AgriCart

PRODUCTION GUIDELINES / SOUTH AFRICA

Leaf Crops



PLAN SUCCESSION. KEEP LEAVES CLEAN. COOL FAST.

Production guidance for lettuce, salad leaves, chicories, celery and true spinach, with crop-specific planning and careful fresh-market handling.

01 Crop & market planning >

02 Lettuce & salad leaves >

03 Chicories & celery >

04 Spinach & crop inputs >

05 Health & cold chain >

06 Planner & references >

DIGITAL EDITION / REVIEWED 17 SEPTEMBER 2026

AgriCart

CROP & MARKET PLANNING

Plan the product and rhythm

Scope: whole heads, bunches and harvested leaves. Ready-to-eat processing and microgreen production need separate validated systems.

Decision / crop	Practical guidance
Whole lettuce heads	Specify type, head mass, trim, colour, firmness and count per pack.
Baby leaves / mesclun	Agree exact species, leaf size, proportions, permitted stems and pack. Mesclun is a mixture, not one crop.
Chicories	Endive, escarole and radicchio differ in leaf form, bitterness and heading. Sell by the named type.
Celery	Agree whole plant or trimmed stalk, length, colour, pack and acceptable pithiness.
Spinach	Specify true spinach or Swiss chard explicitly; these are different crops with different harvest expectations.

Work backwards from orders

Build a weekly sowing and harvest plan around accepted mass, cooling capacity and labour. Trial a small area before repeating it. Record the actual time to the required grade under local conditions rather than relying on a universal maturity date.

Match cultivar to season

Most crops in this guide favour cool conditions, but heat, cold and day length affect them differently. Select local seasonal cultivars and trial replacements alongside the current standard. Retain seed lot and resistance information. [1-4]

Succession record: crop / cultivar / sowing date / nursery batch / block / expected picking week / order quantity / actual accepted yield.

AgriCart

LETTUCE & SALAD LEAVES

Choose the leaf and format

Lettuce is Lactuca sativa. Iceberg, cos or romaine, butterhead, oakleaf, lollo and batavia are market types, not interchangeable harvest specifications.

Establish an even stand

Use healthy transplants or accurately placed direct-sown seed for the chosen system. Prepare a fine but well-drained seedbed and maintain the seed zone without saturation. Heat can interfere with establishment; use the seed supplier's germination advice for the actual lot. [1, 2]

Decision / crop	Practical guidance
Heading and large leaf types	UMN gives about 25-30 cm between full-size plants as a garden reference. Commercial layouts also depend on bed width, cultivar, machinery and target head size. [1]
Mini heads	Closer spacing may suit small heads, but agree the required grade before raising density.
Baby-leaf production	Set sowing density and cutting height through local trials. Record leaf size, stem content, cleanliness and regrowth quality.
Mixed leaves	Grow species separately where maturity, irrigation or cooling differ. Blend by weighed proportions after sorting; verify each species is an accepted edible crop.

Harvest for the correct stage

For iceberg, a moderately compact head is preferable to a hard overmature one. For open lettuce and baby leaves, judge texture and the agreed size instead of using head firmness. [5, 6]

Quality review: bolting / bitterness / tipburn / uneven size / mechanical damage. Link rejects to the block and planting date before changing the next sowing.

AgriCart

CHICORIES

Separate endive and radicchio

Endive and escarole are Cichorium endivia; radicchio is a cultivated form of Cichorium intybus. Radicchio is not a lettuce type. [1]

Decision / crop	Practical guidance
Curly endive	Finely divided leaves; agree mature bunches, whole rosettes or young leaves with the buyer.
Escarole	Broader leaves and a different texture from curly endive. Keep the type separate in orders and seed records.
Radicchio	Select the required head shape, colour and local seasonal suitability. Evaluate heading and bitterness in a trial block.
Blanching	If the buyer requires blanched centres, agree a suitable method and trial it. Trapped moisture and concealed decay must be checked before packing.

Maintain steady growth

Choose a cool planting window and well-drained ground. Keep root-zone moisture consistent and allow working space for inspection. Heat and long days can push these crops towards flowering, with effects varying by type and cultivar. [1]

Use harvest samples

Cut representative plants across the block and assess the inside as well as outer leaves. Record colour, head density, bitterness, trim loss and any internal breakdown. Agree a realistic harvest window before committing the full crop to a delivery.

Trial record: named type and cultivar / local sowing date / heading percentage / accepted head mass / internal quality / buyer response.

AgriCart

CELERY

Keep stalk growth steady

Celery (Apium graveolens) needs its own nursery and field schedule. A fast baby-leaf programme is not a substitute for a celery plan.

Avoid cold-induced bolting

The 2026/27 commercial guide uses about 10-12 weeks for nursery production and identifies prolonged temperatures below roughly 13°C as a bolting risk. Do not harden plants by deliberately chilling them. These are reference conditions, not a fixed South African calendar. [3]

Decision / crop	Practical guidance
Establishment	Use uniform healthy seedlings and transplant when local conditions suit. Record nursery temperature history and inspect the growing point.
Moisture	Support even growth through the full root zone. Avoid alternating drought and excessive irrigation.
Blackheart	Inspect inner leaves for dark breakdown. Water stress and disrupted calcium supply to growing tissue can contribute; investigate irrigation and growth conditions. [3]
Cracking / russeting	Brown check may involve nutrient imbalance, including potassium and boron. Test before prescribing a correction. [3]

Harvest before quality declines

Assess stalk size and internal pithiness, not just plant height. Cool promptly after trimming and protect against moisture loss. Keep damaged petioles out of premium packs. [7]

Input discipline: set nutrition from soil and water analysis. Boron has a narrow margin between need and excess; no routine boron or magnesium spray is prescribed here.

TRUE SPINACH & SWISS CHARD

Name the crop correctly

True spinach is Spinacia oleracea. Swiss chard is Beta vulgaris and is often called spinach in South African trade; confirm which crop the buyer wants. [4, 9]

Decision / crop	Practical guidance
True spinach	Choose smooth, semi-savoy or savoy leaf and the intended baby-leaf, bunch or processing market.
Season and establishment	Select a locally suitable slow-bolting cultivar where needed. The commercial guide gives about 7-24°C soil temperature as a germination reference; conditions outside this range can affect establishment. [4]
Disease resistance	Confirm the named downy-mildew resistance races in the seed specification. Resistance does not replace scouting. [4]
Swiss chard	Plan for its larger leaves and petioles and the agreed cutting method. Do not substitute chard for true spinach in a labelled product. [9]

Harvest clean, tender leaves

Pick or cut at the agreed stage before bolting or yellowing reduces quality. Avoid soil contact and excessive petiole breakage. Check any regrowth crop for declining texture and disease rather than promising a fixed number of cuts. [4]

Keep lots separate

Record species, cultivar, block and harvest time. Separate yellow, damaged or decayed leaves before packing. A good-looking top layer must not hide warm or damaged leaves deeper in the container.

Crop identity check: botanical name / seed label / buyer description / pack label. This is especially important when the order simply says “spinach”.

AgriCart

WATER & NUTRITION

Manage the shallow root zone

Build a programme from soil and irrigation-water analysis, the actual crop and expected harvest period.

Check the crop, not only the timer

Use soil-moisture observations at representative positions, weather and measured delivery to adjust irrigation. Keep seedbeds moist during emergence and avoid extended waterlogging. Different species and ages should not automatically share the same runtime.

Decision / crop	Practical guidance
Uneven heads or leaves	Compare stand density, wetting pattern, soil variation and nursery batches.
Tipburn or internal injury	Investigate growth rate, root function, moisture fluctuations and climate before assuming the soil lacks calcium.
Fertiliser planning	Set phosphorus and potassium from testing and schedule nitrogen for the crop. Current commercial guides give the farm nutrient plan priority over blanket tables. [2-4]
Leaf contamination	Reduce soil splash and keep irrigation equipment from introducing contaminated water onto edible leaves.
Hydroponic systems	Use a separate water-analysis-based nutrient recipe and monitor solution pH, EC, temperature and hygiene. Field fertiliser rates do not translate directly.

Measure delivery consistently

One millimetre over one hectare equals 10,000 litres. Use this conversion to check volumes, then account for the wetted area and system efficiency. It does not determine how much water the crop needs.

Block review: crop stage / rainfall / irrigation / moisture readings / nutrient totals / leaf quality / action and follow-up date.

AgriCart

CROP HEALTH & HYGIENE

Inspect the leaves you sell

Scout growing points, leaf undersides, crowns and roots. Keep a dated map of symptoms and obtain diagnosis when causes are uncertain.

Decision / crop	Practical guidance
Yellow patches or leaf growth	Investigate downy mildew and other foliar diseases. Match resistance claims to the crop and pathogen.
Soft or collapsing plants	Check drainage, root condition and crown damage. Remove suspect material from the packing stream.
Leaf feeding / contamination	Inspect for aphids, caterpillars, leafminers and other local pests. Identify the pest and damage before selecting a control.
Harvest hygiene	Use clean knives and containers, handwashing facilities and a clear separation between field waste and packed produce.
Water and wash systems	Use water suitable for the intended food-contact operation and a documented sanitation process. Washing cannot rescue heavily contaminated or decayed leaves.

Fit crop protection to frequent harvest

Confirm current South African crop and target registration and follow label intervals. Mark treated blocks and communicate the earliest permitted harvest. Check buyer residue requirements and retain records. [10]

Validate a ready-to-eat process separately

If selling washed, cut or ready-to-eat leaves, establish a competent food-safety plan for water, sanitation, cold-chain control, packaging and shelf life. Do not infer safety from a clean appearance or from a general growing guide.

Traceability: seed or nursery lot → block → treatment record → harvest lot → pack → customer. Retain enough detail to identify affected deliveries.

AgriCart

HARVEST & COLD CHAIN

Remove field heat promptly

Keep harvested leaves shaded, handle gently and monitor product temperature. A cold room cannot instantly cool a dense warm load.

Decision / crop	Practical guidance
Iceberg lettuce	UC Davis recommends 0°C and more than 95% relative humidity. Avoid ethylene exposure, which can cause russet spotting. [5]
Romaine / loose-leaf	Cool close to 0°C with high humidity, without freezing. Tender leaves need protection from crushing and moisture loss. [6]
True spinach	Use 0°C and 95-100% relative humidity as reference conditions. It is highly perishable; storage potential is not a sales guarantee. [8]
Celery	Near 0°C and very high humidity preserve stalk quality. Avoid crushing and monitor decay in trimmed packs. [7]
Mixed packs	Confirm compatibility and validate the shortest-lived component. Keep chilling-sensitive basil out of a generic near-freezing herb-and-leaf system.

Manage moisture without free water

High humidity reduces wilting, but standing water and condensation can create handling problems. Check airflow, packaging and cooling method with the buyer. Do not use a generic gas-mixture recipe for modified-atmosphere packs.

Release by lot and condition

Record harvest time, cooling time, temperature, accepted mass, pack and customer. Inspect retained samples at the expected sale date. Use actual trial results to set the selling window rather than copying the longest published storage period.

Dispatch check: correct crop and grade / clean pack / temperature / quantity / lot code / delivery slot / customer acceptance.

AgriCart

FILLABLE CROP PLANNER

Your next planting

Save a copy before filling it in. Use a PDF reader that supports forms and keep the completed record with your field documents.

Farm / block / previous crop

Species / type / cultivar / seed lot

Sowing / transplant / planned harvest week

Bed layout / population / planted area

Buyer / leaf or head grade / pack

Soil and water results / nutrient plan

Next action / responsible person / due date

Ready-to-plant checks

- [ ] Species and grade confirmed
- [ ] Seed and nursery checked
- [ ] Harvest hygiene ready
- [ ] Succession plan prepared
- [ ] Irrigation measured
- [ ] Cooling and packs ready

AgriCart

REFERENCES & EDITION NOTES

Sources you can follow

Independent sources reviewed on 17 September 2026. Links are clickable. Older sources support established principles; overseas dates and product approvals are not transferred to South Africa.

01. UMN - Lettuce, Endive and Radicchio
Independent production and handling reference.

02. Commercial Recommendations - Lettuce (2026/27)
Independent production and handling reference.

03. Commercial Recommendations - Celery (2026/27)
Independent production and handling reference.

04. Commercial Recommendations - Spinach (2026/27)
Independent production and handling reference.

05. UC Davis - Crisphead Lettuce (February 2026)
Independent production and handling reference.

06. UC Davis - Romaine and Loose-leaf Lettuce
Independent production and handling reference.

07. UC Davis - Celery
Independent production and handling reference.

08. UC Davis - Spinach
Independent production and handling reference.

09. KZN Agriculture - Swiss Chard
Independent production and handling reference.

10. SA Department of Agriculture - Residue requirements
Check crop-specific approvals, records and destination requirements.

About this edition. Original AgriCart editorial synthesis for planning and education. Obtain farm-specific advice before setting inputs and crop-protection programmes. No yield or shelf-life guarantee is implied. Cover image is AI-generated illustration, not a documented farm or named cultivar. Source organisations do not endorse AgriCart.