

On-farm Hygiene

Introduction

Although easily overlooked, maintaining good on-farm hygiene can pay dividends in the long term and help to minimise the development and spread of weeds, pests and diseases.

This Fact File highlights some of the biggest on-farm hygiene risks and relevant interventions you can make to keep fields in their healthiest condition.

Key risks on-farm

1. Green bridging from cover crops

Cover crops must be thoroughly destroyed ahead of sugar beet cultivations and drilling.

Avoid using cover crops which could increase any specific problems you may find on your farm. One such example is growing stubble turnips on BCN infested farms. These can multiply your nematode pressure up to levels where even BCN tolerant sugar beet can suffer yield losses. Instead, opt for BCN resistant radish or mustards (ideally Class 1 types) to limit BCN multiplication.

More general problems, such as aphids and virus yellows, require a pragmatic approach as the distribution and abundance of this problem is strongly dependent on external factors such as weather, neighbouring habitats and cropping. Ensure a six week period with no living green cover to limit over winter survival of aphids.

Key Points

- Cover crops must be destroyed 6 weeks ahead of drilling.
- Ensure stewardship seed mixtures contain certified seed, which is free from weed seeds.
- Remain vigilant in managing & monitoring resistant pathogens on farm.
- Ask contractors to clean all equipment prior to coming on farm not just those undertaking sugar beet operations.
- Manage spoil appropriately and ideally return to the field from which it came.



2. Stewardship mixtures

These seed mixtures are a recent introduction and can bring new challenges in terms of weed management and pest build-up.

Consult with your agronomist and seed merchant to ensure the mixture you are using comes from a reputable source.

Make a plan to ensure that the species sown in the mixture will be able to be well controlled with your sugar beet herbicides. Recently, issues have been reported with barnyard grass (*Echinochloa crus-galli*) being found in cover crop and stewardship mixes which is difficult to control with herbicides.

Where perennial mixtures have been sown ahead of the beet crop, prepare to undertake additional cultivations or herbicide applications to ensure all of the plant material is dead before drilling your sugar beet. This will minimise survival and re-growth of well-established plants, such as clover, which can be more difficult to control.

3. Resistant weeds, pests and diseases

Vigilance is key to managing resistant pathogens on farm. Keep an eye out for any problems which you would have expected to be controlled with a pesticide and where control has not been achieved.

Weeds: If you have a known issue on-farm with resistant weed species (eg poppy resistant to ALS or black-grass resistant to ACCase inhibitors) plan your herbicide programme to use a range of chemistry to remove these. If they cannot be controlled chemically, seek to use mechanical methods (eg hoeing, cutting, pulling) to ensure they do not set seed in your beet crop. Spot spraying and/or weed wiping may also be an option. British Sugar maintain a list of contractors who can provide these services, contact your Agricultural Manager for more details.

Soil borne problems:

Rhizomania: All of the UK sugar beet varieties are partially resistant to Rhizomania which means they should not be impacted by standard strains. However, resistant strains, such as AYPR, do exist. These are more aggressive and require specialist varieties with additional resistance genes to protect them. If you find an outbreak of rhizomania in your sugar beet contact BBRO plant clinic.

BCN: Inspect crops when sugar beet are growing, especially if there are some plants wilting prematurely. Pull up roots and check for evidence of BCN females (white lemon-shaped cysts). If found, make a record of the field and approximate spread. Use a BCN tolerant variety of sugar beet next time you crop this field.

We suggest that any farm or block of land upon which BCN is found switches to a BCN tolerant variety to help manage population build-up.

Soil Pest Complex: Most soil dwelling insect pests can usually be adequately controlled through the use of Tefluthrin (Force ST) seed treatments. Further advice can be found in the Sporadic soil-based pests Fact file on rotational management.

Slugs: Slug damage can be widespread, especially on moisture retentive soils. Slug pellets can be used if damage is severe, but prevention of population buildup will provide better control.

Cover crops may increase the risk from soil pests including slugs & leather jackets, so it is important to factor this into any decision being made around their use and time of destruction.

4. Machinery

Movement of machinery around and between farms is a major hygiene risk.

Ask contractors to clean the dirtiest parts of equipment prior to coming onto your farm. Do this for all machinery, not just those undertaking sugar beet operations. Any machine which operates primarily in soil (eg stone picker, potato harvester, cultivator) can move sugar beet pathogens. Set up a dedicated washdown area for machinery and, when time allows, clean down and disinfect machinery after use.

Sugar beet harvesters represent a particular risk. They tend to work in your fields when soils are damp and weed, pest and disease pressures are greatest. Clear areas of greatest soil contact and those which accumulate soil the most as part of daily machine checks. Where practicable, block-harvest fields with particular hygiene concerns (eg BCN) to reduce their spread around your farm and then clean the harvester.

5. Clamping & Spoil

Spoil (soil, stones, tops etc) from cleaner-loaders requires correct management depending how, where and when the sugar beet were loaded.

Concrete pads: Where pads have been used, ensure to scrape up all spoil once the beet are loaded. If possible, use a spreader or trailer to return the spoil to the field it came from. If this is not possible (eg that the field has already been drilled) leave the spoil to one side on the pad. Regularly turn it using a loader or cover with a tarpaulin to prevent re-growth of sugar beet roots or the release of any pests in that soil. Return to the field it came from once possible (eg after harvest).

In-field clamps: These require some alternative considerations, usually dependent on the loader used. Where a self-propelled loader is deployed, make sure to thoroughly incorporate the spoil, ideally using a plough to bury it >20cm deep. This is especially vital where the clamp has been placed on a fallow or stubble field which is coming into sugar beet in the following year.

Traditional loader clamps will produce higher concentrations of spoil which can be collected up and returned to the field it came from and then incorporate.