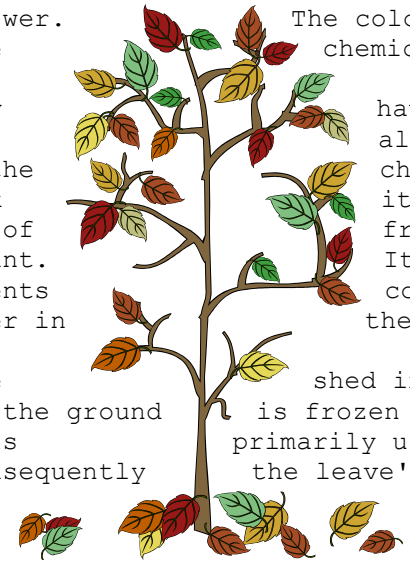
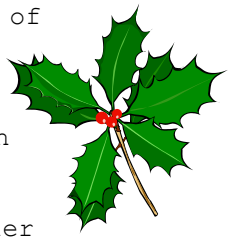
Color of Fall Leaves

(Allegro BT)

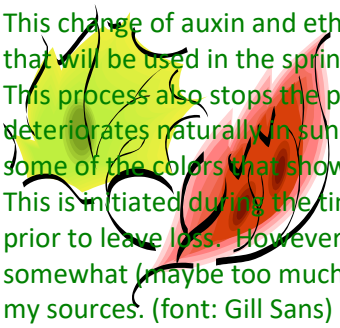
Why do leaves change color in the fall? Is the cold a contributing factor? What determines the ultimate color of a leaf? Is the change due to an absence of chlorophyll or the presence of something else? (font: Monotype Corsiva)



This will be a partial answer. The colors are due to chemicals called carotenes, the same chemicals that give rise to color of carrots.
There are several and they have different colors. They are present in the leaves all of the time. We see them in the fall because the chlorophyll production in the leaves stops. I think it is due to the cooling, not directly the presence of freezing temperatures, it seems to depend on the plant. It would be a good experiment to see what events contribute to the changes. Clearly the amount of water in the plant contributes to the quality of the color.
The reason that leaves are shed in the fall is to help the plant preserve water when the ground is frozen and water is not readily available. Stored water is primarily used in the winter months. The loss of leaves and consequently the leave's color change is due to plant's ethylene gas and auxin balance changes. Ethylene causes aging in plants and auxin levels stimulate growth. Their levels apparently This varies widely between species. Consequently, with most deciduous leaves, when auxin levels decrease and ethylene increases, enzymes begin to digest the cellulose of the abscission layer (the point the leave stem separates from the plant.) This change of balance is related to reduced sunlight periods (photo periods), but apparently, other facts such as moisture available to the roots and amount of tree water storage, drying winds, and yes, cold stress can be a factor, among other factors as well.(font: Courier New)



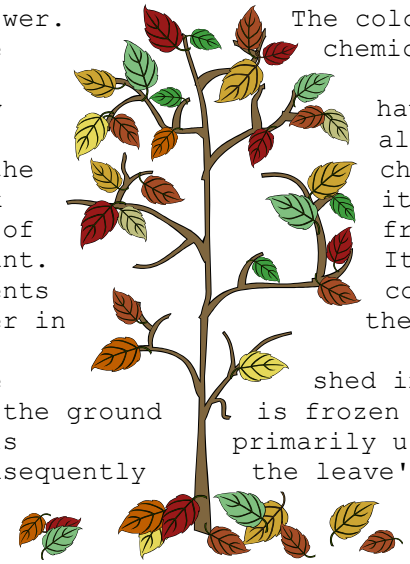
This change of auxin and ethylene balance apparent triggers the absorption of nutrients from the leaf that will be used in the spring to grow new leaves.
This process also stops the production of the dark green chlorophyll to replace the chlorophyll that deteriorates naturally in sunlight. Many people do not know that the many plants actually produce some of the colors that show after the green chlorophyll deteriorates at the end of the growing season. This is initiated during the time of the change of balance between auxins and ethylene, just prior to leave loss. However, many of the colors were there all along. I have simplified the explanation somewhat (maybe too much), and not all of this is completely understood at this writing to my sources. (font: Gill Sans)



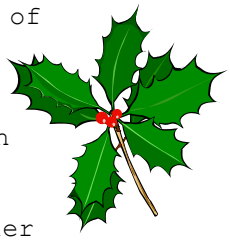
Color of Fall Leaves

(Allegro BT)

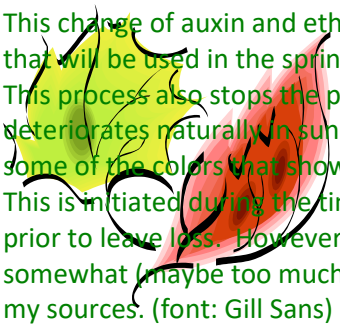
Why do leaves change color in the fall? Is the cold a contributing factor? What determines the ultimate color of a leaf? Is the change due to an absence of chlorophyll or the presence of something else? (font: Monotype Corsiva)



This will be a partial answer. The colors are due to chemicals called carotenes, the same chemicals that give rise to color of carrots.
There are several and they have different colors. They are present in the leaves all of the time. We see them in the fall because the chlorophyll production in the leaves stops. I think it is due to the cooling, not directly the presence of freezing temperatures, it seems to depend on the plant. It would be a good experiment to see what events contribute to the changes. Clearly the amount of water in the plant contributes to the quality of the color.
The reason that leaves are shed in the fall is to help the plant preserve water when the ground is frozen and water is not readily available. Stored water is primarily used in the winter months. The loss of leaves and consequently the leave's color change is due to plant's ethylene gas and auxin balance changes. Ethylene causes aging in plants and auxin levels stimulate growth. Their levels apparently This varies widely between species. Consequently, with most deciduous leaves, when auxin levels decrease and ethylene increases, enzymes begin to digest the cellulose of the abscission layer (the point the leave stem separates from the plant.) This change of balance is related to reduced sunlight periods (photo periods), but apparently, other facts such as moisture available to the roots and amount of tree water storage, drying winds, and yes, cold stress can be a factor, among other factors as well.(font: Courier New)



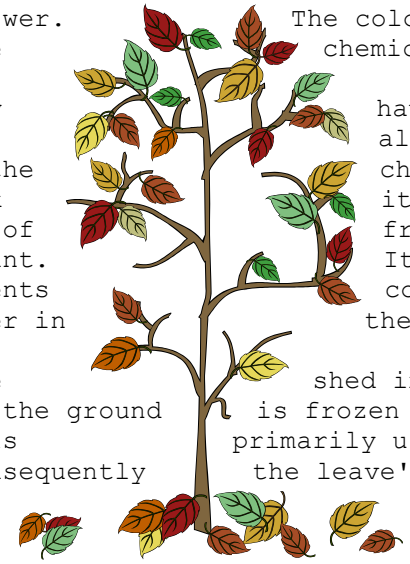
This change of auxin and ethylene balance apparent triggers the absorption of nutrients from the leaf that will be used in the spring to grow new leaves.
This process also stops the production of the dark green chlorophyll to replace the chlorophyll that deteriorates naturally in sunlight. Many people do not know that the many plants actually produce some of the colors that show after the green chlorophyll deteriorates at the end of the growing season. This is initiated during the time of the change of balance between auxins and ethylene, just prior to leave loss. However, many of the colors were there all along. I have simplified the explanation somewhat (maybe too much), and not all of this is completely understood at this writing to my sources. (font: Gill Sans)



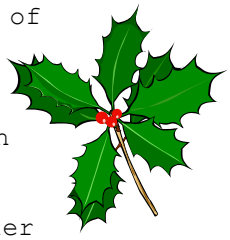
Color of Fall Leaves

(Allegro BT)

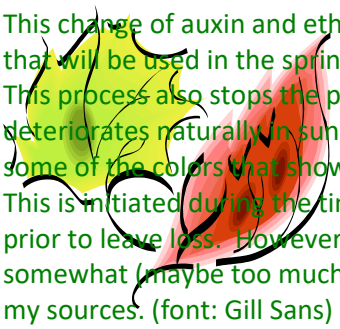
Why do leaves change color in the fall? Is the cold a contributing factor? What determines the ultimate color of a leaf? Is the change due to an absence of chlorophyll or the presence of something else? (font: Monotype Corsiva)



This will be a partial answer. The colors are due to chemicals called carotenes, the same chemicals that give rise to color of carrots.
There are several and they have different colors. They are present in the leaves all of the time. We see them in the fall because the chlorophyll production in the leaves stops. I think it is due to the cooling, not directly the presence of freezing temperatures, it seems to depend on the plant. It would be a good experiment to see what events contribute to the changes. Clearly the amount of water in the plant contributes to the quality of the color.
The reason that leaves are shed in the fall is to help the plant preserve water when the ground is frozen and water is not readily available. Stored water is primarily used in the winter months. The loss of leaves and consequently the leave's color change is due to plant's ethylene gas and auxin balance changes. Ethylene causes aging in plants and auxin levels stimulate growth. Their levels apparently This varies widely between species. Consequently, with most deciduous leaves, when auxin levels decrease and ethylene increases, enzymes begin to digest the cellulose of the abscission layer (the point the leave stem separates from the plant.) This change of balance is related to reduced sunlight periods (photo periods), but apparently, other facts such as moisture available to the roots and amount of tree water storage, drying winds, and yes, cold stress can be a factor, among other factors as well.(font: Courier New)



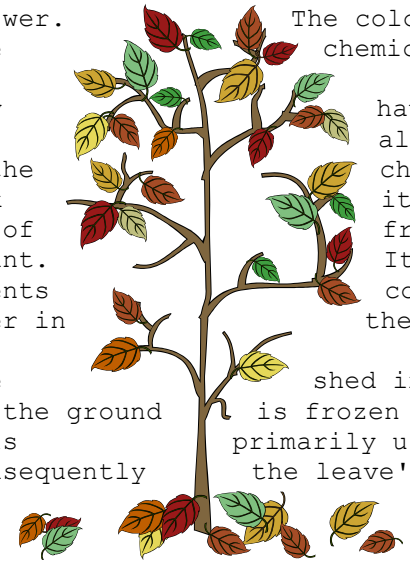
This change of auxin and ethylene balance apparent triggers the absorption of nutrients from the leaf that will be used in the spring to grow new leaves.
This process also stops the production of the dark green chlorophyll to replace the chlorophyll that deteriorates naturally in sunlight. Many people do not know that the many plants actually produce some of the colors that show after the green chlorophyll deteriorates at the end of the growing season. This is initiated during the time of the change of balance between auxins and ethylene, just prior to leave loss. However, many of the colors were there all along. I have simplified the explanation somewhat (maybe too much), and not all of this is completely understood at this writing to my sources. (font: Gill Sans)



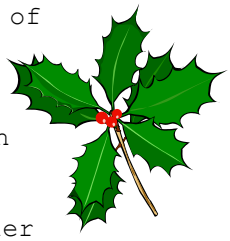
Color of Fall Leaves

(Allegro BT)

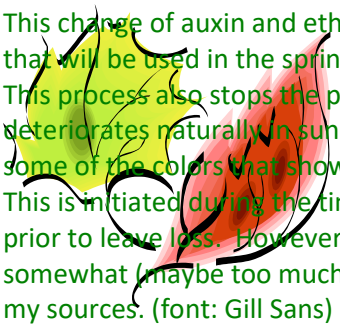
Why do leaves change color in the fall? Is the cold a contributing factor? What determines the ultimate color of a leaf? Is the change due to an absence of chlorophyll or the presence of something else? (font: Monotype Corsiva)



This will be a partial answer. The colors are due to chemicals called carotenes, the same chemicals that give rise to color of carrots.
There are several and they have different colors. They are present in the leaves all of the time. We see them in the fall because the chlorophyll production in the leaves stops. I think it is due to the cooling, not directly the presence of freezing temperatures, it seems to depend on the plant. It would be a good experiment to see what events contribute to the changes. Clearly the amount of water in the plant contributes to the quality of the color.
The reason that leaves are shed in the fall is to help the plant preserve water when the ground is frozen and water is not readily available. Stored water is primarily used in the winter months. The loss of leaves and consequently the leave's color change is due to plant's ethylene gas and auxin balance changes. Ethylene causes aging in plants and auxin levels stimulate growth. Their levels apparently This varies widely between species. Consequently, with most deciduous leaves, when auxin levels decrease and ethylene increases, enzymes begin to digest the cellulose of the abscission layer (the point the leave stem separates from the plant.) This change of balance is related to reduced sunlight periods (photo periods), but apparently, other facts such as moisture available to the roots and amount of tree water storage, drying winds, and yes, cold stress can be a factor, among other factors as well.(font: Courier New)



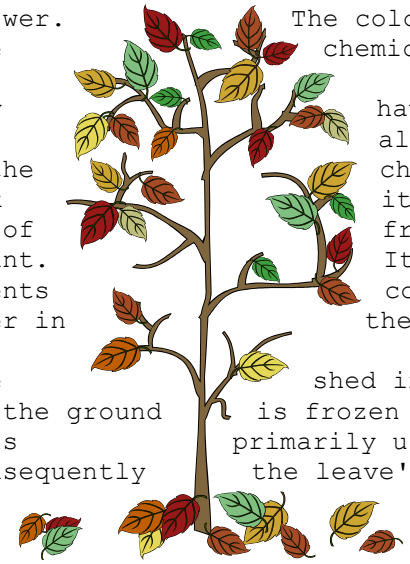
This change of auxin and ethylene balance apparent triggers the absorption of nutrients from the leaf that will be used in the spring to grow new leaves.
This process also stops the production of the dark green chlorophyll to replace the chlorophyll that deteriorates naturally in sunlight. Many people do not know that the many plants actually produce some of the colors that show after the green chlorophyll deteriorates at the end of the growing season. This is initiated during the time of the change of balance between auxins and ethylene, just prior to leave loss. However, many of the colors were there all along. I have simplified the explanation somewhat (maybe too much), and not all of this is completely understood at this writing to my sources. (font: Gill Sans)



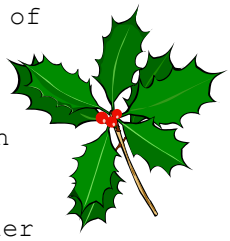
Color of Fall Leaves

(Allegro BT)

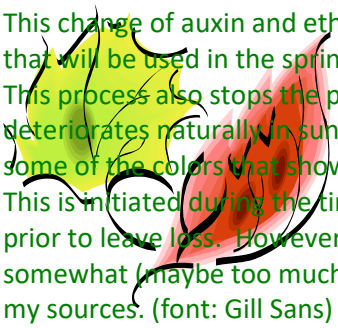
Why do leaves change color in the fall? Is the cold a contributing factor? What determines the ultimate color of a leaf? Is the change due to an absence of chlorophyll or the presence of something else? (font: Monotype Corsiva)



This will be a partial answer. The colors are due to chemicals called carotenes, the same chemicals that give rise to color of carrots.
There are several and they have different colors. They are present in the leaves all of the time. We see them in the fall because the chlorophyll production in the leaves stops. I think it is due to the cooling, not directly the presence of freezing temperatures, it seems to depend on the plant. It would be a good experiment to see what events contribute to the changes. Clearly the amount of water in the plant contributes to the quality of the color.
The reason that leaves are shed in the fall is to help the plant preserve water when the ground is frozen and water is not readily available. Stored water is primarily used in the winter months. The loss of leaves and consequently the leave's color change is due to plant's ethylene gas and auxin balance changes. Ethylene causes aging in plants and auxin levels stimulate growth. Their levels apparently This varies widely between species. Consequently, with most deciduous leaves, when auxin levels decrease and ethylene increases, enzymes begin to digest the cellulose of the abscission layer (the point the leave stem separates from the plant.) This change of balance is related to reduced sunlight periods (photo periods), but apparently, other facts such as moisture available to the roots and amount of tree water storage, drying winds, and yes, cold stress can be a factor, among other factors as well.(font: Courier New)



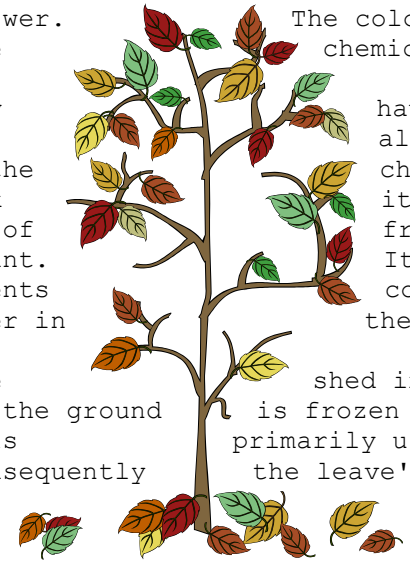
This change of auxin and ethylene balance apparent triggers the absorption of nutrients from the leaf that will be used in the spring to grow new leaves.
This process also stops the production of the dark green chlorophyll to replace the chlorophyll that deteriorates naturally in sunlight. Many people do not know that the many plants actually produce some of the colors that show after the green chlorophyll deteriorates at the end of the growing season. This is initiated during the time of the change of balance between auxins and ethylene [illegible] just prior to leave loss. However, many of the colors were there all along. I have simplified the explanation somewhat (maybe too much), and not all of this is completely understood at this [illegible]ing to my sources. (font: Gill Sans)



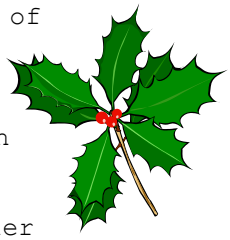
Color of Fall Leaves

(Allegro BT)

Why do leaves change color in the fall? Is the cold a contributing factor? What determines the ultimate color of a leaf? Is the change due to an absence of chlorophyll or the presence of something else? (font: Monotype Corsiva)



This will be a partial answer. The colors are due to chemicals called carotenes, the same chemicals that give rise to color of carrots.
There are several and they have different colors. They are present in the leaves all of the time. We see them in the fall because the chlorophyll production in the leaves stops. I think it is due to the cooling, not directly the presence of freezing temperatures, it seems to depend on the plant. It would be a good experiment to see what events contribute to the changes. Clearly the amount of water in the plant contributes to the quality of the color.
The reason that leaves are shed in the fall is to help the plant preserve water when the ground is frozen and water is not readily available. Stored water is primarily used in the winter months. The loss of leaves and consequently the leave's color change is due to plant's ethylene gas and auxin balance changes. Ethylene causes aging in plants and auxin levels stimulate growth. Their levels apparently This varies widely between species. Consequently, with most deciduous leaves, when auxin levels decrease and ethylene increases, enzymes begin to digest the cellulose of the abscission layer (the point the leave stem separates from the plant.) This change of balance is related to reduced sunlight periods (photo periods), but apparently, other facts such as moisture available to the roots and amount of tree water storage, drying winds, and yes, cold stress can be a factor, among other factors as well.(font: Courier New)



This change of auxin and ethylene balance apparent triggers the absorption of nutrients from the leaf that will be used in the spring to grow new leaves.
This process also stops the production of the dark green chlorophyll to replace the chlorophyll that deteriorates naturally in sunlight. Many people do not know that the many plants actually produce some of the colors that show after the green chlorophyll deteriorates at the end of the growing season. This is initiated during the time of the change of balance between auxins and ethylene, just prior to leave loss. However, many of the colors were there all along. I have simplified the explanation somewhat (maybe too much), and not all of this is completely understood at this writing to my sources. (font: Gill Sans)