

# Advancement report

Season 2019-2020

## Dissemination of Interspecific ICARDA Varieties and Elites through Participatory Research



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## I. On station trials

During the season 2019-2020, DIIVA trials of durum wheat, barley and lentil were planted across stations at: Marchouch, Annoceur, Sidi El Aidi, Tessaout and Jemaa Shaim. Same set of durum wheat and lentil was also planted in Kfardan and Terbol in Lebanon and at Fanaye station in Senegal. For barley trial, 6 superior CWR-derived elites identified in Morocco were planted against two checks in Lebanon and Senegal river. Furthermore, DIIVA trials have been shipped to Ethiopia to be planted in April-May during the main cropping season.

The current season in Morocco is characterized by a very low annual precipitation (< 200 mm) which has caused severe initial and terminal moisture stress. However, DIIVA trials of durum wheat, barley and lentil are showing good performance in all Moroccan stations, except Jemaa Shaim station where no rainfall occurred for over 2 months. Lentil DIIVA trial was largely destroyed in Jemaa Shaim, while durum wheat and barley trials are less damaged (**Figure 1**). On the other hand, durum wheat, barley and lentil trials are growing well at Sidi El Aidi (**Figure 2**), Marchouch, Tessaout (**Figure 3**) and Annoceur (**Figure 4**) stations. Similarly, the DIIVA trials of durum wheat and barley are growing well at Terbol and Kfardan stations in Lebanon (**Figure 5** and **Figure 6**). The physiological stage of durum wheat, barley and lentil crops for the different stations in Morocco and Lebanon is presented in the **Table 1**.

In Senegal, the DIIVA trials of durum wheat, barley and lentil were already harvested at the end of March. During an ICARDA visit on the first week of March 2020, all DIIVA trials were showing a high adaptation to the extremely hot temperature of Senegal which can sometimes exceed 40°C. Barley and lentil have been growing for the first time and exhibited a good adjustment to the harsh climatic conditions of the Senegal river.

## II. On-farm DIIVA trials

During the season 2019-2020, the number of on-farm trials has been increased to 19 and new regions have been included such as Safi, Ben Guerrir, and Oued Zam. The lack of precipitation caused serious deterioration of DIIVA trials especially in Safi, Skhour Rhamna and Ben Guerrir. **Figure 7** displays the status of DIIVA on-farm trials at the different locations. Among the 14 new on-farms trials testing the CWR-derived lines of durum wheat, barley and lentil, only 4 on-farm trials are completely not damaged. The five farmers that tested their preferred DIIVA entries for the second season are reporting very good performances, except Midelt region where the conditions were extremely challenging and substantially all farmers will not be able to harvest this year. In the field of Mr. ██████████ at Marchouch, the two CWR-derived lines of durum wheat and barley selected last year demonstrate high success and performance compared to the checks.

The CWR elites of lentil also are showing good performances at the farmer field in Marchouch, which received only 190 mm of rain thus far.

In Tedla and Guigou, irrigation was used to minimize the impact of drought stress and sustain optimal crop yield. Durum wheat and barley trials are at grain filling stage, while CWR elites of lentil are at physiological maturity in Tedla. However, durum wheat, barley and lentil trials are still at the vegetative stage in Guigou due to the cold temperatures. **Table 2** shows some pictures describing the DIIVA trials of durum wheat, barley and lentil at the 19 on-farm trials in Morocco.

**Table 1.** Physiological stage of durum wheat, barley and lentil at the different stations of Morocco and Lebanon during the season 2019-2020.

Station/Crop	Cereals	Lentil
Marchouch	Grain filling - maturity	Podding - maturity
Tessaout	Flowering	Podding - maturity
Annoucer	Vegetative phase	Vegetative stage
Sidi El Aidi	Grain filling -maturity	Flowering - podding
Jemaa Shaim	Maturity	Damaged
Terbol & Kfardan	Vegetative phase	



**Figure 1.** Durum wheat trial at Jemaa Shaim station during the season 2019-2020.



**Figure 2.** Durum wheat (A) and barley (B) trials at Sidi El Aidi station. Photos received on the 2<sup>nd</sup> of April, 2020.



**Figure 3.** Durum wheat (A), lentil (B) and barley trials at Tessaout station. Photo of durum wheat and barley received on 3<sup>rd</sup> April 2020, while lentil photo received seven days prior.



**Figure 4.** Durum (A), lentil (B) and durum wheat (C) trials at Annoceur station. Photos received on the 4<sup>th</sup> of April 2020.



**Figure 5.** Durum wheat trial in Tel Amara. Photo received on the 1<sup>st</sup> of April 2020.



**Figure 6.** DIIVA trial of barley at Terbol (A) and Kfardan (B) in Lebanon during the season 2019-2020. Photos received on 8<sup>th</sup> April 2020.



**Figure 7.** Geographical distribution of DIIVA trials and damage frequency due to the severe drought across Morocco for the season 2019-2020. Blue icon- on stations trials; Yellow icon- new on farm trials severely affected by drought; Orange icon- new on farm trails moderately affected by drought; Green icon- new on farm trials less damaged; Red icon- repeating on farm trials.

**Table 2.** Location, Farmer name and pictures of DIIVA on farm trails conducted in the season 2019-2020 in Morocco. **A- durum wheat, B- barley and C- lentil.**

Location and farmer	Photos
Marchouch, [Redacted]	<p>A</p>  <p>B</p>  <p>C</p> 

Guigou, [redacted]



Midelt, [REDACTED]

A



B



C



Ait Bouhou, [REDACTED]



Tedla, [redacted]



Tessaout,





Tedla,

██████████



Sidi Ismail

(El Jadida), ██████████

██████████



Sidi Ismail, [REDACTED]	Not possible because of lockdown	
El Gara (next to Berrchid), [REDACTED]	Not possible because of lockdown	
Echammaia (Safi region), [REDACTED] [REDACTED]		
		



Echammaia  
(Safi region), [REDACTED]  
[REDACTED]

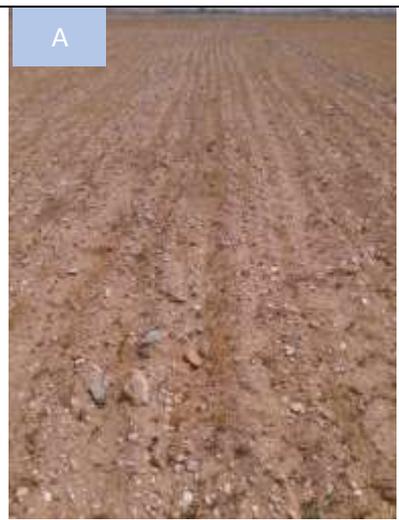


Ben Guerrir, [REDACTED]  
[REDACTED]





Ben Guerrir, [redacted]  
[redacted]



Skhor Rhamna, [redacted]  
[redacted]

Not possible because of lockdown

Oued Zam, [redacted]  
[redacted]





	<p>C</p> 
Oued Zam, [REDACTED]	Not received
Had Bkhati (Safi region), [REDACTED]	<p>A</p>  <p>B</p>  <p>C</p> 

Jemaa Shaim

