and usage conditions
Production in grains (T/Ha) at 13% humidity (% in comparison to other tests results*)

*Data CREA-DC concerning tests for registration in the Vegetal National Registry, with test Iride, Saragolla, Core.

Data obtained from comparison tests varieties carried out by ISEA SRL.

ERMES

Average qualitative features
RUSTICANO

CYCLE > early

Excellent productivity
High resistance to drought

DURUM WHEAT

Varieties suitable for different cultivation and usage conditions

SOWING DENSITY
Germinated seeds/m²

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<thead>
<tr>
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<td>420-470</td>
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<table>
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<td>500-550</td>
</tr>
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</table>

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PHENOTYPE

- **Ear**: compact/big/parallel edges
- **Awn**: very long/brown when ripened
- **Plant height**: 75-80 cm (small)
- **Tillering**: high
- **Earing**: early

BIOTIC AND ABIOTIC STRESSES

- **Cold**: medium resistance
- **Water stress**: resistant
- **Earing**: medium-early
- **Lodging**: high resistance
- **Oidium**: medium tolerance
- **Leaf rust**: medium susceptibility in the areas at risk
- **Fusarium**: medium tolerance

QUANTITATIVE AND QUALITATIVE TRAITS

- **Glutenin**: N, 7+8
- **Gliadin**: γ45

FEATURES

- Varieties suitable for different cultivation and usage conditions

26
SPARTACO DURUM WHEAT

CYCLE > early

High productivity
Proteins and Colour
Large caliber seeds

<table>
<thead>
<tr>
<th>SOWING DENSITY</th>
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PHENOTYPE
- Ear: medium/white/glaucosity/parallel edges
- Awn: white
- Plant height: 85-88 cm
- Tillering: excellent
- Earing: early

BIOTIC AND ABIOTIC STRESSES
- Cold: medium resistance
- Water stress: resistant
- Lodging: high resistance
- Oidium: tolerant
- Leaf rust: medium susceptibility in the areas at risk
- Fusarium: medium tolerance
- Septoria: medium tolerance

QUANTITATIVE AND QUALITATIVE TRAITS
- 1,000 seeds weight: 59-62 g
- Test weight: 81-82
- Proteins: 13-14%
- Cooking attitude: excellent
- Colour: 24-26
- Black point: resistant
- Nonvitreous kernels: resistant
- Gluten index: 80-85
- Glutenin: N, 7+8
- Gliadin: γ45

Features:
Varieties suitable for different cultivation and usage conditions

www.agroservicespa.it
FRUMENTO TENERO
**DRUSILLA**

**BREAD WHEAT**

- **Strong wheat, with very balanced P/L**
- **High yields in all conditions guaranteed**

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### SOWING DENSITY

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### PHENOTYPE

<table>
<thead>
<tr>
<th>Trait</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain colour</td>
<td>red</td>
</tr>
<tr>
<td>Ear</td>
<td>medium/pyramidal/amber</td>
</tr>
<tr>
<td>Awn</td>
<td>present</td>
</tr>
<tr>
<td>Plant height</td>
<td>80-83 cm</td>
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<tr>
<td>Habitus</td>
<td>alternative</td>
</tr>
<tr>
<td>Tillering</td>
<td>high</td>
</tr>
<tr>
<td>Earing</td>
<td>medium-early</td>
</tr>
<tr>
<td>Lodging</td>
<td>resistant</td>
</tr>
</tbody>
</table>

### BIOTIC AND ABIOTIC STRESSES

- **Cold** resistant
- **Oidium** tolerant
- **Leaf rust** medium tolerance
- **Yellow rust** tolerant
- **Fusarium** medium tolerance
- **Septoria** good tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS

<table>
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<tr>
<th>Trait</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 seeds weight</td>
<td>42-44 g</td>
</tr>
<tr>
<td>Proteins</td>
<td>13-15%</td>
</tr>
<tr>
<td>Hardness</td>
<td>medium</td>
</tr>
<tr>
<td>Class</td>
<td>strong wheat</td>
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<tr>
<td><strong>W</strong></td>
<td>290-310</td>
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<tr>
<td><strong>P/L</strong></td>
<td>0.7-0.9</td>
</tr>
</tbody>
</table>

---

*Germinated seeds/m²*
Data obtained from comparison tests varieties carried out by ISEA SRL.

**DRUSILLA**

**Average qualitative features**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test weight</td>
<td>76.4 kg/hl</td>
</tr>
<tr>
<td>Proteins (%)</td>
<td>13.5%</td>
</tr>
<tr>
<td>Absorption (%)</td>
<td>61.3%</td>
</tr>
<tr>
<td>SDS W</td>
<td>335</td>
</tr>
<tr>
<td>P/L</td>
<td>0.8</td>
</tr>
</tbody>
</table>

North

<table>
<thead>
<tr>
<th>Year</th>
<th>Test weight (kg/hl)</th>
<th>Proteins (%)</th>
<th>Absorption (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-2018</td>
<td>112</td>
<td>13.5</td>
<td>61.3</td>
</tr>
<tr>
<td>2018-2019</td>
<td>108</td>
<td>13.5</td>
<td>61.3</td>
</tr>
</tbody>
</table>

Centre

<table>
<thead>
<tr>
<th>Year</th>
<th>Test weight (kg/hl)</th>
<th>Proteins (%)</th>
<th>Absorption (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-2018</td>
<td>109</td>
<td>13.5</td>
<td>61.3</td>
</tr>
<tr>
<td>2018-2019</td>
<td>104</td>
<td>13.5</td>
<td>61.3</td>
</tr>
</tbody>
</table>

Biennium

<table>
<thead>
<tr>
<th>Year</th>
<th>Test weight (kg/hl)</th>
<th>Proteins (%)</th>
<th>Absorption (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-2018</td>
<td>112</td>
<td>13.5</td>
<td>61.3</td>
</tr>
<tr>
<td>2018-2019</td>
<td>108</td>
<td>13.5</td>
<td>61.3</td>
</tr>
<tr>
<td>2019-2020</td>
<td>104</td>
<td>13.5</td>
<td>61.3</td>
</tr>
</tbody>
</table>

**Notes:**
- 112, 108, 109, and 104 represent the test weight in kg/hl for the respective years.
- 13.5% is the average protein content for all years.
- 61.3% is the average absorption percentage for all years.
**GIUNONE**

- **Red seed**
- **Productivity**
- **High resistance to diseases**
- **High biomass**

### PHENOTYPE

<table>
<thead>
<tr>
<th>Trait</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grain colour</strong></td>
<td>red</td>
</tr>
<tr>
<td><strong>Ear</strong></td>
<td>medium/parallel edges/white/glaucosity</td>
</tr>
<tr>
<td><strong>Awn</strong></td>
<td>absent</td>
</tr>
<tr>
<td><strong>Plant height</strong></td>
<td>75-80 cm</td>
</tr>
<tr>
<td><strong>Habitus</strong></td>
<td>winter</td>
</tr>
<tr>
<td><strong>Tillering</strong></td>
<td>excellent</td>
</tr>
<tr>
<td><strong>Earing</strong></td>
<td>medium</td>
</tr>
<tr>
<td><strong>Lodging</strong></td>
<td>resistant</td>
</tr>
</tbody>
</table>

### BIOTIC AND ABIOTIC STRESSES

<table>
<thead>
<tr>
<th>Stress</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cold</strong></td>
<td>resistant</td>
</tr>
<tr>
<td><strong>Oidium</strong></td>
<td>tolerant</td>
</tr>
<tr>
<td><strong>Leaf rust</strong></td>
<td>medium tolerance</td>
</tr>
<tr>
<td><strong>Yellow rust</strong></td>
<td>high tolerance</td>
</tr>
<tr>
<td><strong>Fusarium</strong></td>
<td>moderately tolerant</td>
</tr>
<tr>
<td><strong>Septoria</strong></td>
<td>good tolerance</td>
</tr>
</tbody>
</table>

### QUANTITATIVE AND QUALITATIVE TRAITS

<table>
<thead>
<tr>
<th>Trait</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1,000 seeds weight</strong></td>
<td>38-41 g</td>
</tr>
<tr>
<td><strong>Proteins</strong></td>
<td>12-13%</td>
</tr>
<tr>
<td><strong>Hardness</strong></td>
<td>medium</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>standard bread-making</td>
</tr>
<tr>
<td><strong>W</strong></td>
<td>120-180</td>
</tr>
<tr>
<td><strong>P/L</strong></td>
<td>0,5-0,6</td>
</tr>
</tbody>
</table>
GIUNONE

Average qualitative features

Data obtained from comparison tests varieties carried out by ISEA SRL.

Production in grains (T/Ha) at 13% humidity (% in comparison to other tests results*)

*Data CREA-DC concerning tests for registration in the Vegetal National Registry, with test Blasco, Bologna, Bramante and Solehio.

Test weight (kg/hl)

Absorption (%) 58,3
Proteins (%) 13,5
W 135
SDS 55
P/L 0,5

GIUNONE

Average qualitative features

Data obtained from comparison tests varieties carried out by ISEA SRL.

Production in grains (T/Ha) at 13% humidity (% in comparison to other tests results*)

*Data CREA-DC concerning tests for registration in the Vegetal National Registry, with test Blasco, Bologna, Bramante and Solehio.
**MINERVA**

**FEATURES**
- Standard bread-making/biscuits
- Red-amber seed
- Very high productivity
- Excellent tolerance to diseases

**PHENOTYPE**
- Grain colour: red
- Ear: medium/pyramidal/white/high glaucosity
- Awn: present
- Plant height: 84-87 cm
- Habitus: alternative
- Tillering: high
- Earing: medium
- Lodging: resistant

**BIOTIC AND ABIOTIC STRESSES**
- Cold: resistant
- Oidium: extremely tolerant
- Leaf rust: medium tolerance
- Yellow rust: high tolerance
- Fusarium: high tolerance
- Septoria: good tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- 1,000 seeds weight: 42-44 g
- Proteins: 11-12%
- Hardness: medium
- Class: biscuits/standard bread-making
- W: 100-120
- P/L: 0.5-0.6

For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)
MINERVA

Average qualitative features

Data obtained from comparison tests varieties carried out by ISEA SRL.

Production in grains (T/ha) at 13% humidity (% in comparison to other tests results*)

*Data CREA-DC concerning tests for registration in the Vegetal National Registry, with test Blasco, Bologna, Bramante and Solehio.
**ILARIA**

**Antifusarium**

**ACYCLE > late**

- Standard bread-making
- Amber seed
- Good productivity
- High resistance to disease

---

### PHENOTYPE

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grain colour</strong></td>
<td>amber</td>
</tr>
<tr>
<td><strong>Ear</strong></td>
<td>medium-long/pyramidal/white</td>
</tr>
<tr>
<td></td>
<td>high glaucosity</td>
</tr>
<tr>
<td><strong>Awn</strong></td>
<td>absent</td>
</tr>
<tr>
<td><strong>Plant height</strong></td>
<td>80-85 cm</td>
</tr>
<tr>
<td><strong>Habitus</strong></td>
<td>winter</td>
</tr>
<tr>
<td><strong>Tillering</strong></td>
<td>high</td>
</tr>
<tr>
<td><strong>Earing</strong></td>
<td>medium</td>
</tr>
<tr>
<td><strong>Lodging</strong></td>
<td>excellent resistance</td>
</tr>
</tbody>
</table>

### BIOTIC AND ABIOTIC STRESSES

- **Cold** resistant
- **Oidium** tolerant
- **Leaf rust** medium tolerance
- **Yellow rust** resistant
- **Fusarium** high resistance > First in Italy with the major QTLs of resistance
- **Septoria** good tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS

<table>
<thead>
<tr>
<th>Trait</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.000 seeds weight</strong></td>
<td>40-44 g</td>
</tr>
<tr>
<td><strong>Test weight</strong></td>
<td>81-83</td>
</tr>
<tr>
<td><strong>Proteins</strong></td>
<td>12-14%</td>
</tr>
<tr>
<td><strong>Hardness</strong></td>
<td>medium</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>standard bread-making</td>
</tr>
<tr>
<td><strong>W</strong></td>
<td>140-160</td>
</tr>
<tr>
<td><strong>P/L</strong></td>
<td>0.4-0.5</td>
</tr>
</tbody>
</table>

### FEATURES

- Standard bread-making
- Amber seed
- Good productivity
- High resistance to disease

---

### SOWING DENSITY

<table>
<thead>
<tr>
<th>Region</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>320-380</td>
<td>350-380</td>
<td>350-400</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Central Italy</td>
<td>350-380</td>
<td>350-380</td>
<td>350-420</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)
Resistance to Fusarium

Accumulation of DON (ppb) in Grains

Effect % and severity % of Fusarium on the plant

Tests carried out in the open field.

Intensive irrigation during the blooming stage which will favour a natural development of
the funghi. The lines are tested both in the presence and absence of fungicide treatment.
NEFERTARI
CYCLE > medium

Strong wheat
High tolerance to Fusarium
Balanced P/L

PHENOTYPE
- Grain colour: pink
- Ear: medium/parallel edges/white high glaucosity
- Awn: present
- Plant height: 85-87 cm
- Habitus: alternative
- Tillering: excellent
- Earing: medium-early
- Lodging: resistant

BIOTIC AND ABIOTIC STRESSES
- Cold: resistant
- Oidium: high tolerance
- Leaf rust: high tolerance
- Yellow rust: medium tolerance
- Fusarium: resistant
- Septoria: excellent tolerance

QUANTITATIVE AND QUALITATIVE TRAITS
- 1,000 seeds weight: 40-44 g
- Proteins: 14-15%
- Hardness: medium
- Class: strong wheat
- W: 330-370
- P/L: 0.6-0.7

Tests carried out in the open field.
Intensive irrigation during the blooming stage which will favour a natural development of the fungi. The lines are tested both in the presence and absence of fungicide treatment.

DON ppb

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosalind</td>
<td>0</td>
<td>92.3</td>
</tr>
<tr>
<td>Frida</td>
<td>0</td>
<td>80.5</td>
</tr>
<tr>
<td>Nefertari</td>
<td>210</td>
<td>218.7</td>
</tr>
</tbody>
</table>

Untreated
Treated
Production in grains (T/ha) at 13% humidity (% in comparison to other tests results*)

*Data CREA-DC concerning tests for registration in the Vegetal National Registry, with test Blasco, Bologna, Bramante and Solehio.

NEFERTARI Average qualitative features

Data obtained from comparison tests varieties carried out by ISEA SRL.
AFRODITE

CYCLE > medium-late

Standard bread-making
Amber-white seed
High productivity
Also recommended for the production of silage

### FEATURES

#### PHENOTYPE
- Grain colour: amber-white
- Ear: medium/parallel edges/white/glaucosity
- Awn: absent
- Plant height: 82-86 cm
- Habitus: winter
- Tillering: high
- Earring: medium-late
- Lodging: excellent resistance

#### BIOTIC AND ABIOTIC STRESSES
- Cold: resistant
- Oidium: tolerant
- Leaf rust: medium tolerance
- Fusarium: medium tolerance
- Virus SBCMV: medium tolerance
- Septoria: medium tolerance

#### QUANTITATIVE AND QUALITATIVE TRAITS
- 1,000 seeds weight: 38-41 g
- Test weight: 80-82
- Proteins: 11-13%
- Hardness: medium-soft
- Class: standard bread-making
- W: 140
- P/L: 0,5

### SOWING DENSITY

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>320-370</td>
<td>320-370</td>
<td>350-400</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Central Italy</td>
<td>350-400</td>
<td>370-420</td>
<td>400-450</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)
### Sowing Density

<table>
<thead>
<tr>
<th>Country</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>370-450</td>
<td>370-450</td>
<td>400-450</td>
<td>420-450</td>
<td>-</td>
</tr>
<tr>
<td>Central Italy</td>
<td>370-450</td>
<td>400-450</td>
<td>400-450</td>
<td>420-470</td>
<td>450-500</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>370-450</td>
<td>400-450</td>
<td>420-450</td>
<td>420-470</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)

---

### Phenotype

- **Grain colour**: red
- **Ear**: medium/pyramidal/white
- **Awn**: present
- **Plant height**: 80-85 cm
- **Habitus**: alternative
- **Tillering**: medium-high
- **Earing**: medium
- **Lodging**: high resistance

### Biotic and Abiotic Stresses

- **Cold**: resistant
- **Oidium**: tolerant
- **Leaf rust**: medium tolerance
- **Fusarium**: medium tolerance
- **Virus SBCMV**: medium tolerance
- **Yellow rust**: medium tolerance
- **Septoria**: medium tolerance

### Quantitative and Qualitative Traits

- **1,000 seeds weight**: 44-46 g
- **Test weight**: 81-83
- **Proteins**: 13-15%
- **Hardness**: medium
- **Class**: strong wheat
- **W**: 380-430
- **P/L**: 0.7-1.0

---

**ELETTA**

**Cycle**: medium

- Strong wheat
- Red seed
- High productivity
LUCILLA
CYCLE > medium

**BREAD WHEAT**

Strong wheat  
Red seed  
High productivity

**SOWING DENSITY**
Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>320-370</td>
<td>320-370</td>
<td>350-400</td>
<td>350-400</td>
<td>-</td>
</tr>
<tr>
<td>Central Italy</td>
<td>350-400</td>
<td>350-400</td>
<td>370-420</td>
<td>400-450</td>
<td>400-450</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>350-400</td>
<td>370-420</td>
<td>400-450</td>
<td>400-450</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)

**PHENOTYPE**
- **Grain colour**: red  
- **Ear**: medium/pyramidal/amber  
- **Awn**: present  
- **Plant height**: 85-90 cm  
- **Habitus**: alternative  
- **Tillering**: high  
- **Earing**: medium  
- **Lodging**: excellent resistance

**BIOTIC AND ABIOTIC STRESSES**
- **Cold**: resistant  
- **Water stress**: resistant  
- **Oidium**: tolerant  
- **Leaf rust**: good tolerance  
- **Virus SBCMV**: resistant  
- **Yellow rust**: medium tolerance  
- **Fusarium**: medium tolerance  
- **Septoria**: medium tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- **1,000 seeds weight**: 43-45 g  
- **Test weight**: 81-83  
- **Proteins**: 13-15%  
- **Hardness**: medium  
- **Class**: strong wheat  
- **W**: 290-310  
- **P/L**: 0.7-0.9

**FEATURES**
- Strong wheat  
- Red seed  
- High productivity

**GERMINATED SEEDS/m²**

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)
### PHENOTYPE
- **Grain colour**: red-amber
- **Ear**: medium-long/parallel edges, white/glaucosity
- **Awn**: present
- **Plant height**: 75-80 cm
- **Habitus**: winter
- **Tillering**: medium-high
- **Earing**: medium
- **Lodging**: high resistance

### BIOTIC AND ABIOTIC STRESSES
- **Cold**: resistant
- **Oidium**: good tolerance
- **Leaf rust**: medium tolerance
- **Fusarium**: medium tolerance
- **Virus SBCM**: resistant
- **Yellow rust**: tolerant
- **Septoria**: medium tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS
- **1,000 seeds weight**: 36-38 g
- **Test weight**: 80-81
- **Proteins**: 13-14%
- **Hardness**: medium
- **Class**: superior bread-making
- **W**: 250-260
- **P/L**: 0.8-0.9

### SOWING DENSITY
- **Germinated seeds/m²**

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Northern Italy</strong></td>
<td>450-550</td>
<td>450-550</td>
<td>500-550</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Central Italy</strong></td>
<td>450-550</td>
<td>450-550</td>
<td>500-600</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Southern Italy</strong></td>
<td>450-550</td>
<td>450-550</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)
## BREAD WHEAT

**STENDAL**

**CYCLE** > medium-early

- **Strong wheat**
- **Amber seed**
- **High productivity**
- **High adaptability**
- **High tolerance to leaf rust**

### Phenotype

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain colour</td>
<td>amber</td>
</tr>
<tr>
<td>Ear</td>
<td>medium/parallel edges/white</td>
</tr>
<tr>
<td></td>
<td>high glaucosity</td>
</tr>
<tr>
<td>Awn</td>
<td>present</td>
</tr>
<tr>
<td>Plant height</td>
<td>80-85 cm</td>
</tr>
<tr>
<td>Habitus</td>
<td>alternative</td>
</tr>
<tr>
<td>Tillering</td>
<td>high</td>
</tr>
<tr>
<td>Earing</td>
<td>medium</td>
</tr>
<tr>
<td>Lodging</td>
<td>high resistance</td>
</tr>
</tbody>
</table>

### Biotic and Abiotic Stresses

<table>
<thead>
<tr>
<th>Stress</th>
<th>Resistance/Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold</td>
<td>medium resistance</td>
</tr>
<tr>
<td>Oidium</td>
<td>tolerant</td>
</tr>
<tr>
<td>Leaf rust</td>
<td>tolerant</td>
</tr>
<tr>
<td>Fusarium</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Yellow rust</td>
<td>medium susceptibility in the areas at risk</td>
</tr>
<tr>
<td>Septoria</td>
<td>good tolerance</td>
</tr>
</tbody>
</table>

### Quantitative and Qualitative Traits

<table>
<thead>
<tr>
<th>Trait</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000 seeds weight</td>
<td>38-42 g</td>
</tr>
<tr>
<td>Test weight</td>
<td>80-82</td>
</tr>
<tr>
<td>Proteins</td>
<td>14-15%</td>
</tr>
<tr>
<td>Hardness</td>
<td>medium</td>
</tr>
<tr>
<td>Class</td>
<td>strong wheat</td>
</tr>
<tr>
<td>W</td>
<td>320-380</td>
</tr>
<tr>
<td>P/L</td>
<td>0.50-0.60</td>
</tr>
</tbody>
</table>

### Sowing Density

<table>
<thead>
<tr>
<th>Region</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>420-470</td>
<td>420-470</td>
<td>450-500</td>
<td>450-500</td>
<td>500-550</td>
</tr>
<tr>
<td>Central Italy</td>
<td>-</td>
<td>420-500</td>
<td>450-500</td>
<td>500-550</td>
<td>500-550</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>-</td>
<td>420-500</td>
<td>450-500</td>
<td>500-550</td>
<td>500-550</td>
</tr>
</tbody>
</table>

*The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)*

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The image contains a page from a document detailing the characteristics of a cereal crop variety named Stendal. The page outlines the crop's cycle, features, phenotypic traits, biotic and abiotic stress resistances, quantitative and qualitative traits, and sowing density information for Northern, Central, and Southern Italy. The document is useful for farmers and agricultural professionals interested in the variety's performance and suitability in different regions. The density of sowing set out in the table above is indicative, and for more detailed information, one should visit the provided website.
**BREAD WHEAT**

- Superior bread-making
- Amber seed
- Very early cycle

### SOWING DENSITY

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>450-500</td>
<td>450-500</td>
<td>500-550</td>
<td>500-550</td>
<td>500-550</td>
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<tr>
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<td>450-500</td>
<td>500-550</td>
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</tr>
<tr>
<td>Southern Italy</td>
<td>-</td>
<td>450-500</td>
<td>450-520</td>
<td>500-550</td>
<td>500-550</td>
</tr>
</tbody>
</table>

The density of sowing set out in the table above is indicative. For more detailed information visit [www.agroservicespa.it](http://www.agroservicespa.it)

### PHENOTYPE

- **Grain colour**: amber
- **Ear**: medium/parallel edges/white
- **Awn**: present
- **Plant height**: 70-80 cm
- **Habitus**: alternative
- **Tillering**: high
- **Earing**: early
- **Lodging**: excellent resistance

### BIOTIC AND ABIOTIC STRESSES

- **Cold**: resistant
- **Water stress**: resistant
- **Virus SBCMV**: resistant
- **Oidium**: tolerant
- **Leaf rust**: medium tolerance
- **Yellow rust**: medium tolerance
- **Fusarium**: medium tolerance
- **Septoria**: medium tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS

- **1,000 seeds weight**: 38-42 g
- **Test weight**: 82-84
- **Proteins**: 13-15%
- **Hardness**: soft
- **Class**: superior bread-making
- **W**: 210-270
- **P/L**: 0.67-0.90

**FEATURES**

- Superior bread-making
- Amber seed
- Very early cycle
ORZO
ARIANNA
Cycle > medium-early

Multiple rows
Winter sowing (until 15 January)
High adaptability
Fair seed

For shredded use, increase the level of sowing by 10%.

PHENOTYPE
- Ear: medium-long/slightly glaucosity
- Plant height: 95-100 cm
- Tillering: excellent
- Earing: medium-early

BIOTIC AND ABIOTIC STRESSES
- Cold: resistant
- Water stress: resistant
- Lodging: high resistance
- Oidium: medium tolerance
- Rusts: medium tolerance
- Septoria: medium tolerance
- Helminthosporium: medium tolerance
- Rhynchosporium: medium tolerance
- Yellow mosaic virus: medium resistance

QUANTITATIVE AND QUALITATIVE TRAITS
- 1,000 seeds weight: 43 g
- Test weight: 64-66
- Proteins: 12-14%

SOWING DENSITY
Germinated seeds/m²

<table>
<thead>
<tr>
<th>Region</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
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<tbody>
<tr>
<td>Northern Italy</td>
<td>350-380</td>
<td>350-380</td>
<td>370-400</td>
<td>400-430</td>
<td>-</td>
</tr>
<tr>
<td>Central Italy</td>
<td>-</td>
<td>370-400</td>
<td>400-430</td>
<td>420-450</td>
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<td>350-380</td>
<td>370-400</td>
<td>400-430</td>
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</tbody>
</table>
Northern Italy

<table>
<thead>
<tr>
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<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
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</thead>
<tbody>
<tr>
<td>350-380</td>
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<td>370-400</td>
<td>400-430</td>
<td>400-430</td>
<td></td>
</tr>
</tbody>
</table>

Central Italy

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>370-400</th>
<th>400-430</th>
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<th>420-450</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td></td>
<td></td>
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</tbody>
</table>

Southern Italy

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>350-380</th>
<th>370-400</th>
<th>400-430</th>
<th>400-430</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For shredded use, increase the level of sowing by 10%.
**Northern Italy**

<table>
<thead>
<tr>
<th>Month</th>
<th>Germinated seeds/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>350-380</td>
</tr>
<tr>
<td>November</td>
<td>350-380</td>
</tr>
<tr>
<td>December</td>
<td>370-400</td>
</tr>
<tr>
<td>January</td>
<td>400-430</td>
</tr>
<tr>
<td>February</td>
<td>-</td>
</tr>
</tbody>
</table>

**Central Italy**

<table>
<thead>
<tr>
<th>Month</th>
<th>Germinated seeds/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>370-400</td>
</tr>
<tr>
<td>November</td>
<td>400-430</td>
</tr>
<tr>
<td>-</td>
<td>420-450</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Southern Italy**

<table>
<thead>
<tr>
<th>Month</th>
<th>Germinated seeds/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>350-380</td>
</tr>
<tr>
<td>November</td>
<td>370-400</td>
</tr>
<tr>
<td>-</td>
<td>400-430</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

For shredded use, increase the level of sowing by 10%.

**PHENOTYPE**
- **Ear**: medium/glauosity/parallel edges
- **Plant height**: 95-100 cm
- **Tillering**: excellent
- **Earing**: medium-early

**BIOTIC AND ABIOTIC STRESSES**
- **Cold**: resistant
- **Lodging**: good resistance
- **Oidium**: good tolerance
- **Rusts**: good tolerance
- **Septoria**: medium tolerance
- **Helminthosporium**: medium tolerance
- **Rhynchosporium**: medium tolerance
- **Yellow mosaic virus**: resistant

**QUANTITATIVE AND QUALITATIVE TRAITS**
- **1,000 seeds weight**: 40-42 g
- **Test weight**: 62-65
- **Proteins**: 11-12%
SFERA

CYCLE > medium-early

Barley

Features:
- Double rows
- Winter sowing (until 15 January)
- High productivity
- Fair seed

Sowing Density:
- Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>350-380</td>
<td>350-380</td>
<td>370-400</td>
<td>400-430</td>
<td>-</td>
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<tr>
<td>Central Italy</td>
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<td>370-400</td>
<td>400-430</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>-</td>
<td>350-380</td>
<td>370-400</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

For shredded use, increase the level of sowing by 10%.

Phenotype:
- Ear: medium
- Plant height: 80-90 cm
- Tillering: good
- Earing: medium-early

Biotic and Abiotic Stresses:
- Cold: resistant
- Water stress: medium resistance
- Lodging: excellent resistance
- Oidium: medium tolerance
- Rusts: medium tolerance
- Septoria: medium tolerance
- Helminthosporium: medium tolerance
- Rhynchosporium: medium tolerance
- Yellow mosaic virus: resistant

Quantitative and Qualitative Traits:
- 1,000 seeds weight: 48-49 g
- Test weight: 68-70
- Proteins: 11-13%

For shredded use, increase the level of sowing by 10%.
**Northern Italy**
- October: 350-380
- November: 350-380
- December: 370-400
- January: 400-430
- February: 400-430

**Central Italy**
- October: -
- November: 370-400
- December: 400-430
- January: 420-450
- February: 420-450

**Southern Italy**
- October: -
- November: 350-380
- December: 370-400
- January: 400-430
- February: 400-430

*For shredded use, increase the level of sowing by 10%.*
CEREALI MINORI
Northern Italy: 370-400 400-430 420-450 440-470 460-490 460-490
Central Italy: 390-420 420-450 440-470 460-490 480-510 480-510
Southern Italy: - 400-430 420-450 440-470 460-490 460-490

For the production of silage increase the number of seeds per square metre by 10%.
### QUIGNALE

- **Cycle:** late

#### For the production of grains and silage
- **Winter sowing**

#### Sowing density
- Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>320-350</td>
<td>370-400</td>
<td>420-450</td>
<td>450-480</td>
<td>-</td>
</tr>
<tr>
<td>Central Italy</td>
<td>370-400</td>
<td>370-400</td>
<td>420-450</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
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<td>370-400</td>
<td>400-430</td>
<td>420-450</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*For the production of silage increase the number of seeds per square metre by 10%.*

### Features

#### Phenotype
- **Ear:** medium/white
- **Plant height:** 125-140 cm
- **Tillering:** good
- **Earing:** medium-late

#### Biotic and abiotic stresses
- **Cold:** resistant
- **Water stress:** medium resistance
- **Lodging:** good resistance
- **Oidium:** medium tolerance
- **Septoria:** tolerant

#### Quantitative and qualitative traits
- **1,000 seeds weight:** 40-46 g
- **Test weight:** 70-74
- **Proteins:** 13-15%
For the production of silage increase the number of seeds per square metre by 10%.

**Northern Italy**
- October: 370-400
- November: 400-430
- December: 420-450
- January: 440-470
- February: 460-490
- March: 460-490

**Central Italy**
- October: 390-420
- November: 420-450
- December: 440-470
- January: 460-490
- February: 480-510
- March: 480-510

**Southern Italy**
- October: 370-400
- November: 400-430
- December: 420-450
- January: 440-470
- February: 460-490
- March: 460-490

**RIGEL**

**SOWING DENSITY**
- Germinated seeds/m²

**Cycle > early**

**For the production of grains and silage**

**Alternative**

**PHENOTYPE**
- **Ear**: long
- **Plant height**: 115-120 cm
- **Tilering**: good
- **Earing**: early

**BIOTIC AND ABIOTIC STRESSES**
- **Cold**: resistant
- **Water stress**: resistant
- **Lodging**: high resistance
- **Oidium**: medium tolerance
- **Septoria**: medium tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- **1,000 seeds weight**: 42-45 g
- **Test weight**: 60-70
- **Proteins**: 13-15%
**Flavia**

**Cycle:** early

**Features**

### Phenotype
- Ears: medium
- Awn: absent
- Plant height: 90-95 cm
- Tillering: high
- Earing: early

### Biotic and Abiotic Stresses
- Cold: medium resistance
- Water stress: resistant
- Lodging: good resistance
- Oidium: medium tolerance
- Rusts: medium tolerance
- Septoria: medium tolerance

### Quantitative and Qualitative Traits
- 1.000 seeds weight: 30-33 g
- Test weight: 46-50
- Proteins: 14-15%
- Content in fats: 12%
- Yield at decortication: 81-82%

### Sowing Density

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
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<td>-</td>
<td>350-380</td>
<td>370-400</td>
<td>400-450</td>
<td>450-480</td>
<td>450-480</td>
</tr>
</tbody>
</table>

**White oat**

For the production of grains and fodder

Alternative

**Oat**

For the production of grains and fodder

Alternative
**FULVIA**

**CYCLE > early**

**Red oat**

For the production of grains and fodder

Alternative

---

### PHENOTYPE
- **Ears**: medium
- **Awn**: present
- **Plant height**: 85-90 cm
- **Tillering**: high
- **Earing**: early

### BIOTIC AND ABIOTIC STRESSES
- **Cold**: medium resistance
- **Water stress**: resistant
- **Lodging**: good resistance
- **Oidium**: medium tolerance
- **Rusts**: medium tolerance
- **Septoria**: medium tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS
- **1,000 seeds weight**: 32-35 g
- **Test weight**: 51
- **Proteins**: 14-15%
- **Content in fats**: 12%
- **Yield at decortication**: 79-80%

---

**SOWING DENSITY**

Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
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<td>420-470</td>
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<td>370-400</td>
<td>400-450</td>
<td>450-480</td>
<td>450-480</td>
</tr>
</tbody>
</table>
Interesting for the production of food for people who are intolerant to gluten and for the production of baby food.

**PHENOTYPE**
- **Ears**: medium
- **Awn**: absent or very weak
- **Plant height**: 80-85 cm
- **Tillering**: high
- **Earing**: medium-late

**BIOTIC AND ABIOTIC STRESSES**
- **Cold**: resistant
- **Water stress**: resistant
- **Lodging**: excellent resistance (big and flexible stem)
- **Rusts**: medium tolerance
- **Septoria**: medium tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- **1,000 seeds weight**: 20-25 g
- **Test weight**: high 58-63
- **Proteins**: 15-17%
- **Content in fats**: 8-10%
- **B-glucan content**: 4-5%

<table>
<thead>
<tr>
<th>SOWING DENSITY</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
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<td>450-480</td>
<td>450-480</td>
</tr>
</tbody>
</table>

For the production of silage increase the number of seeds per square metre by 10%.
**OAT**

**NIGRA**

**CYCLE** > medium

**PHENOTYPE**
- **Ears** medium
- **Awn** absent
- **Plant height** 90-95 cm
- **Tillering** good
- **Earing** medium

**BIOTIC AND ABIOTIC STRESSES**
- **Cold** medium resistance
- **Water stress** resistant
- **Lodging** good resistance
- **Oidium** medium tolerance
- **Rusts** medium tolerance
- **Septoria** medium tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- **1,000 seeds weight** 32-34 g
- **Test weight** 48-52
- **Proteins** 13-14%
- **Content in fats** 12%

**SOWING DENSITY** Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
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<td>370-400</td>
<td>400-450</td>
<td>450-480</td>
<td>450-480</td>
</tr>
</tbody>
</table>

**FEATURES**
- Black oat
- For the production of grains and fodder
- Alternative

**OAT**

**March**

**Black oat**

**For the production of grains and fodder**

**Alternative**
**BENEDETTO**

**CYCLE > medium**

**SPELT**

- Suitable for baking
- Alternative

---

### SOWING DENSITY

<table>
<thead>
<tr>
<th></th>
<th>October</th>
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<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>370-400</td>
<td>400-430</td>
<td>420-450</td>
<td>440-470</td>
<td>460-500</td>
<td>460-500</td>
</tr>
<tr>
<td>Central Italy</td>
<td>390-420</td>
<td>420-450</td>
<td>440-470</td>
<td>460-490</td>
<td>480-510</td>
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<td>400-430</td>
<td>420-450</td>
<td>440-470</td>
<td>460-500</td>
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</tbody>
</table>

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### PHENOTYPE

<table>
<thead>
<tr>
<th>Trait</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earing</td>
<td>medium-early</td>
</tr>
<tr>
<td>Plant height</td>
<td>90-110 cm</td>
</tr>
</tbody>
</table>

---

### BIOTIC AND ABIOTIC STRESSES

<table>
<thead>
<tr>
<th>Stress</th>
<th>Tolerance/Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold</td>
<td>resistant</td>
</tr>
<tr>
<td>Water stress</td>
<td>resistant</td>
</tr>
<tr>
<td>Lodging</td>
<td>good resistance</td>
</tr>
<tr>
<td>Oidium</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Leaf rust</td>
<td>good tolerance</td>
</tr>
<tr>
<td>Septoria</td>
<td>medium tolerance</td>
</tr>
</tbody>
</table>

---

### QUANTITATIVE AND QUALITATIVE TRAITS

<table>
<thead>
<tr>
<th>Trait</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteins</td>
<td>15-16%</td>
</tr>
</tbody>
</table>

---

**FEATURES**

- Suitable for baking
- Alternative
PADRE PIO
CYCLE > early

SPELT
Suitable for pasta
Alternative

PHENOTYPE
- Earing: early
- Plant height: 85-105 cm

BIOTIC AND ABIOTIC STRESSES
- Cold: resistant
- Water stress: resistant
- Lodging: high resistance
- Oidium: tolerant
- Leaf rust: medium tolerance
- Septoria: medium tolerance

QUANTITATIVE AND QUALITATIVE TRAITS
- Proteins: 13-14%

SOWING DENSITY
Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
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<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>370-400</td>
<td>400-430</td>
<td>420-450</td>
<td>440-470</td>
<td>460-500</td>
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<tr>
<td>Central Italy</td>
<td>390-420</td>
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<td>440-470</td>
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<td>460-500</td>
</tr>
</tbody>
</table>
LEGUMINOSE DA GRANELLA
MARAGIÀ

CYCLE > medium

Beige seed, medium wrinkled, large caliber
Medium tolerance to *Ascochyta rabeï*
Alternative

**PHENOTYPE**

- **Seed**: beige/medium wrinkled/large caliber
- **Flower**: white
- **Plant type**: erect
- **Plant height**: 60-65 cm
- **Habitus**: alternative
- **Cycle**: medium

**BIOTIC AND ABIOTIC STRESSES**

- **Cold**: good resistance
- **Water stress**: good resistance
- **Lodging**: excellent resistance
- **Dehiscence**: excellent resistance
- **Ascochyta**: excellent resistance

**QUANTITATIVE AND QUALITATIVE TRAITS**

- **1,000 seeds weight**: 380-450 g
- **Proteins**: 19-20%

**SOWING DENSITY**

Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
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<tbody>
<tr>
<td>Northern Italy</td>
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</tr>
</tbody>
</table>
**PASCIÀ**

**CYCLE** > medium

**Chick Pea**

- Fair seed, wrinkled, large caliber
- Medium tolerance to *Ascochyta rabei*
- Alternative

### PHENOTYPE
- **Seed**: fair/wrinkled/large caliber
- **Flower**: white
- **Plant type**: semi-erect
- **Plant height**: 60-65 cm
- **Habitus**: alternative
- **Cycle**: medium

### BIOTIC AND ABIOTIC STRESSES
- **Cold**: good tolerance
- **Water stress**: good resistance
- **Lodging**: excellent resistance
- **Dehiscence**: excellent resistance
- **Ascochyta**: medium tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS
- **1,000 seeds weight**: 400-500 g
- **Proteins**: 21-22%

### SOWING DENSITY

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
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</tbody>
</table>
**CHICK PEA**

**REALE**

**CYCLE > medium**

Fair seed, wrinkled, large caliber
Medium tolerance to *Ascochyta rabei*
Alternative

---

**PHENOTYPE**

- **Seed**: fair/wrinkled/large caliber
- **Flower**: white
- **Plant type**: erect
- **Plant height**: 60-65 cm
- **Habitus**: alternative
- **Cycle**: medium

**BIOTIC AND ABIOTIC STRESSES**

- **Cold**: good tolerance
- **Water stress**: good resistance
- **Lodging**: excellent resistance
- **Dehiscence**: excellent resistance
- **Ascochyta**: medium tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**

- **1,000 seeds weight**: 400-450 g
- **Proteins**: 20-21%

---

**SOWING DENSITY**

<table>
<thead>
<tr>
<th>Germinated seeds/m²</th>
<th>October</th>
<th>November</th>
<th>December</th>
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<tbody>
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<td>35-40</td>
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</tr>
</tbody>
</table>
**PHENOTYPE**
- **Seed**: beige/smooth/medium-small caliber
- **Flower**: white
- **Plant type**: erect
- **Plant height**: 75-80 cm
- **Habitus**: alternative
- **Cycle**: medium-early

**BIOTIC AND ABIOTIC STRESSES**
- **Cold**: good tolerance
- **Water stress**: excellent resistance
- **Lodging**: excellent resistance
- **Dehiscence**: excellent resistance
- **Ascochyta**: good resistance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- **1,000 seeds weight**: 280-300 g
- **Proteins**: 19-20%

**SOWING DENSITY**

<table>
<thead>
<tr>
<th></th>
<th>October</th>
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</tbody>
</table>
CHIARO DI TORRELAMA
CYCLE > medium

FIELD BEAN

White
Alternative
High productivity
Resistant to cold

SOWING DENSITY
Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
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<tbody>
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</tr>
</tbody>
</table>

For grass manure, increase the number of seeds per square metre by 50%.

FEATURES

PHENOTYPE
- Seed: medium/oval/light brown
- Flower: white/melanin patch present
- Plant type: erect
- Plant height: 100-115 cm
- Habitus: alternative
- Cycle: medium

BIOTIC AND ABIOTIC STRESSES
- Cold: excellent resistance (-7°C)
- Water stress: good resistance
- Lodging: excellent resistance
- Rust: good tolerance

QUANTITATIVE AND QUALITATIVE TRAITS
- 1,000 seeds weight: 350-450 g
- Proteins: 24-26%
**PHENOTYPE**

- **Seed**: medium-small/oval/light brown
- **Flower**: white/melanin patch present
- **Plant type**: erect
- **Plant height**: 100-105 cm
- **Habitus**: alternative
- **Cycle**: medium

**BIOTIC AND ABIOTIC STRESSES**

- **Cold**: excellent resistance
- **Water stress**: good resistance
- **Lodging**: excellent resistance
- **Rust**: good tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**

- **1,000 seeds weight**: 320-400 g
- **Proteins**: 25-27%

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**SOWING DENSITY**  
Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
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</tbody>
</table>
**ENRICO**

**CYCLE > medium**

- Black
- Alternative
- High productivity
- Resistant to cold

### SOWING DENSITY

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
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</tr>
</tbody>
</table>

For grass manure, increase the number of seeds per square metre by 50%.

### PHENOTYPE

- **Seed**: medium-small/oval/black
- **Flower**: white/melanin patch present
- **Plant type**: erect
- **Plant height**: 100-110 cm
- **Habitus**: alternative
- **Cycle**: medium

### BIOTIC AND ABIOTIC STRESSES

- **Cold**: good resistance
- **Water stress**: good resistance
- **Lodging**: excellent resistance
- **Rust**: good tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS

- **1,000 seeds weight**: 350-400 g
- **Proteins**: 25-27%

For grass manure, increase the number of seeds per square metre by 50%.
**RUMBO**

**FIELD BEAN**

**CYCLE > early**

- White
- Large caliber
- Alternative
- High productivity

<table>
<thead>
<tr>
<th>SOWING DENSITY</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
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</tr>
</tbody>
</table>

*For grass manure, increase the number of seeds per square metre by 50%.*

### PHENOTYPE
- **Seed**: medium-big/oval/light brown
- **Flower**: white/melanin patch present
- **Plant type**: erect
- **Plant height**: 95-105 cm
- **Habitus**: alternative
- **Cycle**: medium-early

### BIOTIC AND ABIOTIC STRESSES
- **Cold**: good resistance
- **Water stress**: good resistance
- **Lodging**: excellent resistance
- **Rust**: good tolerance

### QUANTITATIVE AND QUALITATIVE TRAITS
- **1,000 seeds weight**: 450-550 g
- **Proteins**: 25-27%
For grass manure, increase the number of seeds per square metre by 50%.

SCURO DI TORRE LAMA

FIELD BEAN

CYCLE > medium

- Black
- Alternative
- High productivity
- Resistant to cold

**SOWING DENSITY**
Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
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<tbody>
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<td>35-40</td>
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<td>40-45</td>
<td>40-45</td>
<td>45-50</td>
<td>45-50</td>
</tr>
</tbody>
</table>

**FEATURES**

- **PHENOTYPE**
  - Seed: medium-small/oval/black
  - Flower: white/melanin patch present
  - Plant type: erect
  - Plant height: 100-110 cm
  - Habitus: alternative
  - Cycle: medium

- **BIOTIC AND ABIOTIC STRESSES**
  - Cold: good resistance
  - Water stress: good resistance
  - Lodging: excellent resistance
  - Rust: good tolerance

- **QUANTITATIVE AND QUALITATIVE TRAITS**
  - 1,000 seeds weight: 300-400 g
  - Proteins: 24-26%
**ASTRONAUTE**

**PROTEIC PEA**

- Aphyllous
- Alternative
- Good protein content (>20%)

**SOWING DENSITY**

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
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<tbody>
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<td>80-90</td>
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<td>90-100</td>
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<tr>
<td>Central Italy</td>
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<tr>
<td>Southern Italy</td>
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<td>100-110</td>
<td>110-120</td>
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</tbody>
</table>

For grass manure, increase the number of seeds per square metre by 50%.

**FEATURES**

<table>
<thead>
<tr>
<th>PHENOTYPE</th>
<th></th>
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<tbody>
<tr>
<td>Seed</td>
<td>big/round/yellow</td>
</tr>
<tr>
<td>Flower</td>
<td>white</td>
</tr>
<tr>
<td>Plant type</td>
<td>erect</td>
</tr>
<tr>
<td>Plant</td>
<td>aphyllous</td>
</tr>
<tr>
<td>Plant height</td>
<td>70-80 cm</td>
</tr>
<tr>
<td>Habitus</td>
<td>alternative</td>
</tr>
<tr>
<td>Cycle</td>
<td>medium</td>
</tr>
</tbody>
</table>

**BIOTIC AND ABIOTIC STRESSES**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Cold</td>
<td>good resistance</td>
</tr>
<tr>
<td>Water stress</td>
<td>good resistance</td>
</tr>
<tr>
<td>Lodging</td>
<td>excellent resistance</td>
</tr>
<tr>
<td>F. oxy-sp (type 1)</td>
<td>resistant</td>
</tr>
<tr>
<td>Ascochyta (type C)</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Bymv 2</td>
<td>resistant</td>
</tr>
<tr>
<td>Ferric chlorosis</td>
<td>medium resistance</td>
</tr>
</tbody>
</table>

**QUANTITATIVE AND QUALITATIVE TRAITS**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1,000 seeds weight</td>
<td>240 g</td>
</tr>
<tr>
<td>Proteins</td>
<td>20-21%</td>
</tr>
</tbody>
</table>
AVIRON

CYCLE > medium-late

PROTEIC PEA

- Aphyllous
- Alternative
- Green grain
- Low content of trypsin inhibitors

PHENOTYPE

- Seed: medium-small/round/green
- Flower: white
- Plant type: erect
- Plant: aphyllous
- Plant height: 70-80 cm
- Habitus: alternative
- Cycle: medium-late

BIOTIC AND ABIOTIC STRESSES

- Cold: good resistance
- Water stress: good resistance
- Lodging: excellent resistance
- F. oxysporum (type 1): resistant
- Ascochyla (type C): medium resistance
- Bymv 2: resistant
- Ferric chlorosis: medium resistance

QUANTITATIVE AND QUALITATIVE TRAITS

- 1,000 seeds weight: 160-170 g
- Proteins: 18-19%

SOWING DENSITY

Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
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<th>December</th>
<th>January</th>
<th>February</th>
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<td>110-120</td>
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</table>
**MULTITALIA**

**CYCLE > early**

White seed, medium-small caliber  
Winter habitus  
Suitable soil: acid Ph (4,5-6,5)

**PHENOTYPE**
- Seed: white/medium-small caliber  
- Plant height: 94-98 cm  
- Insertion of the 1st pod: 40-42 cm  
- Habitus: winter  
- Cycle: early

**BIOTIC AND ABIOTIC STRESSES**
- Ph soil: acid (4,5-6,5)  
- Lodging: excellent resistance  
- Cold: medium resistance  
- Water stress: good resistance  
- Plant diseases: medium tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- 1,000 seeds weight: 360-400 g  
- Proteins: 42%  
- Lipids: 12-13%

**FEATURES**
- Germinated seeds/m²

<table>
<thead>
<tr>
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<td>40-45</td>
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</tr>
</tbody>
</table>
**WHITE LUPIN**

**Sweet:** absence of anti-nutritional factors

**White seed, small caliber**

**Winter habitus**

**Suitable soil:** acid Ph (4.5-6)

---

**FEATURES**

<table>
<thead>
<tr>
<th>PHENOTYPE</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Seed</strong></td>
<td>white/small caliber</td>
</tr>
<tr>
<td><strong>Plant height</strong></td>
<td>85-90 cm</td>
</tr>
<tr>
<td><strong>Insertion of the 1st pod</strong></td>
<td>35-37 cm</td>
</tr>
<tr>
<td><strong>Habitus</strong></td>
<td>winter</td>
</tr>
<tr>
<td><strong>Cycle</strong></td>
<td>medium</td>
</tr>
</tbody>
</table>

**BIOTIC AND ABIOTIC STRESSES**

| **Ph soil**       | acid (4.5-6) |
| **Lodging**       | excellent resistance |
| **Cold**          | good resistance |
| **Water stress**  | good resistance |
| **Plant diseases**| medium tolerance |

**QUANTITATIVE AND QUALITATIVE TRAITS**

| **1,000 seeds weight** | 300-340 g |
| **Proteins**           | 44% |
| **Lipids**             | 11-12% |

---

**SOWING DENSITY**

<table>
<thead>
<tr>
<th>Germinated seeds/m²</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Northern Italy</strong></td>
<td>30-35</td>
<td>35-40</td>
<td>35-40</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Central Italy</strong></td>
<td>30-35</td>
<td>35-40</td>
<td>35-40</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Southern Italy</strong></td>
<td>-</td>
<td>35-40</td>
<td>35-40</td>
<td>40-45</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
**POLO**

**CYCLE > medium**

- Low alkaloid content
- White seed, very small caliber
- Winter habitus
- Suitable soil: acid Ph (4,5-6)

<table>
<thead>
<tr>
<th>SOWING DENSITY</th>
<th>Germinated seeds/m²</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>30-35</td>
<td>35-40</td>
<td>35-40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Central Italy</td>
<td>30-35</td>
<td>35-40</td>
<td>35-40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>-</td>
<td>35-40</td>
<td>35-40</td>
<td>40-45</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**PHENOTYPE**
- **Seed**: white/very small caliber
- **Plant height**: 110-115 cm
- **Habitus**: winter
- **Cycle**: medium

**BIOTIC AND ABIOTIC STRESSES**
- **Ph soil**: acid (4,5-6)
- **Lodging**: excellent resistance
- **Cold**: good resistance
- **Water stress**: medium resistance
- **Plant diseases**: medium resistance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- **1,000 seeds weight**: 150-160 g
- **Proteins**: 40-42%
- **Lipids**: 13-14%
ELSA
CYCLE > medium-late

- Yellow cotyledons
- Big seed
- Marbled green colour seed

**Features**

<table>
<thead>
<tr>
<th>PHENOTYPE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>External seed colour</td>
<td>from green to marbled green</td>
</tr>
<tr>
<td>Internal seed colour</td>
<td>yellow</td>
</tr>
<tr>
<td>Seed size</td>
<td>big</td>
</tr>
<tr>
<td>Plant type</td>
<td>semi-erect</td>
</tr>
<tr>
<td>Plant height</td>
<td>45-48 cm</td>
</tr>
<tr>
<td>Seeds per pod</td>
<td>1</td>
</tr>
<tr>
<td>Cycle</td>
<td>medium-late</td>
</tr>
</tbody>
</table>

**Biotic and Abiotic Stresses**

- Cold | medium resistance |
- Water stress | medium resistance |
- Dehiscence | resistant |

**Quantitative and Qualitative Traits**

- 1,000 seeds weight | 40-45 g |
- Proteins | 24-26% |

**Sowing Density**

<table>
<thead>
<tr>
<th>Region</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>-</td>
<td>220-250</td>
<td>250-300</td>
<td>250-300</td>
</tr>
<tr>
<td>Central Italy</td>
<td>-</td>
<td>270-300</td>
<td>300-330</td>
<td>300-330</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>220-250</td>
<td>220-250</td>
<td>250-300</td>
<td>-</td>
</tr>
</tbody>
</table>
**GAIA**

**CYCLE > medium-early**

Yellow cotyledons
Small seed
Marbled grey-green colour seed

### FEATURES

<table>
<thead>
<tr>
<th>PHENOTYPE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External seed colour</strong></td>
<td>marbled grey-green</td>
</tr>
<tr>
<td><strong>Internal seed colour</strong></td>
<td>yellow</td>
</tr>
<tr>
<td><strong>Seed size</strong></td>
<td>medium-small</td>
</tr>
<tr>
<td><strong>Plant type</strong></td>
<td>semi-erect</td>
</tr>
<tr>
<td><strong>Plant height</strong></td>
<td>30-35 cm</td>
</tr>
<tr>
<td><strong>Seeds per pod</strong></td>
<td>1-2</td>
</tr>
<tr>
<td><strong>Cycle</strong></td>
<td>medium-early</td>
</tr>
</tbody>
</table>

**BIOTIC AND ABIOTIC STRESSES**

- Cold resistant
- Water stress resistant
- Dehiscence resistant

**QUANTITATIVE AND QUALITATIVE TRAITS**

- **1.000 seeds weight**: 20-25 g
- **Proteins**: 24-26%

### SOWING DENSITY

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>-</td>
<td>220-250</td>
<td>250-300</td>
<td>250-300</td>
</tr>
<tr>
<td>Central Italy</td>
<td>-</td>
<td>270-300</td>
<td>300-330</td>
<td>300-330</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>220-250</td>
<td>220-250</td>
<td>250-300</td>
<td>-</td>
</tr>
</tbody>
</table>
**ITACA**

**CYCLE** > medium-late

- Orange cotyledons
- Medium-big seed
- Brown colour seed

**FEATURES**

<table>
<thead>
<tr>
<th>PHENOTYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External seed colour</strong></td>
</tr>
<tr>
<td><strong>Internal seed colour</strong></td>
</tr>
<tr>
<td><strong>Seed size</strong></td>
</tr>
<tr>
<td><strong>Plant type</strong></td>
</tr>
<tr>
<td><strong>Plant height</strong></td>
</tr>
<tr>
<td><strong>Seeds per pod</strong></td>
</tr>
<tr>
<td><strong>Cycle</strong></td>
</tr>
</tbody>
</table>

**BIOTIC AND ABIOTIC STRESSES**

- **Cold** medium resistance
- **Water stress** medium resistance
- **Dehiscence** resistant

**QUANTITATIVE AND QUALITATIVE TRAITS**

- **1.000 seeds weight** 35-40 g
- **Proteins** 24-26%

**SOWING DENSITY**

<table>
<thead>
<tr>
<th>Germinated seeds/m²</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>-</td>
<td>220-250</td>
<td>250-300</td>
<td>250-300</td>
</tr>
<tr>
<td>Central Italy</td>
<td>-</td>
<td>270-300</td>
<td>300-330</td>
<td>300-330</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>220-250</td>
<td>220-250</td>
<td>250-300</td>
<td>-</td>
</tr>
</tbody>
</table>
**GAMMA**

**CYCLE**: medium

**Class of dormancy**: 6

**Use**: hay, dehydrated hay and flour

**Resistant to cold**

**Low saponin content**

---

**PHENOTYPE**

- **Class of dormancy**: 6
- **Plant type**: erect
- **Stem**: thin
- **Plant height**: 75-80 cm
- **Leaves**: elliptic
- **Flower**: purple/light purple
- **Relationship leaves/stem**: high
- **Spring vegetative resumption**: anticipated
- **Winter rest**: postponed
- **Cycle**: medium-early

**BIOTIC AND ABIOTIC STRESSES**

- **Cold**: resistant
- **Lodging**: excellent resistance
- **Rust**: medium tolerance
- **Fusarium**: medium tolerance
- **Botrytis**: medium tolerance
- **Cercospora**: medium tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**

- **Use**: Pastures, hay, dehydrated hay, flour
- **Forage production**: high

---

**ADVEISED QUANTITY OF SEED**

- **Fall sowing**: 40 Kg/ha
- **Spring sowing**: 50 Kg/ha
Class of dormancy: 6,5
Use: hay, dehydrated hay and flour
High speed of regrowth
High number of its stems

### FEATURES

<table>
<thead>
<tr>
<th>PHENOTYPE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Class of dormancy</td>
<td>6,5</td>
</tr>
<tr>
<td>Plant type</td>
<td>erect</td>
</tr>
<tr>
<td>Stem</td>
<td>thin</td>
</tr>
<tr>
<td>Plant height</td>
<td>70-75 cm</td>
</tr>
<tr>
<td>Leaves</td>
<td>elliptic</td>
</tr>
<tr>
<td>Flower</td>
<td>purple/light purple</td>
</tr>
<tr>
<td>Relationship leaves/stem</td>
<td>high</td>
</tr>
<tr>
<td>Spring vegetative resumption</td>
<td>anticipated</td>
</tr>
<tr>
<td>Winter rest</td>
<td>postponed</td>
</tr>
<tr>
<td>Cycle</td>
<td>medium-late</td>
</tr>
</tbody>
</table>

### BIOTIC AND ABIOTIC STRESSES

<table>
<thead>
<tr>
<th>Stress</th>
<th>Resistance/Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold</td>
<td>medium resistance</td>
</tr>
<tr>
<td>Lodging</td>
<td>excellent resistance</td>
</tr>
<tr>
<td>Rust</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Fusarium</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Botrytis</td>
<td>medium tolerance</td>
</tr>
<tr>
<td>Cercospora</td>
<td>medium tolerance</td>
</tr>
</tbody>
</table>

### QUANTITATIVE AND QUALITATIVE TRAITS

| Use          | Pastures, hay, dehydrated hay, flour |

### ADVISED QUANTITY OF SEED

- Fall sowing: 40 Kg/ha
- Spring sowing: 50 Kg/ha
GRANO MONOCOCO
HAMMURABI

CYCLE > medium

Low gluten index
Recommended for the production of highly digestible products
For the production of pasta, bread and beer

PHENOTYPE
- Ear: medium
- Kernels: nude
- Awn: present
- Plant height: 105-115 cm
- Tillering: medium-high
- Habitus: alternative

BIOTIC AND ABIOTIC STRESSES
- Cold: medium resistance
- Drought: medium resistance
- Lodging: high resistance
- Oidium: good tolerance
- Rusts: good tolerance
- Fusarium: medium tolerance
- Septoria: good tolerance

QUANTITATIVE AND QUALITATIVE TRAITS
- 1,000 seeds weight: 30-35 g
- Test weight: 75-78
- Proteins: 18-21%
- Hardness: extra soft
- W: 20-30
- Gluten index: 5-10

FEATURES

The density of sowing set out in the table above is indicative. For more detailed information visit www.agroservicespa.it

<table>
<thead>
<tr>
<th>SOWING DENSITY</th>
<th>Germinated seeds/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>November</td>
</tr>
<tr>
<td>Northern Italy</td>
<td>350-400</td>
</tr>
<tr>
<td>Central Italy</td>
<td>370-420</td>
</tr>
<tr>
<td>Southern Italy</td>
<td>350-400</td>
</tr>
</tbody>
</table>
NORBERTO
CYCLE > late

- Low gluten index (high digestibility)
- High rusticity and good tolerance to main diseases
- Suitable for food processing, especially bread, buns and biscuits

**PHENOTYPE**
- **Ear** medium-long
- **Kernels** covered
- **Awn** present
- **Plant height** 120-140 cm
- **Tillering** very high
- **Habitus** alternative

**BIOTIC AND ABIOTIC STRESSES**
- **Cold** resistant
- **Drought** resistant
- **Lodging** good resistance
- **Oidium** good tolerance
- **Rusts** good tolerance
- **Fusarium** medium tolerance
- **Septoria** good tolerance

**QUANTITATIVE AND QUALITATIVE TRAITS**
- **1.000 seeds weight** 25-30 g
- **Test weight** 40-47
- **Proteins** 18-19%
- **Hardness** extra soft
- **W** 50-60
- **Gluten index** 20-30

**SOWING DENSITY**
Germinated seeds/m²

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Northern Italy</strong></td>
<td>300-350</td>
<td>350-450</td>
<td>400-450</td>
<td>450-500</td>
<td>-</td>
</tr>
<tr>
<td><strong>Central Italy</strong></td>
<td>320-370</td>
<td>370-470</td>
<td>470-500</td>
<td>470-500</td>
<td>-</td>
</tr>
<tr>
<td><strong>Southern Italy</strong></td>
<td>300-350</td>
<td>350-450</td>
<td>450-500</td>
<td>450-500</td>
<td>-</td>
</tr>
</tbody>
</table>

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Thanks to Michele Pirani, of the Pirani Michele Company of the same name (Osimo / An), agro-mechanic, Edagriflore innovation category “contractor of the year” award, for photos and technical advice.

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