



Pronósticos del ITH: [jueves 07 a lunes 11 de marzo de 2024](#)

Monitoreo del ITH: [miércoles 28 febrero a martes 05 de marzo de 2024](#)

*Campaña estival N°12
Año 2024– Número 15
Miércoles 06/03/2024*

Las condiciones climáticas estivales en las diferentes cuencas lecheras pampeanas, y en particular en la central, se alejan en gran medida de la zona de confort térmico del rodeo bovino y afectan su eficiencia productiva y reproductiva.

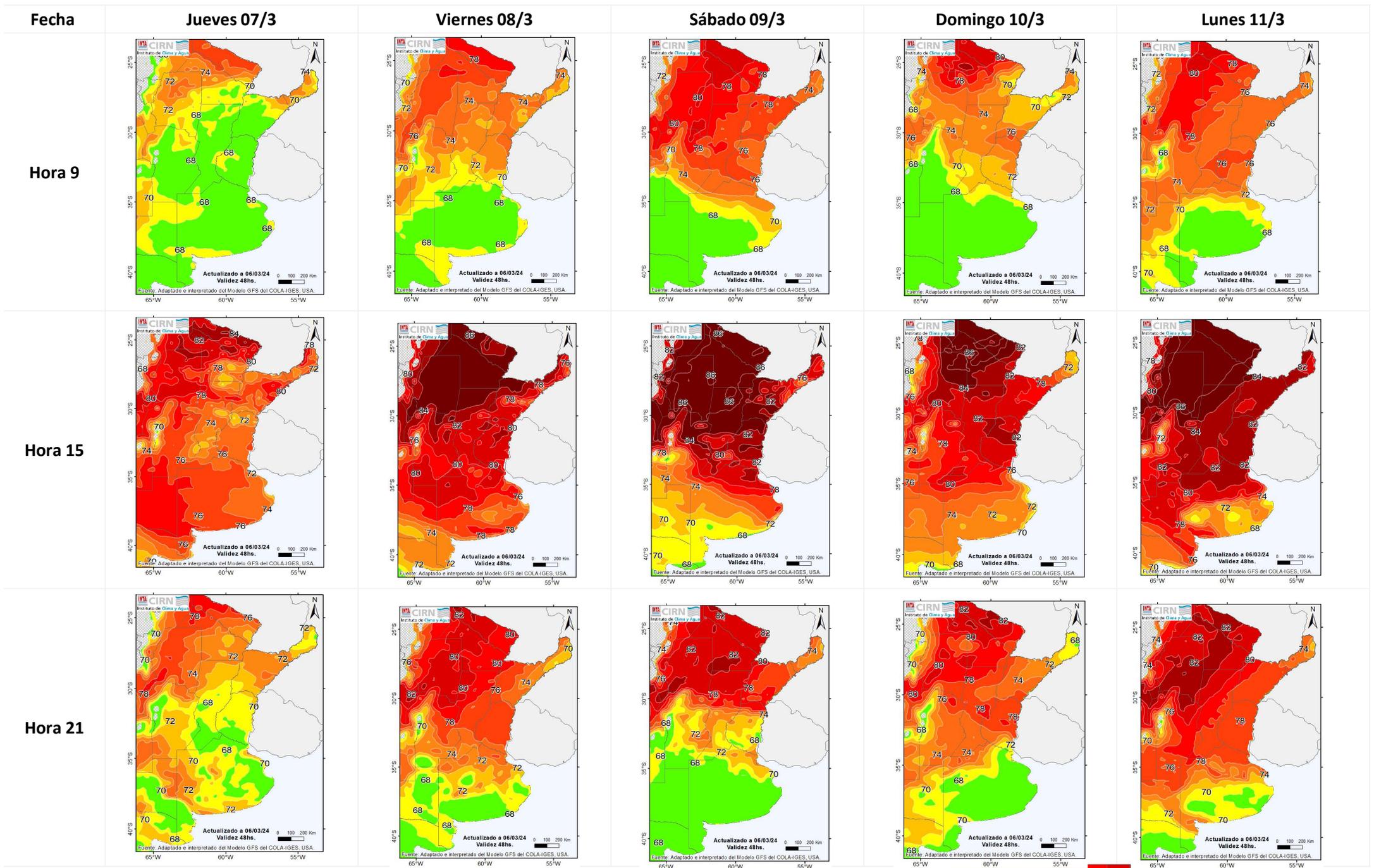
Este boletín contiene información sobre el índice de temperatura y humedad (ITH) para ayudarlo a manejar el estrés en la presente campaña estival 2023 – 2024.

ULTIMO INFORME

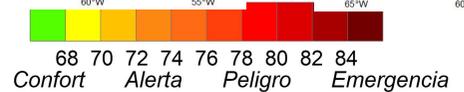
Pronóstico del ITH del 07 al 11 de marzo de 2024

En el norte del país, durante los próximos días se prevé paulatino ascenso de las temperaturas con ambiente caluroso y húmedo para el fin de semana. Habría valores de ITH elevados para las 15 hs en estado de “Peligro” y para las 9hs podrían aún persistir el estado de “Emergencia”. Hacia el lunes 11 se intensificaría y extendería la masa de aire calurosa.

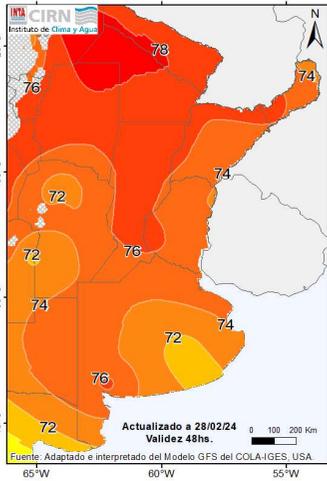
En la porción central, hasta el domingo 10 se podrían registrar condiciones de “Confort” durante las horas de descanso, pero aún podría persistir durante horas diurna valores de ITH en estado de “Alerta” y “Peligro”.



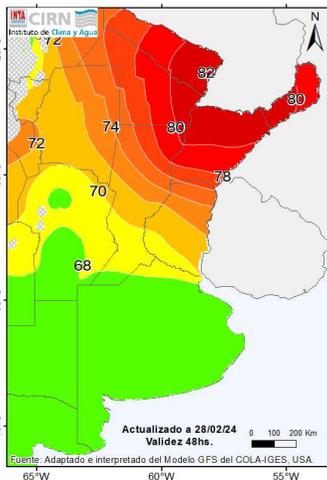
Fuente: Pronóstico elaborado en el Instituto de Clima y Agua, basado en la interpretación del modelo GFS. El pronóstico local a 48hs con datos del modelo WRF-SMN se actualiza 2 veces por día en la página <https://siga.inta.gob.ar/#/ith>



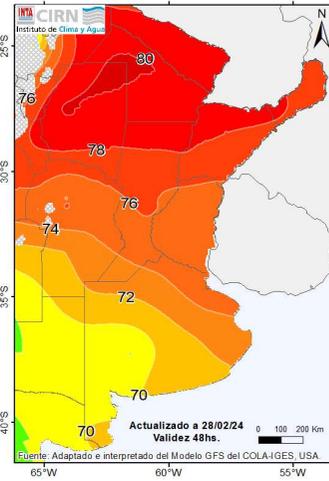
Miércoles 28/2



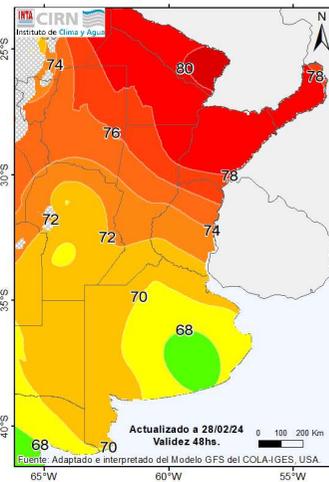
Domingo 03/3



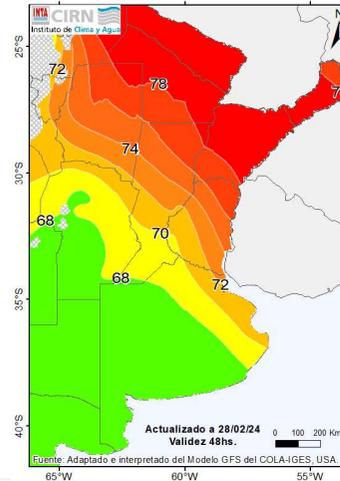
Jueves 29/2



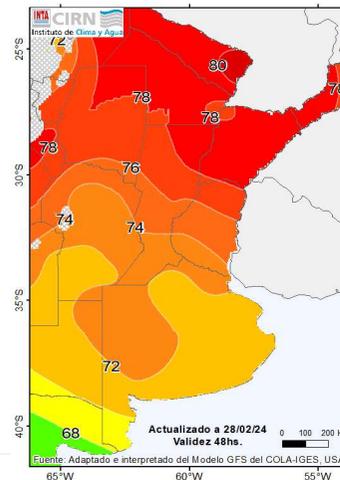
Lunes 04/3



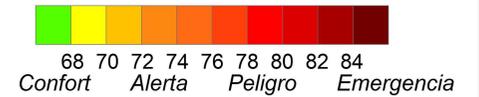
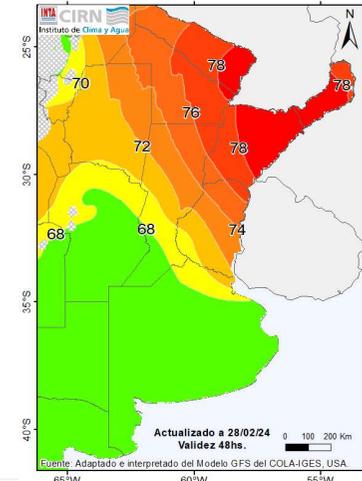
Viernes 01/3



Martes 05/3

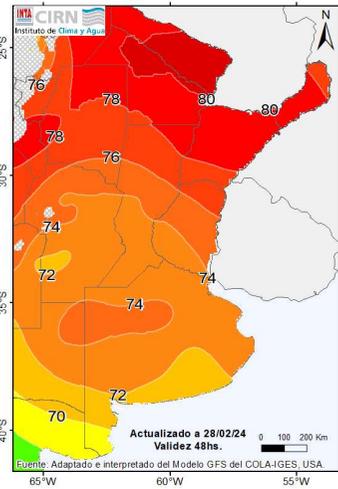


Sábado 02/3

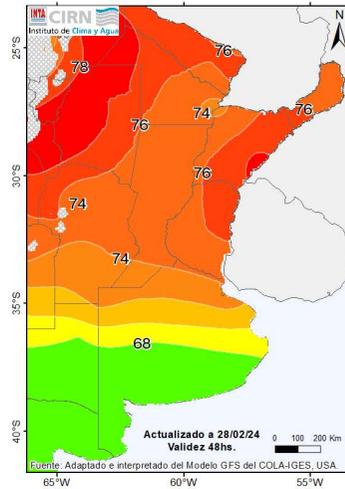


Fuente: INTA a partir de datos proporcionados por el Servicio Meteorológico Nacional

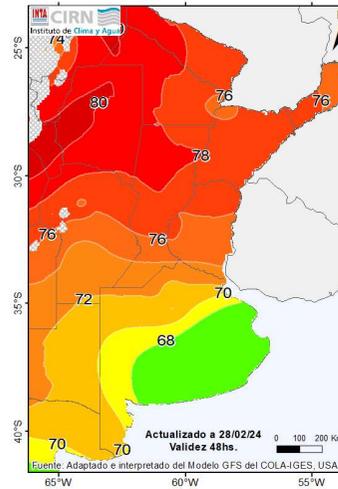
Miércoles 28/2



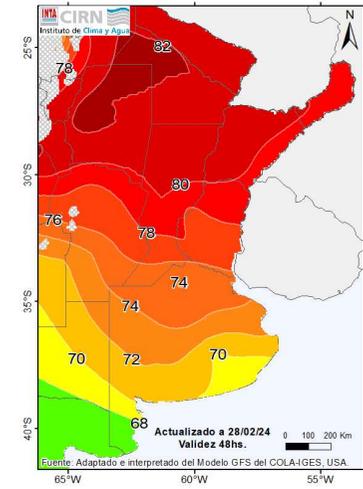
Jueves 29/2



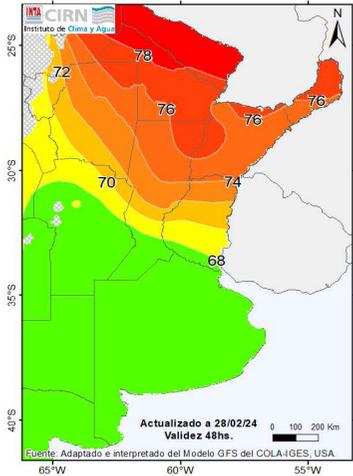
Viernes 01/3



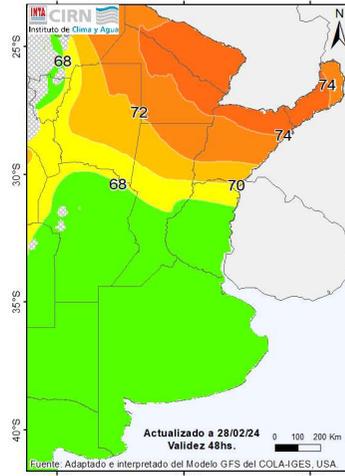
Sábado 02/3



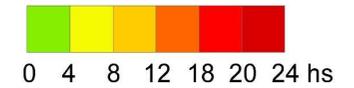
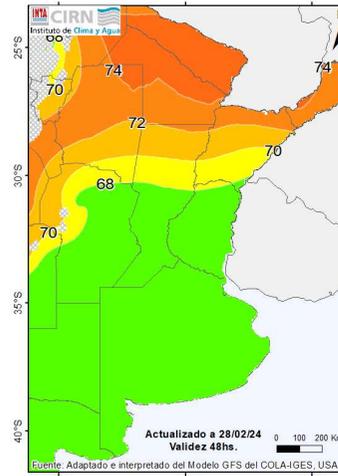
Domingo 03/3



Lunes 04/3



Martes 05/3

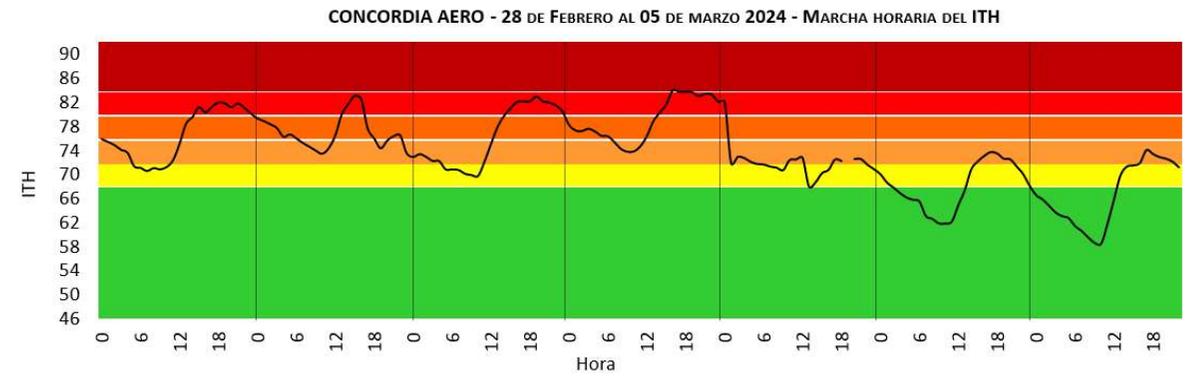
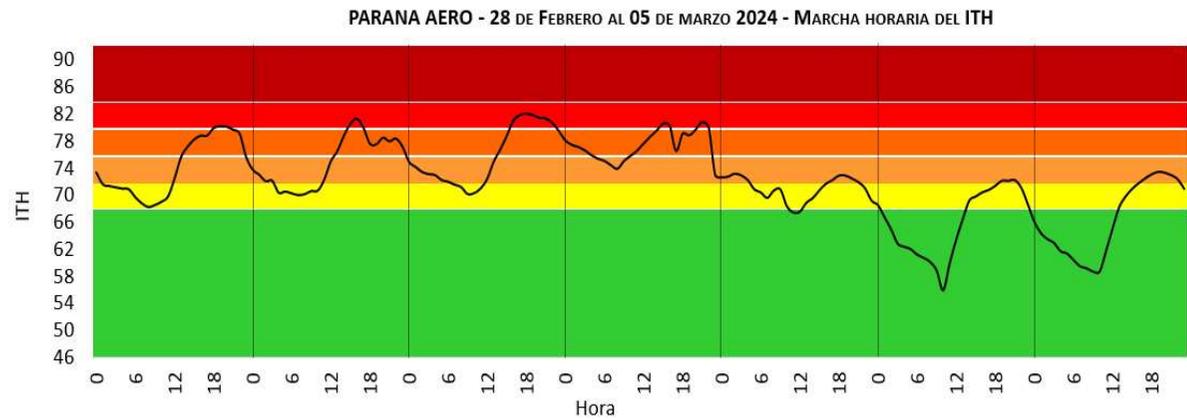


Fuente: INTA a partir de datos proporcionados por el Servicio Meteorológico Nacional

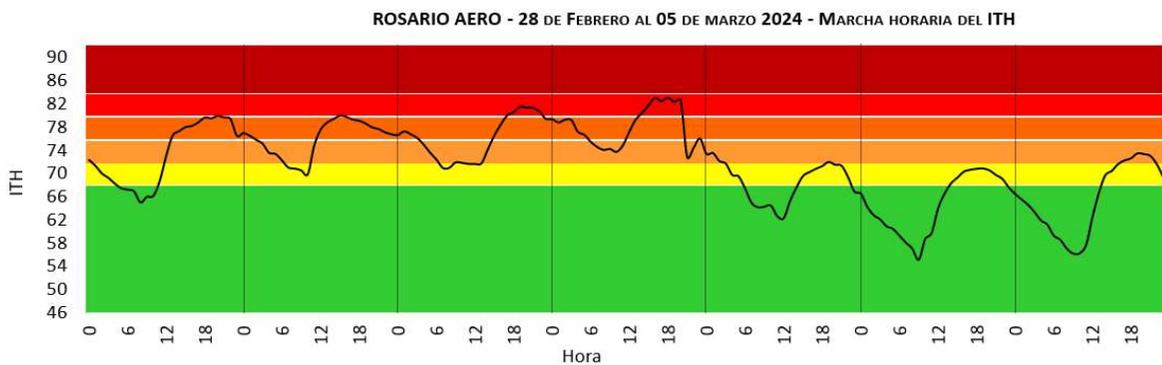
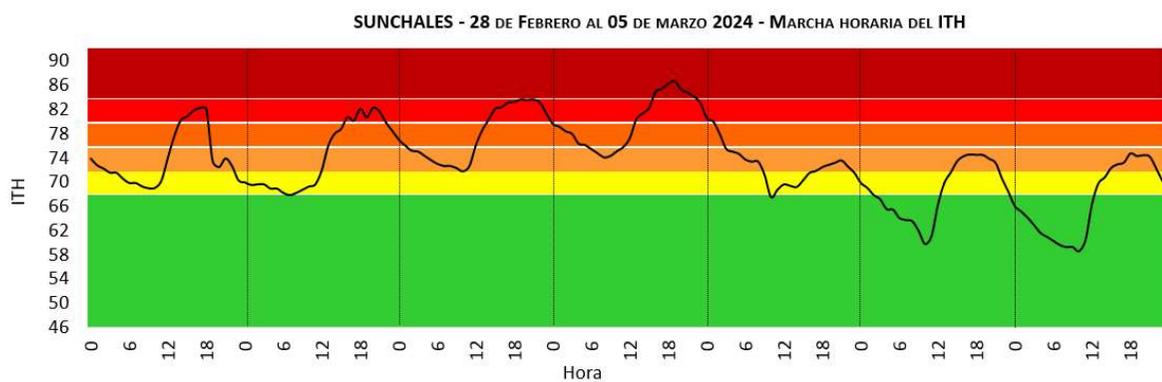
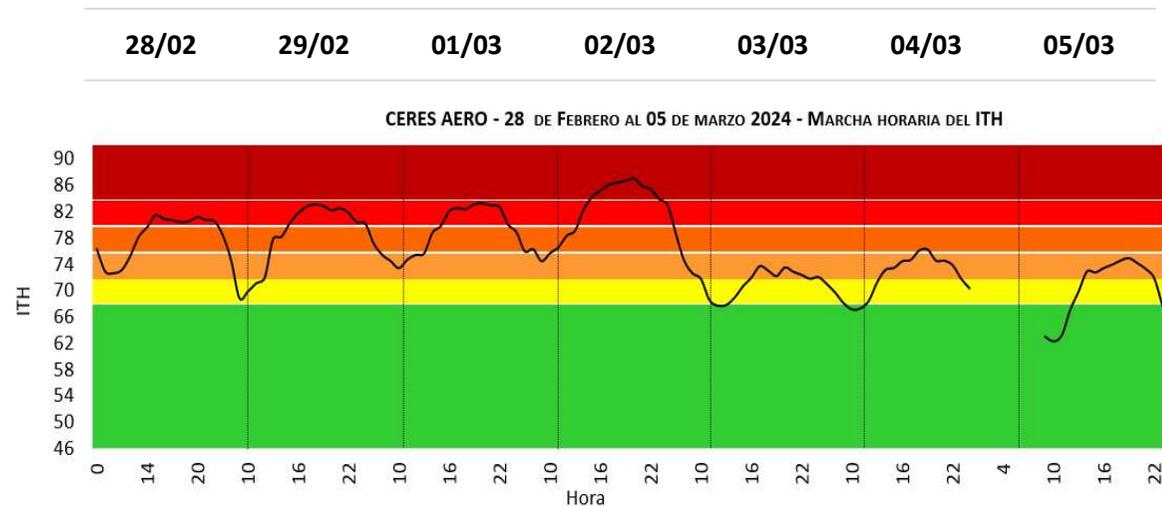
| ENTRE RÍOS | Fecha | ITH - Media diaria | ITH - Max diario | Horas con ITH >= 72 |
|----------------------------|--------|--------------------|------------------|---------------------|
| Paraná SMN 87374 | 28 feb | 74,18 | 80,26 | 13 |
| | 29 feb | 74,86 | 81,38 | 17 |
| | 01 mar | 75,88 | 82,14 | 19 |
| | 02 mar | 77,39 | 80,89 | 24 |
| | 03 mar | 71,01 | 73,24 | 9 |
| | 04 mar | 65,96 | 72,28 | 3 |
| | 05 mar | 66,41 | 73,50 | 6 |

| | | | | |
|-------------------------------|--------|-------|-------|----|
| Concordia SMN 87395 | 28 feb | 76,65 | 82,10 | 18 |
| | 29 feb | 77,17 | 83,23 | 24 |
| | 01 mar | 76,27 | 83,13 | 18 |
| | 02 mar | 79,16 | 84,15 | 24 |
| | 03 mar | 72,13 | 82,19 | 11 |
| | 04 mar | 68,16 | 73,86 | 6 |
| | 05 mar | 66,96 | 74,20 | 6 |

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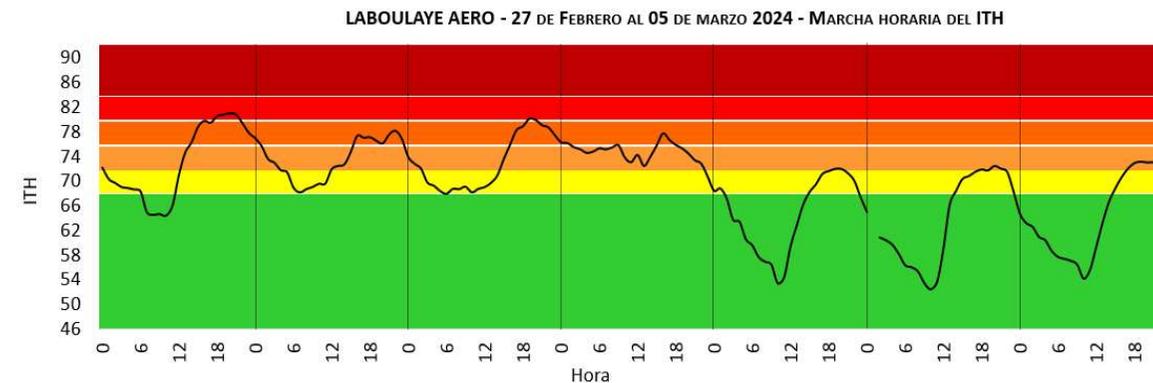
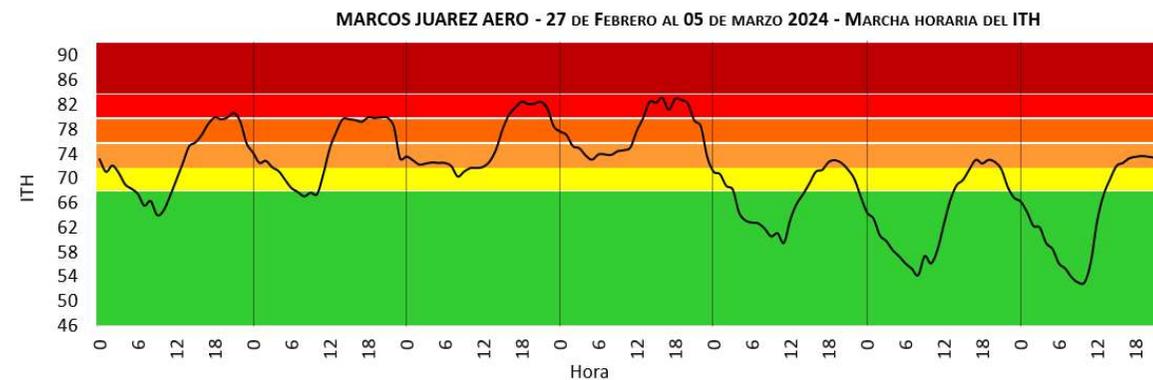


| SANTA FE | Fecha | ITH - Media diaria | ITH - Max diario | Horas con ITH >= 72 | |
|-------------------------------|-------------------|--------------------|------------------|---------------------|-----|
| Ceres SMN 87257 | 28 feb | 78,42 | 81,51 | --- | |
| | 29 feb | 77,27 | 83,18 | --- | |
| | 01 mar | 79,14 | 83,32 | --- | |
| | 02 mar | 81,57 | 87,09 | --- | |
| | ITH-Media 9-15-21 | 03 mar | 72,13 | 83,08 | --- |
| | 04 mar | 72,10 | 76,32 | --- | |
| | 05 mar | 69,77 | 75,00 | --- | |
| Sunchales SMN 87356 | 28 feb | 73,84 | 76,15 | 14 | |
| | 29 feb | 74,17 | 80,77 | 12 | |
| | 01 mar | 77,85 | 83,04 | 23 | |
| | 02 mar | 79,99 | 85,10 | 24 | |
| | 03 mar | 72,94 | 72,48 | 14 | |
| | 04 mar | 68,53 | 73,00 | 7 | |
| Rosario SMN 87480 | 28 feb | 73,17 | 79,95 | 13 | |
| | 29 feb | 75,98 | 79,99 | 20 | |
| | 01 mar | 75,98 | 81,52 | 17 | |
| | 02 mar | 78,08 | 83,11 | 24 | |
| | 03 mar | 68,62 | 73,59 | 4 | |
| | 04 mar | 64,72 | 70,90 | 0 | |
| 05 mar | 65,63 | 73,50 | 5 | | |



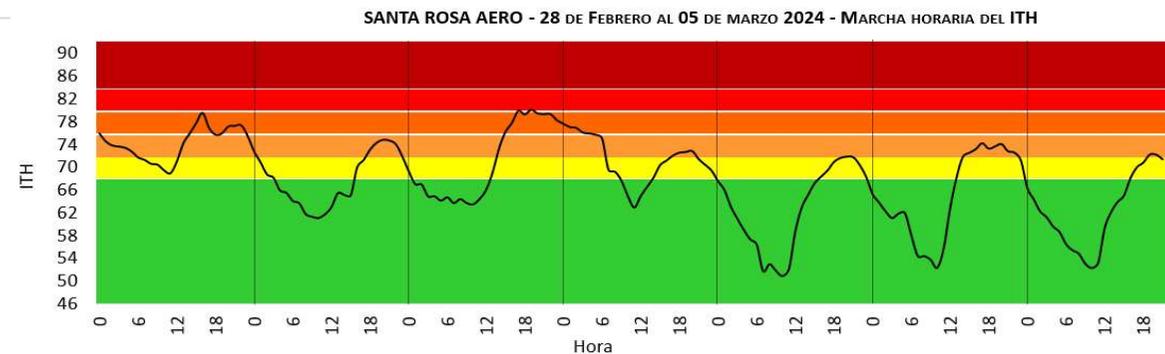
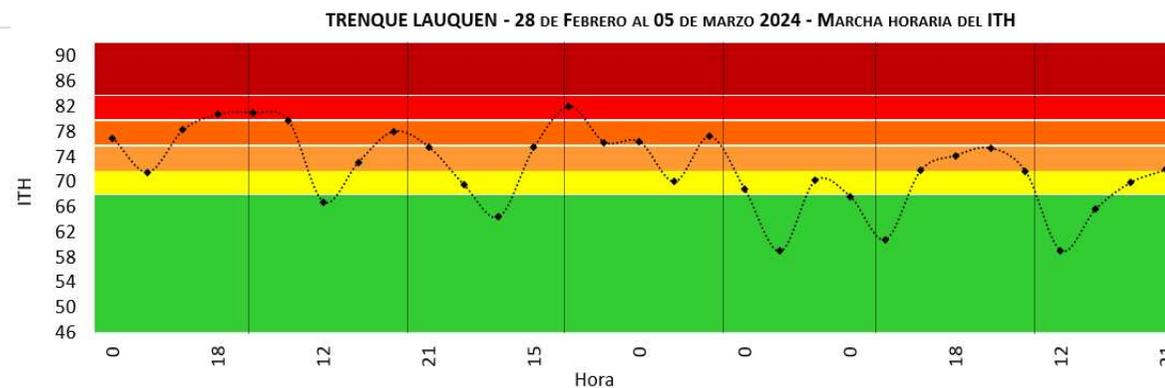
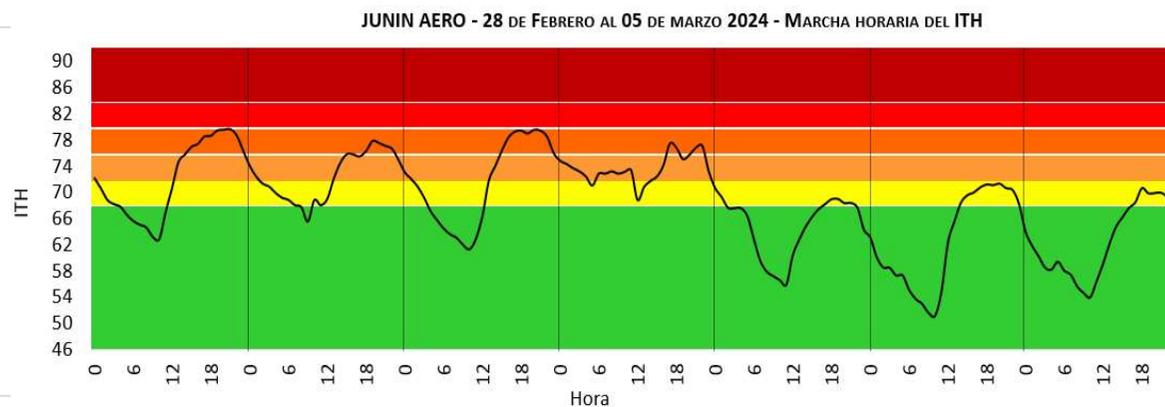
| CORDOBA | Fecha | ITH - Media diaria | ITH - Max diario | Horas con ITH >= 72 |
|-----------------------------------|--------|--------------------|------------------|---------------------|
| Córdoba SMN 87344 | 28 feb | 73,08 | 79,28 | 12 |
| | 29 feb | 73,68 | 78,49 | 19 |
| | 01 mar | 75,37 | 81,79 | 20 |
| | 02 mar | 75,83 | 82,91 | 22 |
| | 03 mar | 66,91 | 71,98 | 0 |
| | 04 mar | 65,13 | 71,31 | 0 |
| | 05 mar | 66,61 | 72,12 | 2 |
| Marcos Juárez SMN 87467 | 28 feb | 72,78 | 80,78 | 13 |
| | 29 feb | 74,42 | 80,06 | 15 |
| | 01 mar | 75,70 | 82,64 | 20 |
| | 02 mar | 77,76 | 83,24 | 24 |
| | 03 mar | 67,17 | 73,08 | 3 |
| | 04 mar | 64,21 | 73,14 | 4 |
| | 05 mar | 64,80 | 73,75 | 8 |
| Laboulaye SMN 87534 | 28 feb | 73,07 | 81,08 | 12 |
| | 29 feb | 73,62 | 78,24 | 16 |
| | 01 mar | 72,97 | 80,18 | 12 |
| | 02 mar | 74,85 | 77,82 | 23 |
| | 03 mar | 64,75 | 72,06 | 2 |
| | 04 mar | 63,80 | 72,54 | 2 |
| | 05 mar | 64,42 | 73,23 | 6 |

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| BS AS (N y O) y LA PAMPA | Fecha | ITH - Media diaria | ITH - Max diario | Horas con ITH >= 72 |
|--|--------|--------------------|------------------|---------------------|
| Junín SMN 87548 | 28 feb | 72,07 | 79,67 | 12 |
| | 29 feb | 72,45 | 77,87 | 13 |
| | 01 mar | 71,43 | 79,59 | 12 |
| | 02 mar | 73,70 | 77,49 | 20 |
| | 03 mar | 64,85 | 70,69 | 0 |
| | 04 mar | 62,69 | 71,36 | 0 |
| | 05 mar | 62,60 | 70,67 | 0 |
| Trenque Lauquen SMN 87540 3 obs/día | 28 feb | 79,66 | 81,03 | --- |
| | 29 feb | 74,37 | 78,06 | --- |
| | 01 mar | 75,94 | 81,99 | --- |
| | 02 mar | 72,05 | 77,28 | --- |
| | 03 mar | 65,62 | 70,21 | --- |
| | 04 mar | 73,61 | 75,41 | --- |
| Santa Rosa SMN 87623 | 28 feb | 74,29 | 79,67 | 17 |
| | 29 feb | 67,92 | 74,91 | 6 |
| | 01 mar | 70,89 | 80,20 | 10 |
| | 02 mar | 71,39 | 77,74 | 11 |
| | 03 mar | 62,82 | 71,94 | 0 |
| | 04 mar | 65,26 | 74,32 | 8 |
| | 05 mar | 62,73 | 72,30 | 2 |

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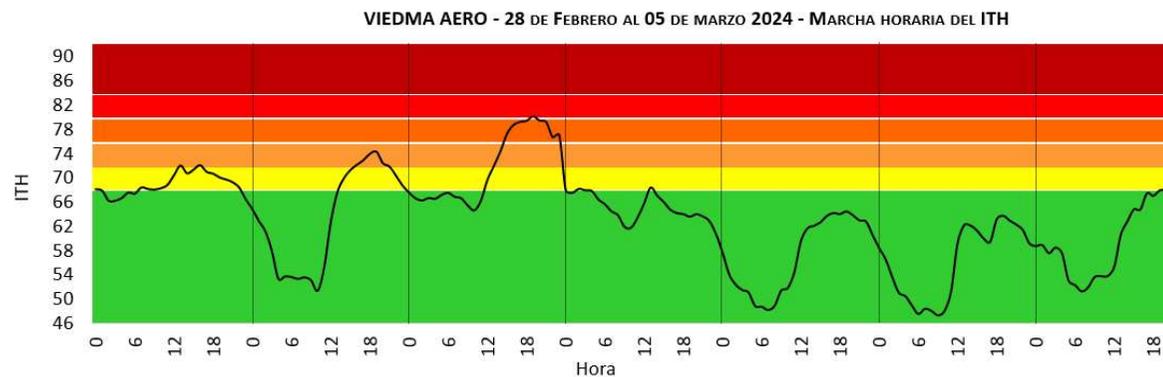
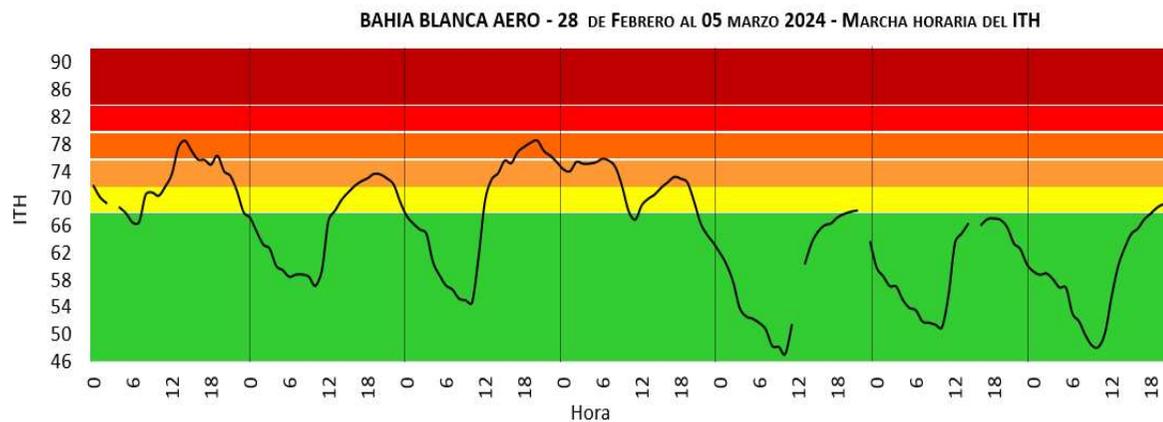
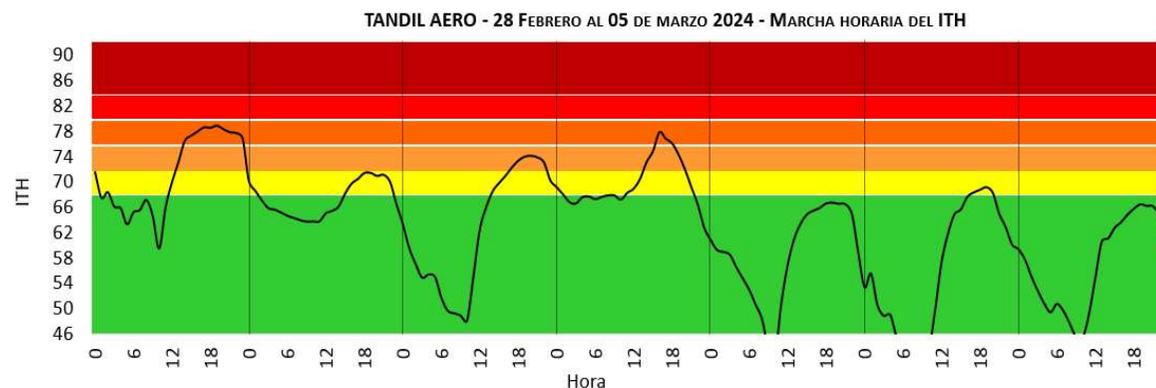


| BS AS (S) y RIO NEGRO | Fecha | ITH - Media diaria | ITH - Max diario | Horas con ITH >= 72 |
|----------------------------|--------|--------------------|------------------|---------------------|
| Tandil SMN 87465 | 28 feb | 71,37 | 78,89 | 11 |
| | 29 feb | 67,23 | 71,43 | 0 |
| | 01 mar | 62,38 | 74,14 | 6 |
| | 02 mar | 69,80 | 77,86 | 6 |
| | 03 mar | 58,58 | 66,74 | 0 |
| | 04 mar | 56,45 | 69,19 | 0 |
| | 05 mar | 57,10 | 66,48 | 0 |

| | | | | |
|----------------------------------|--------|-------|-------|----|
| Bahía Blanca SMN 87750 | 28 feb | 72,28 | 68,79 | 10 |
| | 29 feb | 66,07 | 61,97 | 6 |
| | 01 mar | 68,03 | 62,26 | 11 |
| | 02 mar | 71,69 | 75,18 | 13 |
| | 03 mar | 58,85 | 55,27 | 0 |
| | 04 mar | 59,70 | 55,98 | 0 |
| | 05 mar | 59,86 | 56,84 | 0 |

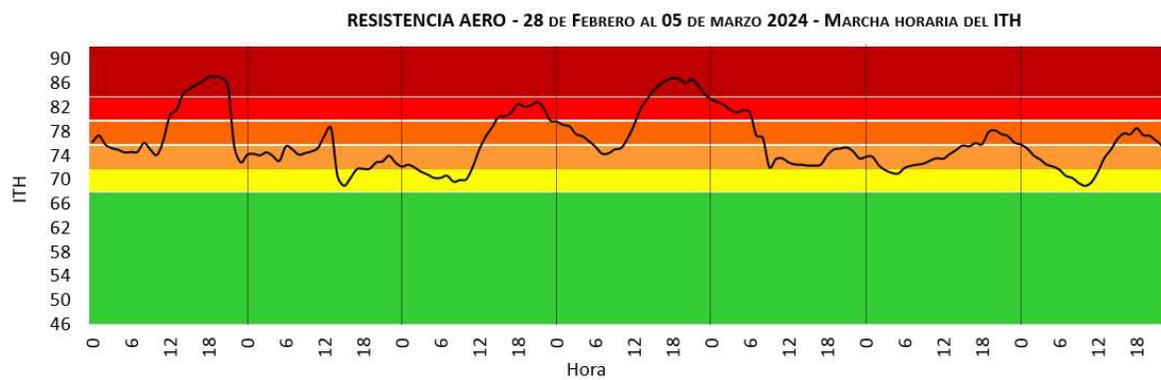
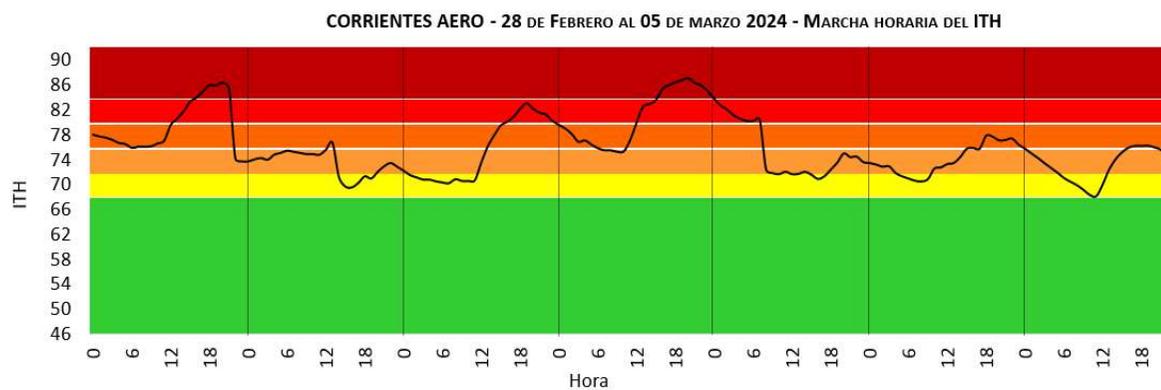
| | | | | |
|----------------------------|--------|-------|-------|----|
| Viedma SMN 87791 | 28 feb | 68,99 | 72,18 | 2 |
| | 29 feb | 63,48 | 74,40 | 5 |
| | 01 mar | 71,80 | 80,23 | 11 |
| | 02 mar | 65,15 | 68,47 | 0 |
| | 03 mar | 57,21 | 64,52 | 0 |
| | 04 mar | 56,16 | 63,81 | 0 |
| | 05 mar | 59,72 | 68,47 | 0 |

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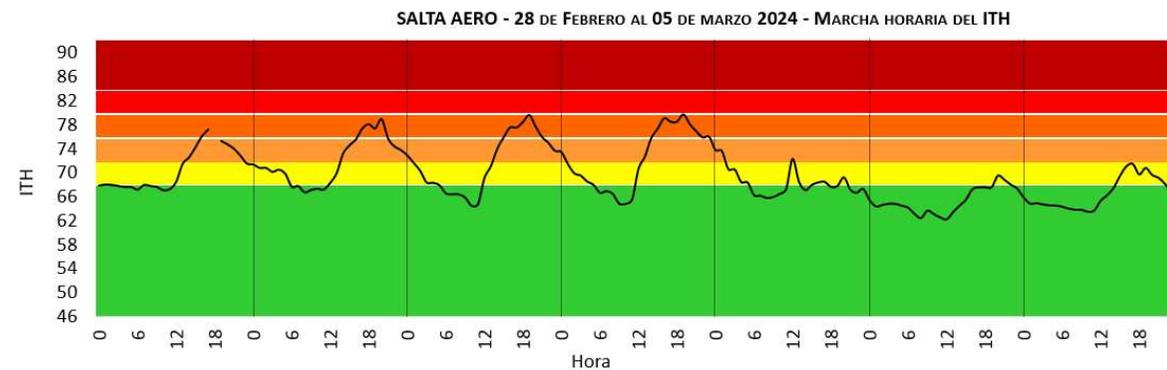
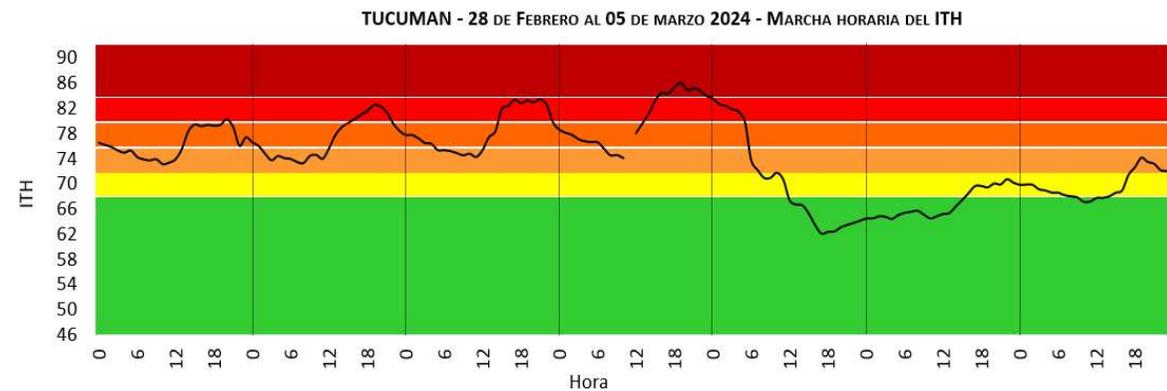
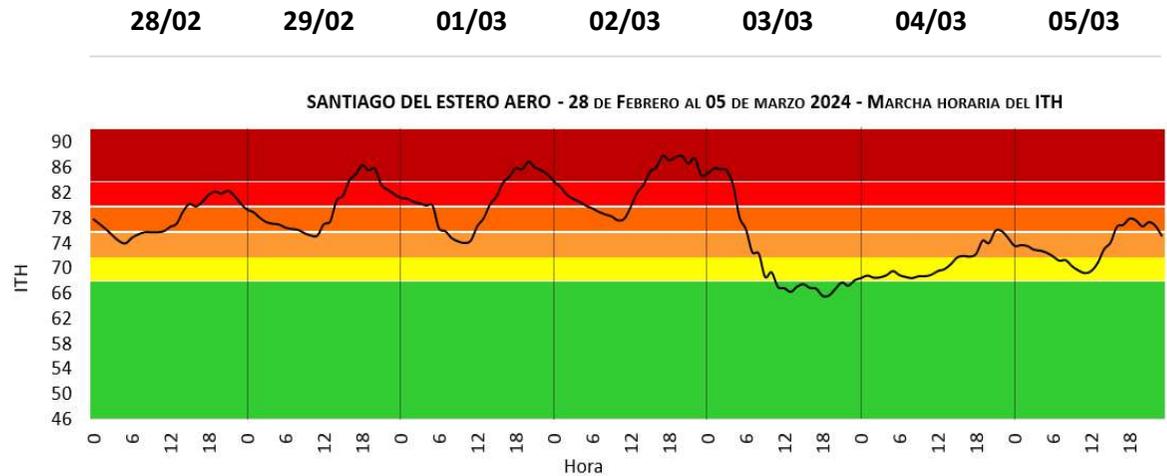


| NEA | Fecha | ITH - Media diaria | ITH - Max diario | Horas con ITH >= 72 |
|---------------------------------|--------|--------------------|------------------|---------------------|
| Corrientes SMN 87166 | 28 feb | 79,56 | 86,45 | 24 |
| | 29 feb | 73,57 | 76,83 | 18 |
| | 01 mar | 75,47 | 83,17 | 13 |
| | 02 mar | 80,90 | 87,15 | 24 |
| | 03 mar | 75,59 | 83,86 | 17 |
| | 04 mar | 74,12 | 77,95 | 18 |
| | 05 mar | 73,22 | 76,36 | 17 |
| Resistencia SMN 87155 | 28 feb | 79,33 | 87,14 | 24 |
| | 29 feb | 73,65 | 78,65 | 18 |
| | 01 mar | 75,71 | 82,93 | 16 |
| | 02 mar | 80,75 | 86,87 | 24 |
| | 03 mar | 76,29 | 83,37 | 24 |
| | 04 mar | 74,31 | 78,21 | 20 |
| Formosa SMN 87162 | 28 feb | 81,72 | 88,46 | 24 |
| | 29 feb | 76,36 | 79,59 | 24 |
| | 01 mar | 77,07 | 84,43 | 21 |
| | 02 mar | 81,35 | 87,70 | 24 |
| | 03 mar | 78,74 | 83,40 | 24 |
| | 04 mar | 75,55 | 78,68 | 24 |
| | 05 mar | 75,72 | 79,88 | 23 |

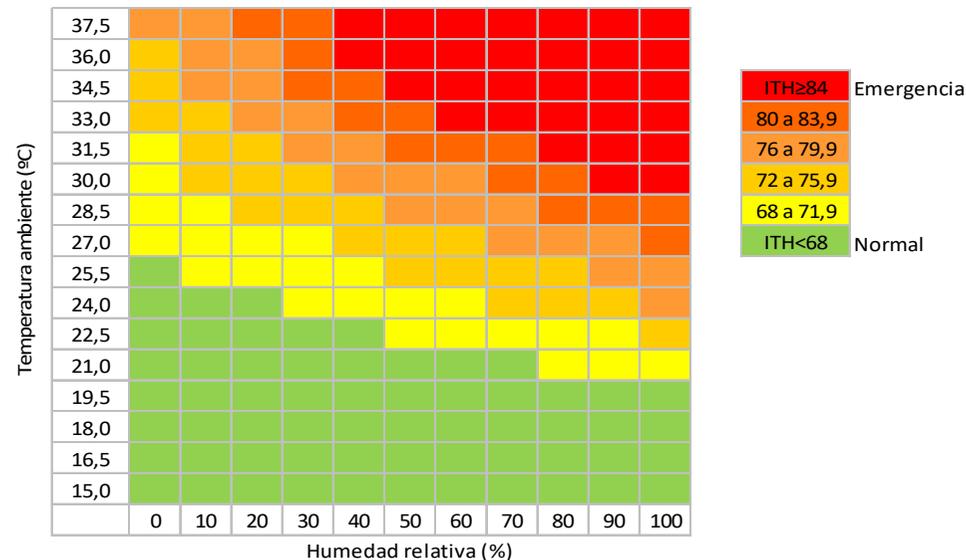
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| NOA | Fecha | ITH - Media diaria | ITH - Max diario | Horas con ITH >= 72 |
|---|--------|--------------------|------------------|---------------------|
| Santiago del Estero SMN 87129 | 28 feb | 77,93 | 82,30 | 24 |
| | 29 feb | 79,70 | 86,32 | 24 |
| | 01 mar | 80,49 | 86,89 | 24 |
| | 02 mar | 82,75 | 87,86 | 24 |
| | 03 mar | 72,15 | 85,84 | 9 |
| | 04 mar | 70,74 | 75,94 | 6 |
| | 05 mar | 73,52 | 77,87 | 16 |
| Tucumán SMN 87121 | 28 feb | 76,45 | 80,32 | 24 |
| | 29 feb | 77,25 | 82,57 | 24 |
| | 01 mar | 78,55 | 83,54 | 24 |
| | 02 mar | 80,13 | 86,16 | 23 |
| | 03 mar | 70,56 | 83,70 | 8 |
| | 05 mar | 69,73 | 74,18 | 6 |
| Salta SMN 87047 | 28 feb | 70,53 | 77,27 | 8 |
| | 29 feb | 71,94 | 79,00 | 10 |
| | 01 mar | 71,72 | 79,65 | 11 |
| | 02 mar | 72,38 | 79,77 | 12 |
| | 03 mar | 68,51 | 73,87 | 3 |
| | 05 mar | 66,69 | 71,55 | 0 |



Es el indicador más utilizado para monitorear si las condiciones ambientales resultan estresantes para los bovinos, considerándose que valores de ITH superiores al rango **68 – 72 ocasionan discomfort térmico en ganadero lechero y a partir de ITH 76 para bovinos de carne**. La hora más crítica suele producirse alrededor de las 15:00 – 17:00, cuando se maximiza la temperatura ambiente. No obstante, en los meses de verano desde las 8:00 y hasta horas cercanas a la medianoche, el ganado suele estar sometido a estrés. Otro concepto importante es el de **ola de calor**, que se produce cuando el ITH promedio diario supera durante tres días consecutivos el valor umbral entre confort y discomfort (ITH 72 para bovinos de leche). En la tabla siguiente se presenta a modo orientativo, el grado probable de severidad en colores asociado a diferentes rangos de ITH (adaptada de Armstrong, 1994).



Referencias: Armstrong, DV. 1994. Heat stress interaction with shade and cooling. J. Dairy Sci. 77:2004-2050

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