

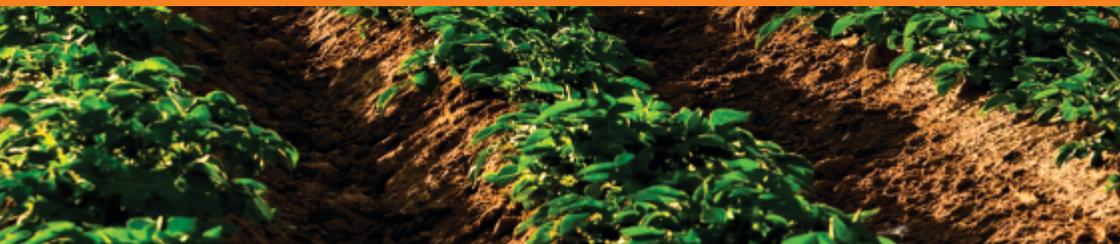


Handbook

conscientious producer



tradition and technology



What is a “conscientious” producer?

One who cares for his property, i.e. his land (his greatest asset), his seeds, his machinery, his installations and lastly, the crop that he will harvest; he reduces his costs at the same time he improves the quality of his produce and as a consequence, increases his profit.

But how does the world know who is a conscientious producer these days?

Conscientious producer = sustaining farmer

The word sustainability is a word often used today and there are many definitions. However, let's consider the origin of the word:

The term “**sustainable**” comes from the Latin **sustentare**, which means to: sustain, defend, favour, support, conserve, care for.

Accordingly, we can say that a **conscientious** producer is a **sustainable** producer – one who cares for, conserves, defends and sustains everything that is involved in his workplace.

Sustainable agriculture is: Ecologically correct, socially just and economically viable!

The producer often thinks that when he adopts sustainable agriculture his production costs must increase; however although some items may indeed be more expensive, the increase in productivity - and quality - as well as a higher accumulated value (attracting more customers at a higher sales value per customer) compensate, resulting in a significant increase in profit margins

WORKING TOWARDS SUSTAINABILITY ON YOUR PROPERTY = Reducing
Costs + Increasing Profit + Caring for your Health and the Health of
Society

Let's now see, with the aid of the “Basic Costs Pyramid” (Fig. 1), how good work practices applied to each of the elements will create better results for a conscientious and sustaining producer.

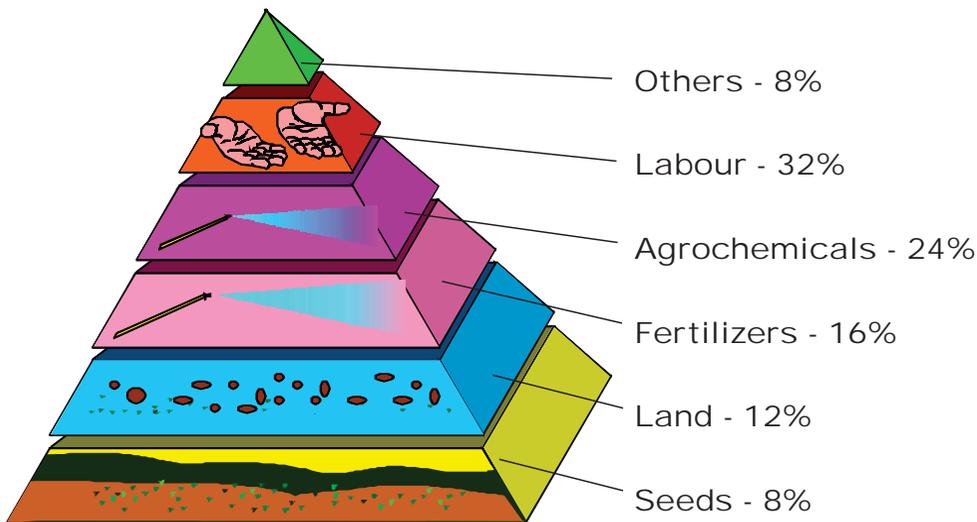


Fig 1. Basic Cost Pyramid of an Agricultural Property

The various levels of the pyramid:

Caring for the land and controlling all the environmental factors so that the soil is always fertile and ready to be cultivated is fundamental. Seeds, which are directly connected to the soil, to productivity and to the quality of the produce, are also important in this process and their selection must be made very carefully.

Land and seeds together represent around 20% of the cost of production

Preserve the earth – your greatest asset!

1 Preserve the soil by using good practices such as crop rotation, direct seeding and planting (“no tillage”), integrating agriculture - forestry and/or agriculture - animal husbandry-forestry;

2 Protect the environment on your property – native bush, water sources, streams and rivers. In order to keep the land productive we need quality water that should be used wisely, keeping in mind that the woodlands and principally the riparian forests are essential to protect water supplies and water tables.

3 Maintain the areas of native bush and forest that exist on your property and always, where possible, increase these areas. By respecting the environmental protection laws of your country you will contribute to conserve the surface and subterranean water sources as well as assist in climate control (temperature and humidity), reducing the incidence of droughts and other adverse effects of climate change.



Seeds – Provenance is the guarantee of quality

4 Use seeds with recognised brands from qualified companies, i.e. seeds with guaranteed provenance. By doing so you will be acquiring healthy, vigorous, genetically pure, quality seeds of superior physiology – significant parameters to achieve an adequate number of plants per hectare and high levels of productivity.



Fertilizers – Correct fertilization = Healthy plants!

5 Acquire good fertilizers of known brands and apply them at the right time. Consult a specialist to help to calculate the application rates and to define the best moment to apply. A good fertilizer can prevent diseases.

6 Keep in mind that there are a number of options to choose from: organic fertilizers (both vegetable and animal) green fertilizers, nitrogen fixing plants (legumes) and mineral, organomineral and bio-nutrient fertilizers. Check the availability of each in your region, programme your purchases before you plant and never compromise on quality.

Pesticides; herbicides; fungicides—correct application is the key

7 The control of pests, diseases and weeds represent a significant part (24%) of a farmer's cost of production, therefore only use products that have safe formulations and have been properly registered in your region. Products that have been registered show the commitment of the manufacturer to the grower, (as they are efficient and compliant) and to the environment and public health.

8 There are many choices of phytosanitary controls on the market: whether they are organically based, biological or agrochemical products. The choice is yours, but don't forget, use only quality products that are registered and have known brands

9 Whether you are an organic or conventional producer, the key to success when controlling weeds, fungus, bacteria or insect pests is the application of the right dosage at the right time (when the pest, disease or weed is most vulnerable), aiming the product only at the selected target (the entire plant, foliage, roots, soil, etc.,).

By knowing the correct dose and where to apply it, you can improve the control efficiency as this will reduce the onset of resistance which can be caused when using low dosages and avoid phytotoxic effects on your crops and an excess of agrochemical residues on your produce which will occur if the dosage is exceeded.

Apart from this, always remember: under-dosing or over-dosing can increase contamination of soil and water; because applying less than the correct dosage will require a greater number of applications to fix the problem and higher than recommended dosages will result in wasted volume that will go directly into the soil, water and adjacent areas.



Universal Dosimeter Valve

Equipment – Choose brands that are internationally recognised for quality

10 Equipment is on the top of the Production Cost Pyramid with various other items that all together represent the lowest percentage (8%) of total costs. But they are responsible for the efficient application of seeds, fertilizers and agrochemicals! And it is these three groups that represent 48% of the costs! Therefore, when buying equipment, whether a tractor, a sprayer or agricultural implement, always choose a brand that is known internationally for its quality. You will be buying an asset that will be part of your productive process for many years to come. Keep in mind that no one ever regrets buying quality!

Kapsack Power Mist Duster 18L Guarany



11 Give preference to manufacturers that develop respected technologies that meet international standards of quality, operator safety and environmental protection, such as ISO 9001 and 14000 and are certified by international organisations such as WHO (World Health Organisation) and ISO (International Standards Organisation) which submit equipment to demanding and rigorous testing for safety, quality and efficiency

12 In the specific case of Sprayers, the choice of a quality product is directly related to:

- The success of the pest control action, as products of certified quality meet the minimum requirements of performance;
- The reduction in operator and environmental contamination, as quality products use components made from highly durable “noble” materials.
- Cost reduction, since the superior durability results in less spent on maintenance, repairs and even agro-chemicals (less waste during application).

13 Always choose genuine products that carry a factory warranty that guarantees both quality and after-sales service.

Personal safety equipment – Insist in this basic item for your own well-being

14 Wear quality individual protective equipment (IPE) that is officially certified by authorities; Use and care for them according to the manufacturers' instructions. Don't forget:

•Individual protective equipment (IPE) is indispensable when working in agriculture, especially while spraying in order to protect the operator from dangerous and harmful chemicals. All substances have some degree of toxicity that can affect your health (depending on the dosage level and the individual's susceptibility) and since this toxicity cannot be altered, the correct use of IPE is essential to reduce the risk of contamination (ANDEF, 2010);

•IPE represents less than 1% of production costs



Use of equipment – Reading the manual, training, correct adjustment and calibration ensure good results!

15 After acquiring a machine to apply agrochemicals, the operator should carefully read the instructions to learn how to operate the machine correctly and obtain the best results. Similarly, in the case of contract workers, the employer should provide suitable training of the machine prior to use in the field.

16 A successful application can be measured in terms of the cost of the product per unit of area covered, the amount of physical effort required, and the ease of completing the job with the highest efficiency. This depends on the correct adjustment and calibration of the equipment, that is, you need to: a) check that all components are functioning correctly, b) set up the machine according to the application and c) whenever agrochemicals are used, take special care to control the pressure and adjust the flowrate (tips, nozzles and regulator valves) according to the target. Accordingly, selecting the spray tip is of great importance, since it is this component that determines the flowrate (L.min⁻¹), the shape of the spray (“standard” fan, “even” fan, full cone, hollow cone, etc) and the shape of the droplets.

Maintenance of the Equipment – Prevention Saves Time and Money; and Extends the Life of the Equipment

17 The Producer has everything to gain by carrying out regular maintenance. Here are some important tips:

- Know when to service and carry out the periodical preventive maintenance recommended by the manufacture in the instruction manual; in many cases simple cleaning (of the filters), lubrication or replacement of small, inexpensive components (e.g. seals) is the “secret” of low cost maintenance and correct functioning of the machine. Don't wait until a problem occurs, a part breaks or the machine stops working before taking action!
- Only use original factory spare parts. Unauthorised copies can at first appear to be the same as the original parts, however remember that “years of research and development were necessary to produce a quality machine. Each component and raw material underwent rigorous studies for function, dimension and durability.”
- Make a habit of recording each maintenance and programming the next: Keep the “maintenance record” in a notebook or, when practicable, written on the machine itself, clearly indicating the date, the service carried out, the part replaced (when applicable) as well as the dates of future servicing.

After Sales Service – the Confidence of knowing that Genuine Spare Parts are available and that Competent Technical Service is provided by Trained Personnel

18 Buy products only from manufacturers who have a good network of service centres, that use original parts and provide good service. Consult the local distributors to resolve questions, to provide advice on operating the equipment and conducting demonstrations and training sessions. Contact them whenever necessary!

Employees: The Adoption of Good Agricultural Practices and the Reduction of Application Costs is in the hands of the Workers in the Field

19 Now the only subject that we still need to consider is Labour. If contracted labour is used (whether temporary or permanent) for one or more of a wide variety of tasks such as seeding, fertilizing, spraying, harvesting, etc.... keep in mind that this item represents a large proportion of your production costs. Therefore, the training and orientation of workers regarding the good practices (from caring for the land, forests and wetlands, to the production process - planting through to harvest) outlined in this handbook is very important. By selecting the best brands, correctly using the products according to the manufacturer's instructions, conducting regular maintenance of the equipment and applying the agrochemicals correctly, the operators can carry out their work with the best productivity and quality possible.



20 Employees have an important part to play. An operator, when he is well trained, is aware of the importance of his role in the productive process and can be your great partner in the reduction of costs, the improvement of quality and in the final financial result



Dear producer, try to follow our suggestions on good practice every day to make your operation more productive and profitable.

These recommendations, if considered in isolation, may seem to be insignificant – but if they are added up, you will have a great reduction in costs and an excellent return.

As we showed, the producer's “pyramid” is interconnected and equipment is a fundamental part, as although it represents less than 8% of the costs, it can reduce costs in all the other parts of the pyramid. Paying attention to this will result in a continuous improvement throughout the entire production system that will then become sustainable.

To integrate man, machine and field is our mission and the responsibility of everyone!



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ver 01 - October 2012 - 10463.04.00



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