

LUPIN BULLETIN

IN GENERAL...

Lupins have generally grown well this year. Many have looked good all season, so the next steps are desiccation (where required), and then getting them harvested.

Please refer to the previous bulletin on desiccation. If your crop is weedy and / or late, then it is often a good idea to finish the crop off with a desiccant. If the crop is clean and dying back nicely, then there is a good chance you will not need it.

MOISTURE TESTING

Protimeter

We have found the Protimeter to be good for measuring the moisture content of lupins.

- Grind the sample.
- Take moisture reading in the normal way using the ground wheat (ISO 712) cartridge for older meters, and in the newer machines, use the 0-100 scale.
- Convert the reading using the chart below using either the 0-100 scale or the ground wheat scale, according to whichever type of meter you have.

Lupins –moisture %		9.0	9.9	10.2	10.8	12.1	12.3	12.5	13.0	13.7	14.5	15.3	16.3	16.9	17.8	19.2	21.0
Scale 0-100	5	10	14	17	20	23	27	30	33	37	39	42	47	52	60	67	73
Wheat/Rye Ground	11.3	12.3	12.8	13.3	13.8	14.3	14.8	15.3	15.8	16.3	16.8	17.3	18.3	19.3	21.3	23.3	25.3

Sinar Meters

For use with Sinar Moisture Analyser models Agritec G3, Intec F6, Datatecs P25 & C6, also models AP, FP and FP Auto:-

- Switch unit on. Display should read "HI"
- Press key '0'. Display should read "00" or "0"
- Fill sample cell with plastic hopper
- Remove hopper
- Press key 'H₂O'. Note reading on display.
- Look down the 'CODE 0' column until reaching the figure nearest that on the display.
- Look at the 'Lupin moisture %' column and read off the corresponding moisture content.

For further details regarding the use of this chart or moisture measurement in general, please contact Sinar Technology – 01635 579940

Lupin moisture -%	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0
Code 0 (capacitance)	24.6	25.6	26.4	27.4	28.2	29.1	30.0	31.0	31.9	32.8	33.7	34.6	35.5	36.4	37.2	38.1	38.6	39.1	39.5

HARVEST

- Harvest can be done when the seed is 15 - 20% moisture content.
- This is likely to be 10 days after desiccation.
- Do not panic, pick your day, remember the pods do not shatter.
- Lupins leave very little trash behind ensuring a quick and easy turn round into a winter crop if required.
- For safe storage, drying to 15% or below is required.
- For crops destined for feed use, consider using a wet grain preservative such as propionic acid. It may be cheaper than drying, and will perhaps mean that rolling or milling is not necessary prior to feeding.
- Crimping is another valid approach which seems to work well for many growers.

COMBINE SETTINGS

As a general guide combine settings for white lupins are similar to beans and for blue or yellow lupins, similar to peas.

HANDLING, CLEANING, DRYING AND STORAGE

Lupins can be put through any of the normal handling systems, although seed growers should take note of the information in the seed growers section below. If a cleaner and/or drier are available, the lupins should be cleaned and dried to 15% moisture content **as soon as possible** after harvest. The safest range is 14-15%, as lupins stored above 16% will heat and produce a mouldy sample.

Cleaning

If available, consider cleaning the harvested seed if the samples contain dust and fines that are wetter than the seed. Dust, fines and green junk are often responsible for causing rapid heating their removal improves the airflow, drying and consequent storage of the produce.

Drying

Using Unheated Air

Cleaned and fairly dry (15-18%) lupins can be dried to under 15% with unheated air as long as the ambient Relative Humidity (RH) of the air is taken account of. The humidity has a huge bearing on the results of drying (You will notice from the table below that air at 0°C, with a RH of 60% will dry just as effectively to around 12.5% moisture, as air that is heated up to 25 °C and has a RH of 70%). Growers should use the table below to determine when they should run their fans, particularly when drying from 16% down to 15% or below, as dry air is particularly important in getting the last 1 or 2% out of them.

Lupin grain equilibrium moisture content in % relative to Temperature & Relative Humidity					
TEMP	50% RH	60% RH	70% RH	80% RH	90% RH
0 °C	11.5	12.5	14.0	16.1	19.0
5 °C	11.1	12.1	13.7	15.9	18.8
10 °C	10.8	11.8	13.5	15.7	18.6
15 °C	10.5	11.5	13.2	15.3	18.4
20 °C	10.1	11.1	13.0	15.0	18.2
25 °C	9.8	10.8	12.8	14.8	18.0

Using Heat

- Seed above 18% initial MC or where the ambient air RH exceeds 70% will often require heat. Batch driers and continuous flow driers do a good job on lupins, but lupins are a large seed so the method of using lower temperatures over a longer time is needed in order for the moisture to migrate from the centre of the seed, out to the surface where it can evaporate off. This may well mean drying them once to remove a maximum of 3%, allowing them to stabilise for 24 hours, and then putting them back over the drier.

Cooling after Drying

- The seed should be cooled after drying where possible.
- Check the temperature 24 hours after cooling and then monthly to ensure the produce is still cool.

SAMPLING

A sample bag and envelope is enclosed.

Where you are on a buy-back, or a seed contract, please send us a sample as soon as you have your crop dry and cleaned where appropriate. The best volume to post us is about $\frac{3}{4}$ of a pint.

- If you are on a home-use contract, but have some crop to sell, send us a sample and we will come back to you. There is usually some demand in the Autumn for farm-farm trade, so send us a sample and register with us if you want to sell lupins that were not originally on a buy-back contract.
- For those on compounding & seed contracts, please send us a sample as soon as you have your crop dry and cleaned where appropriate. The best volume to post us is about $\frac{3}{4}$ of a pint. **PLEASE fill in all the details on the sample bag - most people can't be bothered filling it in properly, but it is a problem for us if we don't have this information.**

We will send you a sample report to let you know what we think of your sample and what needs doing to it.

Finally

If you are unsure of your moisture testing, don't leave it to chance. Send us a small sample ($\frac{1}{4}$ pint) in a plastic bag with your name & phone number on it. We will test it and phone you with the result. (Please remember to include your details – we get no end of anonymous samples!!!!)

Always read the label carefully before using pesticides and only use as directed therein.

Use pesticides safely.

Soya UK Ltd recommend you seek the advice of your chemical advisor regarding your particular situation prior to applying pesticides.

The products indicated for use in this bulletin are for general guidance only and do not constitute a specific recommendation.

DM 09/09/19

SPECIAL NOTES FOR SEED GROWERS

We want to preserve BOTH the germination and the vigour of the lupin seed. This means careful handling and drying.

SUITABLE HANDLING SYSTEMS

All standard drying and handling systems can be successfully used with lupins. The real point is the way in which they are used. On-floor systems are probably the least damaging systems, whilst badly worn augers or pneumatic conveyors can create a lot of damage if allowed to do so. Whichever system is used, it is worth considering the potential for damage to the seed through impact / splitting / excessive heat etc.....

DRYING

For seed crops, please **do not exceed** a maximum drier temperature of 40°C and avoid removing more than 3% moisture at a time – otherwise the seed coat can crack, and compromise the germination. Hard drying also reduces seed vigour.

HANDLING OF HARVESTED SEED (*SEED GROWERS*)

Extra care is needed because lupin seed will lose vigour and germination if handled roughly. Try to break the fall of harvested seed by using chutes, elbows or other deflectors to reduce its impact onto hard surfaces.

**A sample bag and envelope is enclosed.
Please send us a sample as soon as you have your crop dry.**

(The best volume to post us is about 0.75 of a pint)